Consumer Surplus / Producer Surplus

Traditional treatment

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

\[ \text{Loss} = \frac{1}{2} \text{tariff} \]

\[ \text{LOSS} = \frac{1}{2} \text{tariff} \times \Delta \text{Imports} = \frac{1}{2} \text{tariff} \times \frac{\Delta \text{Imports}}{\Delta \text{price}} \times \frac{\text{Imports}}{\text{price}} \times \text{Imports} \times \text{tariff} = \frac{1}{2} \text{tariff}^2 \times \text{Import Elasticity} \times \text{Import Quantity} \]
Consumer Surplus

\[ X = \text{exportable} \quad M = \text{importable} \]

\[ dX = \text{the amount you would be willing to pay in terms of } X \text{ to have the exchange opportunity} \]

\[ dM = \text{the amount you would be willing to pay in terms of } M \text{ to have the exchange opportunity} \]

\[ dM = \left( \frac{p_X}{p_M} \right) dX \]

These are areas below/above compensated demand curves: