

ECO:101 – Introduction to Microeconomics

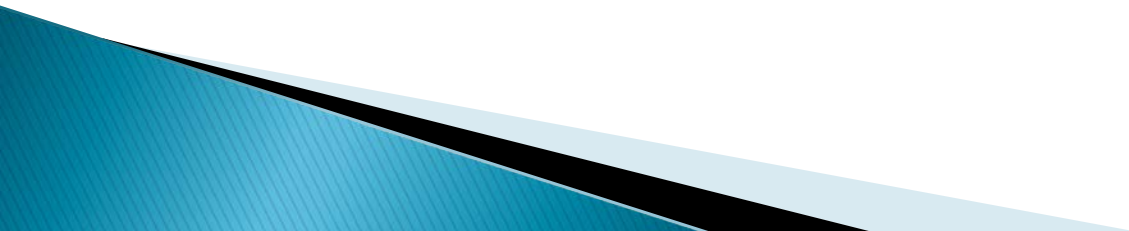
Lecture-12



Taxes

- ▶ Everything you earn and most things you buy are taxed.
- ▶ Let it be Income Tax or the Tax (VAT) you pay when you buy a good from the market

But who really pays these taxes ?



Tax Incidence

- ▶ Tax incidence is the **division** of the burden of a tax between **buyers and sellers**.



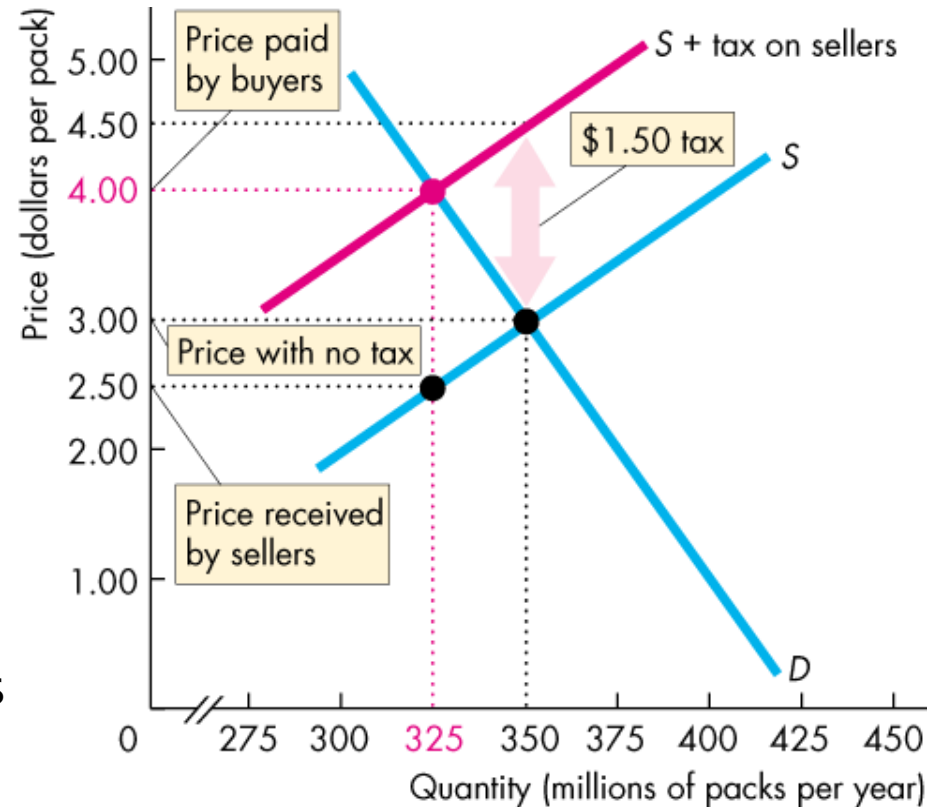
Tax on Sellers

- ▶ With no tax, the equilibrium price is \$3.00 a pack.
- ▶ A tax on sellers of \$1.50 a pack is introduced.
- ▶ Supply decreases and the curve *S + tax on sellers* shows the new supply curve.



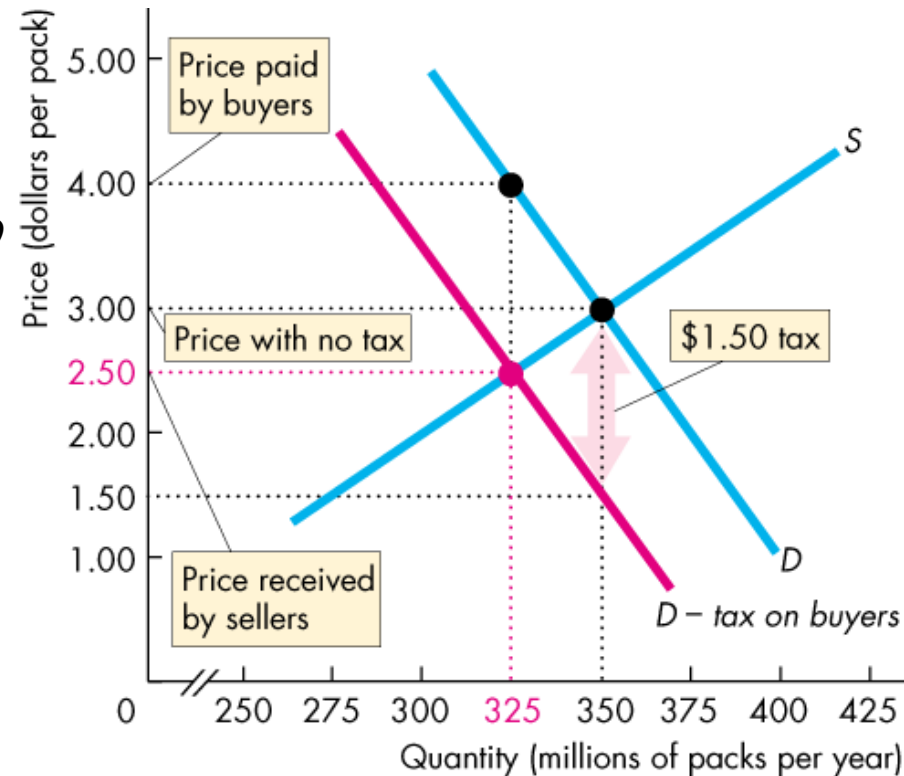
Tax on Sellers

- ▶ The market price paid by buyers rises to \$4.00 a pack and the quantity bought decreases to 325
- ▶ The price received by the sellers falls to \$2.50 a pack.
- ▶ So with the tax of \$1.50 a pack, buyers pay \$1.00 a pack more and sellers receive 50¢ a pack less
- ▶ When tax on Sellers the equilibrium price is Paid By BUYERS.



Tax on Buyers

- ▶ Again, with no tax, the equilibrium price is \$3.00 a pack.
- ▶ A tax on buyers of \$1.50 a pack is introduced.
- ▶ Demand decreases and the curve D – *tax on buyers shows the new demand curve*.
- ▶ The price received by sellers falls to \$2.50 a pack and the quantity decreases to 325 packs
- ▶ The price paid by buyers rises to \$4.00 a pack.
- ▶ So with the tax of \$1.50 a pack, buyers pay \$1.00 a pack more and sellers receive 50¢ a pack less.
- ▶ **Equilibrium Price here is received by the Supplier**



Tax

- ▶ So, you can see exactly the same case in both the scenarios :
- ▶ Buyers pay \$1.00 of the tax.
- ▶ Sellers pay the other 50¢ of the tax.

Therefore, Tax incidence is the **same** regardless of whether the law says sellers pay or buyers pay.



Tax and Elasticity of Demand

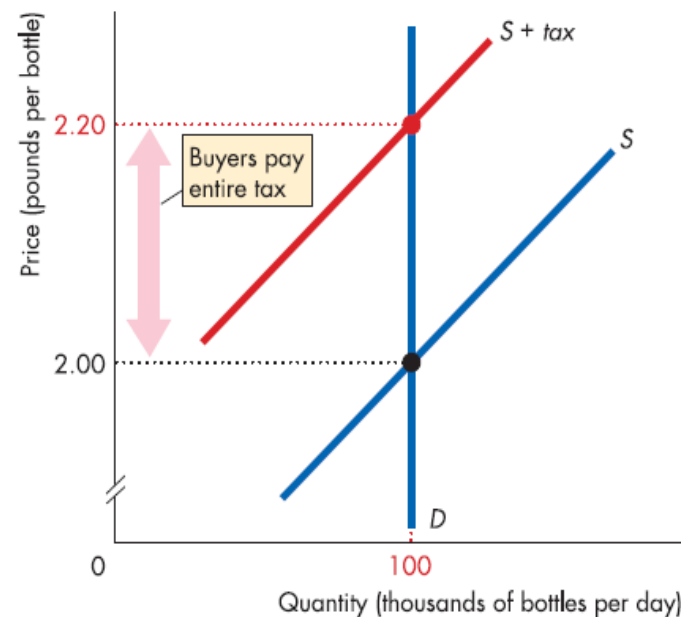
- ▶ The burden of Tax between buyers and sellers partly depends on PED. If:
 1. Perfectly **inelastic** demand – **Buyers** Pay
 2. Perfectly **elastic** demand – **Sellers** Pay



Perfectly **Inelastic** Demand

- ▶ Let us assume, Chemo has a tax imposed of 20tk
- ▶ Therefore we must add the tax to the previous price & we can see price rises to 220tk
- ▶ Since demand for Chemo is perfectly Inelastic we can see **Buyer pays the entire Tax**

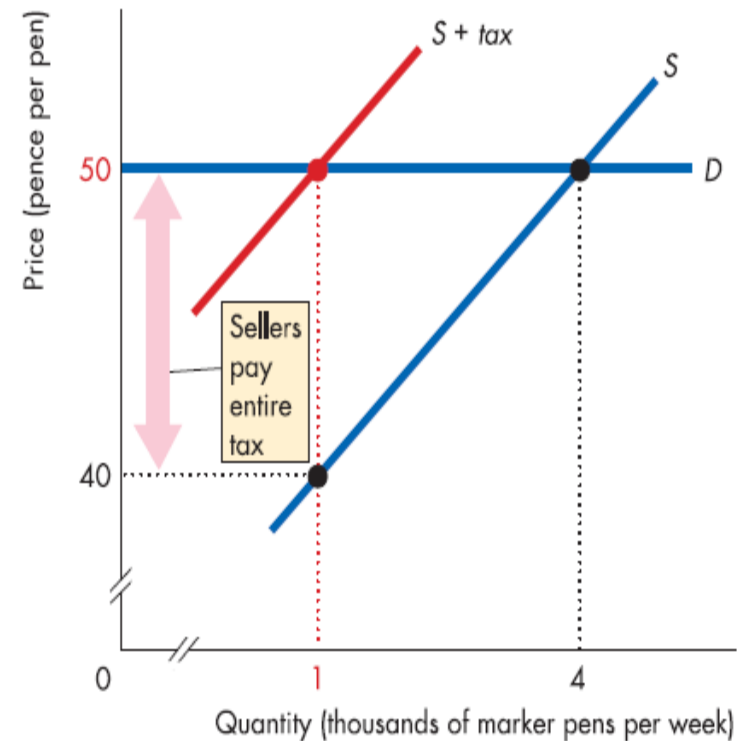
Tax and the Elasticity of Demand



(a) Inelastic demand

Perfectly Elastic Demand

- ▶ Let us assume pen has perfectly elastic demand
- ▶ If government imposes tax on pink pen of 10tk then supply falls and the entire tax of 10taka is paid by the **Seller**



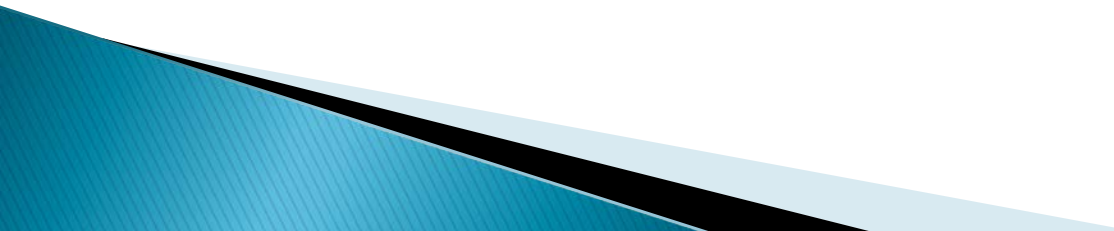
(b) Elastic demand

So the motto of PED is.....

The more **Inelastic** the demand the larger proportion of Tax paid by **Buyers**

&

The more **Elastic** the demand the larger proportion of Tax paid by **Sellers**



Tax and Elasticity of Supply

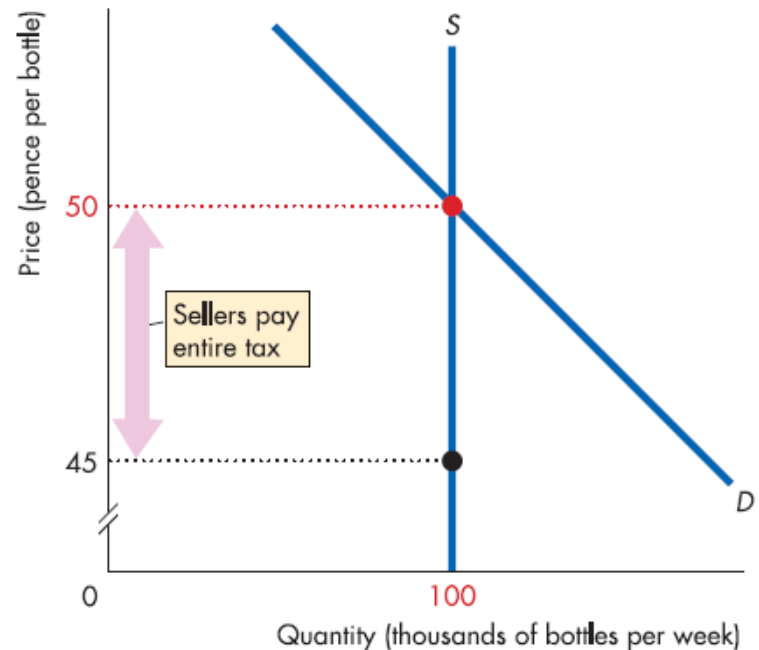
- ▶ The burden of tax can also rely upon the elasticity of supply:
 1. Perfectly **Inelastic** Supply: **Sellers** pay
 2. Perfectly **Elastic** Supply: **Buyers** pay



Perfectly Inelastic Supply

- ▶ Imagine government imposes tax on natural water bottles of 5tk.
- ▶ Supply curve does not change because producer will still produce same quantity
- ▶ And buyers will buy water only when price is 50tk. Therefore, the **Seller** has to bear the **entire Tax**

Tax and the Elasticity of Supply

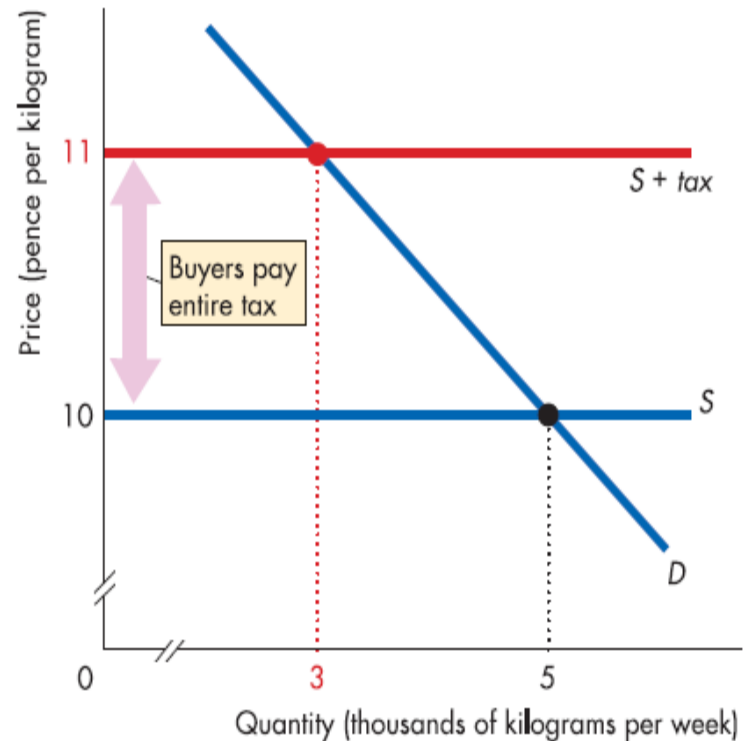


(a) Inelastic supply

Perfectly Elastic Supply

- ▶ If sand was initially 10tk and later taxed extra 1tk per kg, then supply falls
- ▶ The equilibrium price is paid by the buyer and we can see that price includes the tax.

Therefore **buyers** pays entire Tax when **perfectly Elastic** supply



(b) Elastic supply

So motto of Elasticity of Supply

The more **Supply Inelastic** the **supplier pays**
more the Tax

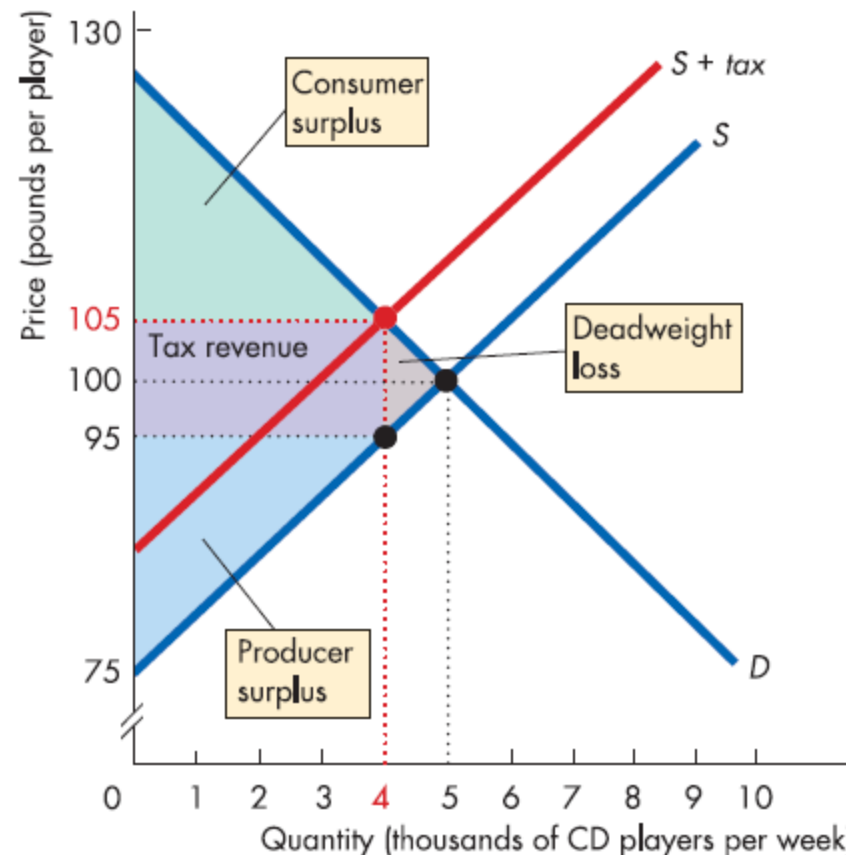
The more the **Supply Elastic** the **buyer pays**
more the Tax



Tax and Efficiency

- ▶ Consumer surplus falls
- ▶ Also Producer surplus falls
- ▶ The purple area is the Tax received by the government
- ▶ The grey area becomes our Dead-weight loss.
- ▶ Note: In extreme cases like Perfectly Inelastic Demand and Supply there is no Dead-weight Loss

Taxes and Efficiency



Eurekaaaa....

We have reached the half of our Syllabus!!!



Essential Readings for Today!

Economics. Parkin, Powell,
Matthews

8th Edition

Chapter:6, Pages: 133 to 137

