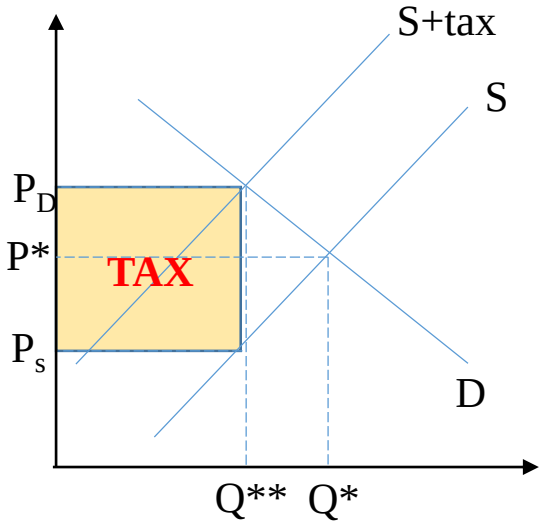
TAX

→ *Creates **tax wedge***

$t = P_D - P_S$

→ *Tax imposed on either:*

SELLER



Tax Equilibrium P_DQ^{**}

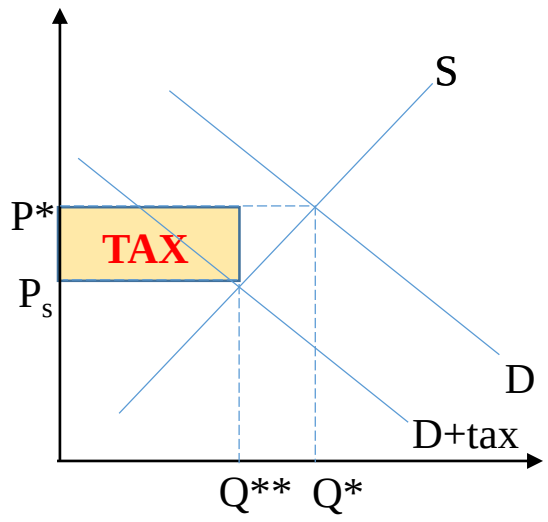
TR to firm: $P_s\ Q^{**}$

Consumers pay P_D

Because tax can be pushed onto consumers

→ they pay P*+ tax

BUYER



Tax Equilibrium P^*Q^{**}

TR to firm: $P_s\ Q^{**}$

Very rare tax is imposed on buyer

Because buyer are tax collecting agent. Consumer pays seller P_S because they pay tax separately.

$Q_D = 120 - 20P$

$Q_S = 20P_S$

Suppose you impose $2 tax on each commodity

{P*Q*} = {3,60}

Initial equilibrium

$$\boldsymbol{Q_D = Q_S}$$
$$120 - 20P^* = 20P^*$$
$$40P^* = 120$$
$$P^* = 3$$
$$Q^* = 20(3)$$
$$= 30$$

Tax imposed on sellers

$$Q_S = 20P_S$$
$$= 20(P_D - 2)$$
$$\boxed{Q_S = 20(P_D - 2)}$$

New shifted supply curve

Tax equilibrium

$$Q_D = Q_S$$
$$120 - 20P_D = 20(P_D - 2)$$
$$40P_D = 160$$
$$P_D = 4$$

Q does not change at that point

1. $Q^{**} = 40$

2. $P_S = P_D - t$

$$P_S = \frac{40}{20}$$
$$P_S = 2$$

$$P_S = 4 - 2$$
$$P_S = 2$$

$$\boldsymbol{P_D = 4, P_S = 2}$$
$$\boldsymbol{Q^* = 40}$$

Tax imposed on buyer

$$Q_D = 120 - 20P_D$$
$$= 120 - 20(P_S + t)$$
$$\boxed{Q_D = 120 - 20(P_D + t)}$$

New shifted demand curve

Tax equilibrium

$$Q_D = Q_S$$
$$120 - 20P_D = 20(P_D - 2)$$
$$40P_D = 160$$
$$P_D = 4$$

Q does not change at that point

1. $Q^{**} = 40$

2. $P_D = P_S + t$

$$P_D = \frac{120 - 40}{20}$$
$$P_D = 2$$

$$P_D = 2 + 2$$
$$P_D = 2$$

$$\boldsymbol{P_D = 4, P_S = 2}$$
$$\boldsymbol{Q^* = 40}$$

DOESNT MATTER WHO TAX IS IMPOSED ON

→ tax=2 is the same!!

→ Q** does not change at any point

→ Consumer **ALWAYS** pays for the tax (selling price)

LECTURE 7

CHANGE IN WELFARE

TAX INCIDENCE

1. Recognize tax revenue =B+D
2. Amount of who pays the tax depends on the "slice" of tax
   ↑ area, ↑ tax burden

Effectiveness of tax depends on:

→ Size of tax

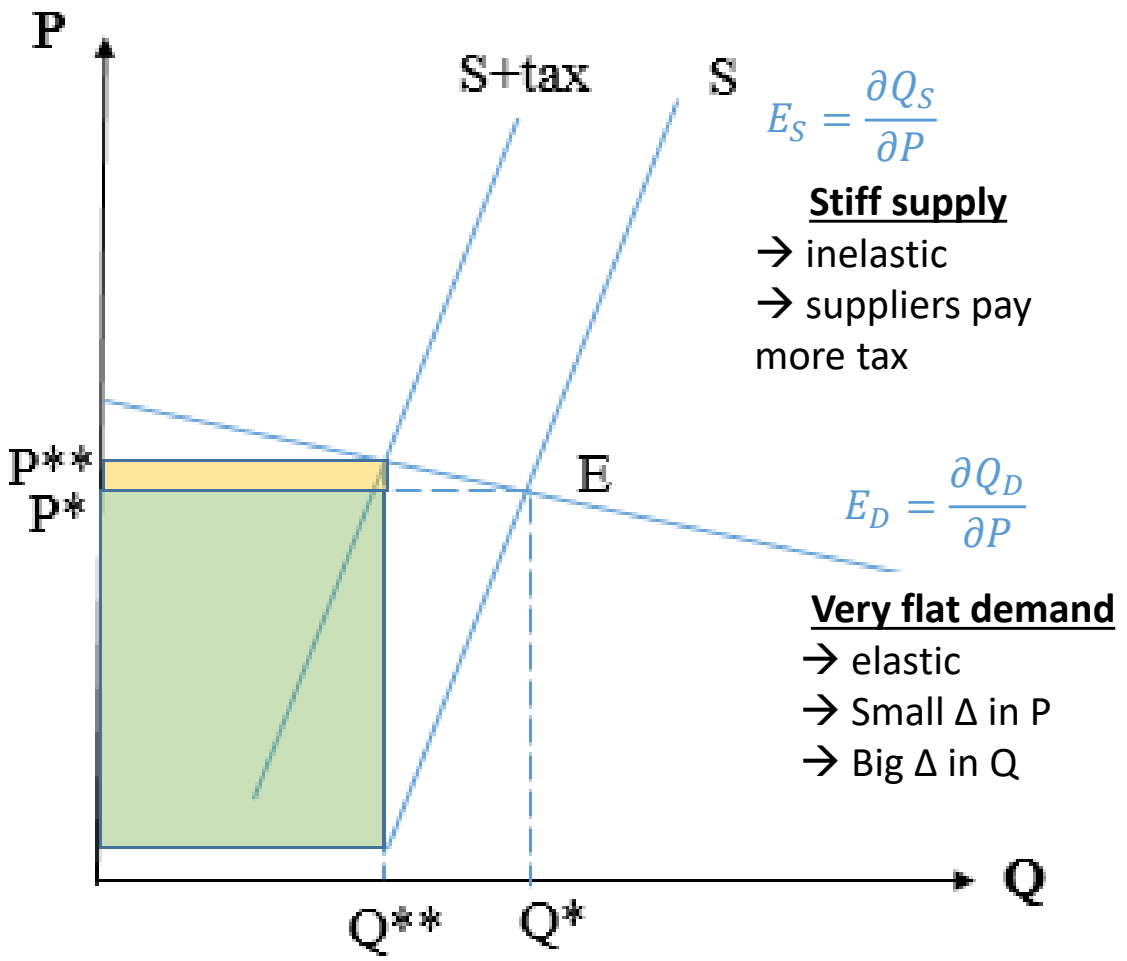
→ Relative Elasticity of demand and supply

IF PED=PES

→ Burden of tax/subsidy is shared!!

→ Rectangle is equally divided

- **Tax burden falls more on which side is relatively more price inelastic**
  - Supply→ sellers
  - Demand → consumers
- **Every time a tax is imposed, if consumers are more responsive to price**
  → they'll switch to substitutes
  → and pay less of the tax



$E_S = \frac{\partial Q_S}{\partial P}$

Stiff supply

→ inelastic

→ suppliers pay more tax

$E_D = \frac{\partial Q_D}{\partial P}$

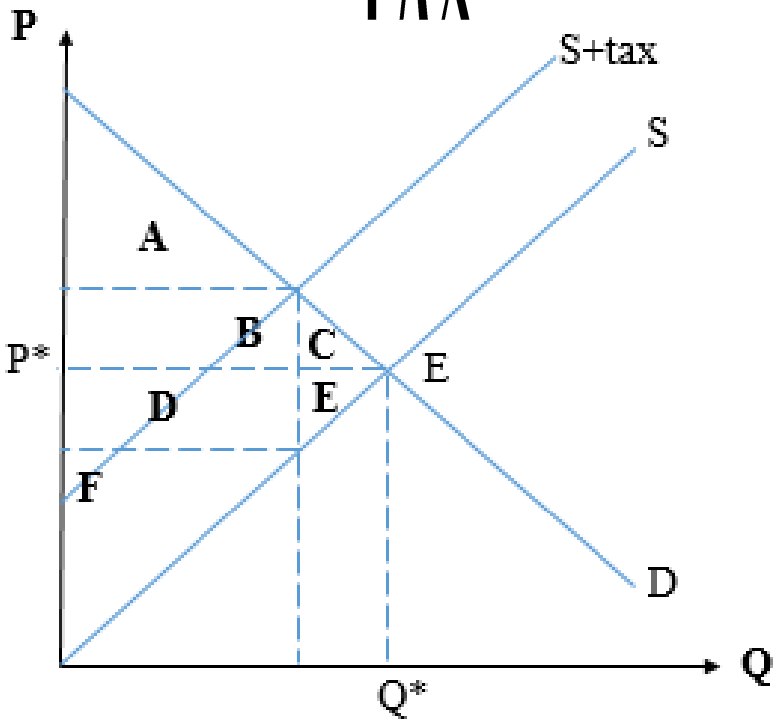
Very flat demand

→ elastic

→ Small Δ in P

→ Big Δ in Q

TAX

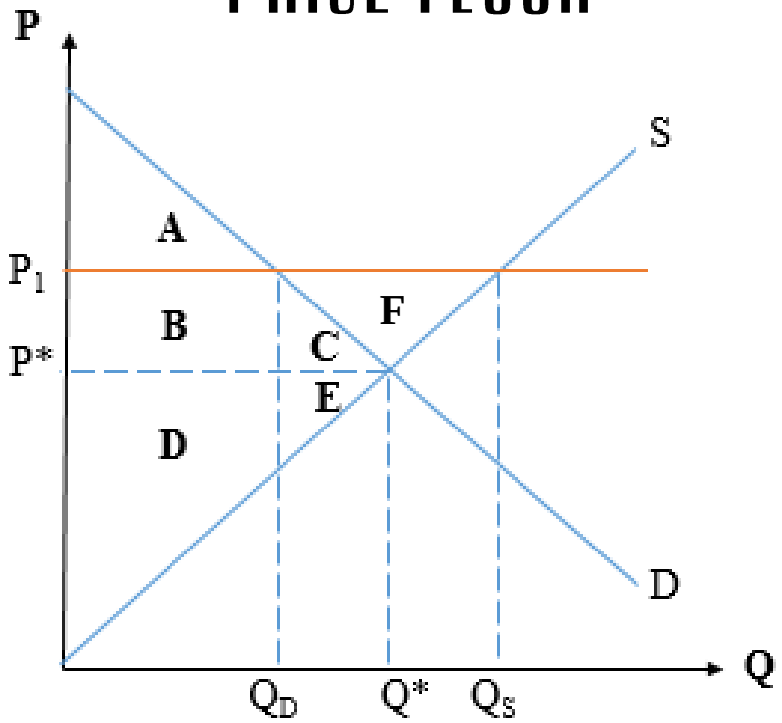


	Before	After	Difference
C_S	A+B+C	A	- B – C
P_S	D + E + F	F	- D – E
Govt	-	B + D	+ B + D
Society	-	-	- C – E

Deadweight loss

Potential trades that never happened

PRICE FLOOR

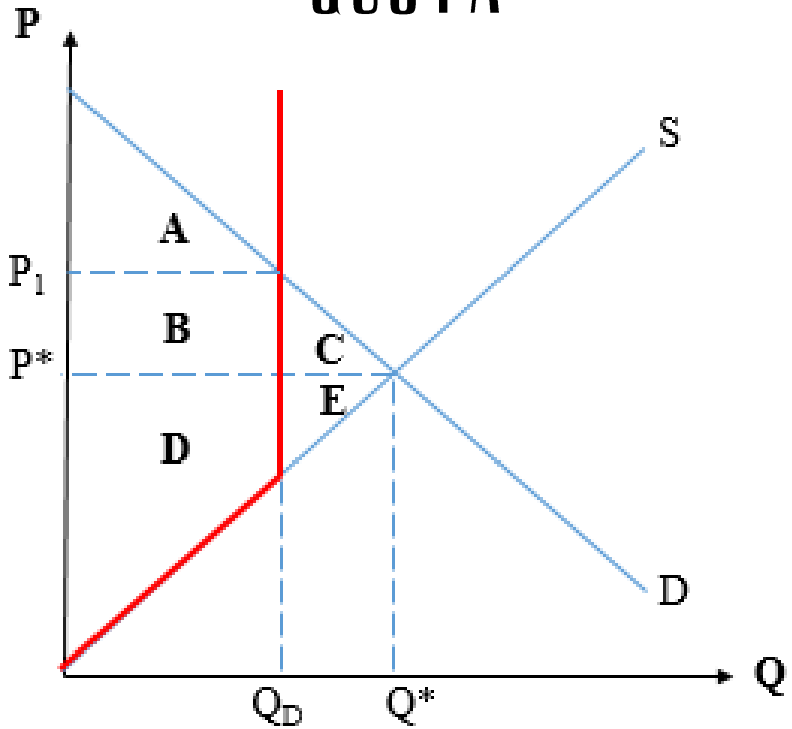


	Before	After	Difference
C_S	A+B+C	A	- B – C
P_S	D + E	+B+C+D +E+F	+B+C+E+F
Society	-	-	+F

Open trade is not necessarily bad!

Producers gain more surplus!!

QUOTA



	Before	After	Difference
C_S	A+B+C	A	- B – C
P_S	D + E	+ D + B	+ B – E
Society	-	-	- C – E

Creates kinked supply curve!

COMPARATIVE ADVANTAGE

Ability to produce g/s at lower opportunity cost than other producers

Countries produce less of goods with comparative advantage

EXPORT → *Goods they have absolute adv. in*

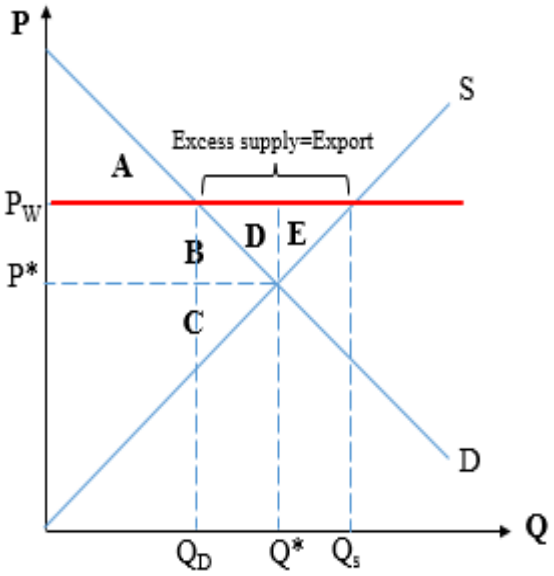
IMPORT → *Goods they have don't have absolute adv. in*

ABSOLUTE ADVANTAGE

Ability to produce g/s using fewer inputs than other producers

Note!! One may have absolute advantage in 2 things but should do one that has lower opp. cost

EXPORT



Initially → Autarky: P*Q*
Globalization → world price: P_w

→ Higher P
→ Consumers consume less
→ Excess supply become exports

D: Consumer Loss
units previously worth MB but now fetch P_w for each unit

E: Producer Gain
Add. Production for P_w> Opportunity cost of production

	Before	After	Difference
C_S	A+B	A	- B
P_S	C	B+C+D+E	+B+D+E
Society	A+B+C	+D+E	+D+E

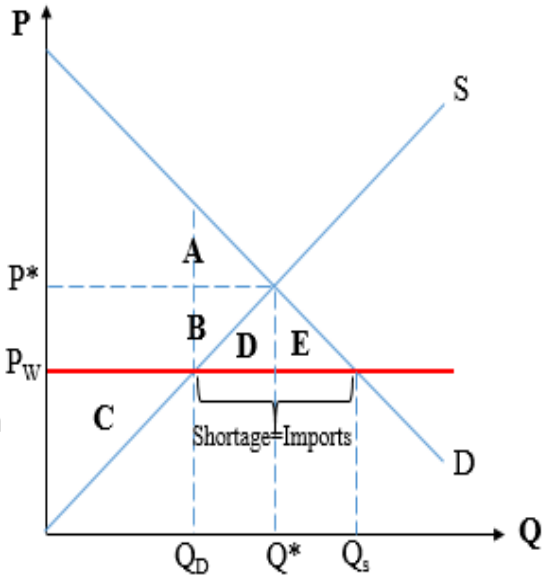
IMPORT

Initially → Autarky: P*Q*
Globalization → world price: P_w

→ Lower P
→ Consumers consume more
→ Due to shortage, causes import

D: Producer Loss
units previously Opp cost but can be bought at lower P

E: Consumer Gain
Add. Consumption at lower price + MB per unit



	Before	After	Difference
C_S	A+B	A	- B
P_S	C	B+C+D+E	+B+D+E
Society	A+B+C	+D+E	+D+E

CLOSED ECONOMY ⇨ OPEN ECONOMY

Possible to get more!
Trade may be good!

LECTURE 8