Taxes

Everything you earn and most things you buy are taxed.

Who *really* pays these taxes?

provincial sales tax and GST are added to the price of the most of the things you buy, so isn't it obvious that *you* pay these taxes?

Isn't it equally obvious that your employer pays the employer's contribution to the social insurance tax?

Not So!

Taxes

- Tax Incidence

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

  Who pays the tax depends on what happens to the market equilibrium price after tax is imposed.

Taxes

Tax incidence doesn't depend on tax law!

The law might impose a tax on buyers or sellers, but the outcome will be the same.

To see why, we look at the tax on cigarettes in Ontario.

On February 1, 2006, Ontario raised the tax on the sales of cigarettes to $3.00 a pack of 25 cigarettes.

What are the effects of this tax?

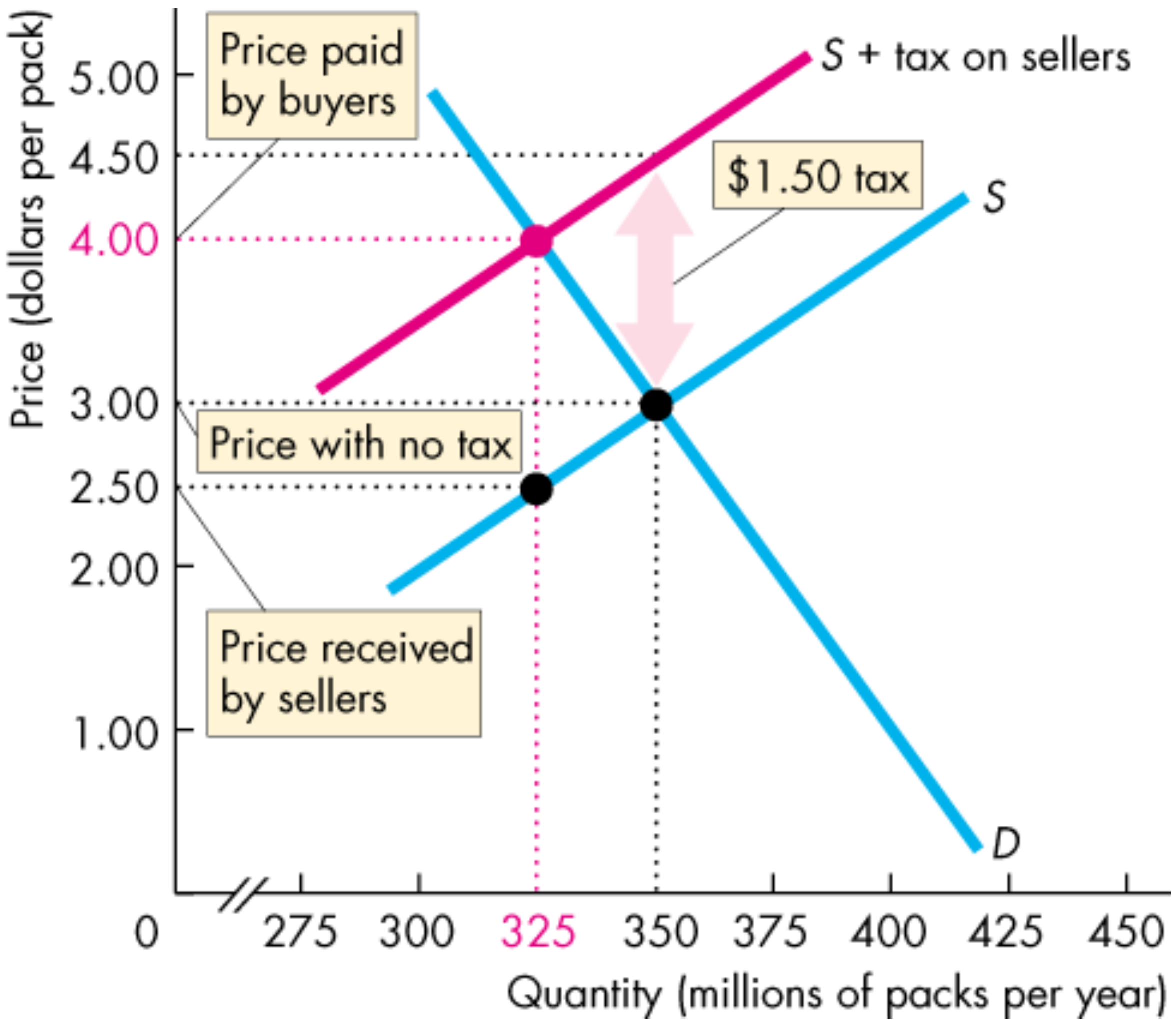
Taxes

- A Tax on Sellers

- With no tax-equilibrium price is $3.00 a pack.

- A tax on sellers of $1.50 a pack is introduced.

- Supply decreases
- curve *S* + *tax* -- new supply curve.



Price (dollars per pack)
5.00
4.50
4.00
3.00
2.50
2.00
1.00
0
Price paid by buyers
S + tax on sellers
$1.50 tax
S
Price with no tax
Price received by sellers
D
275
300
325
350
375
400
425
450
Quantity (millions of packs per year)

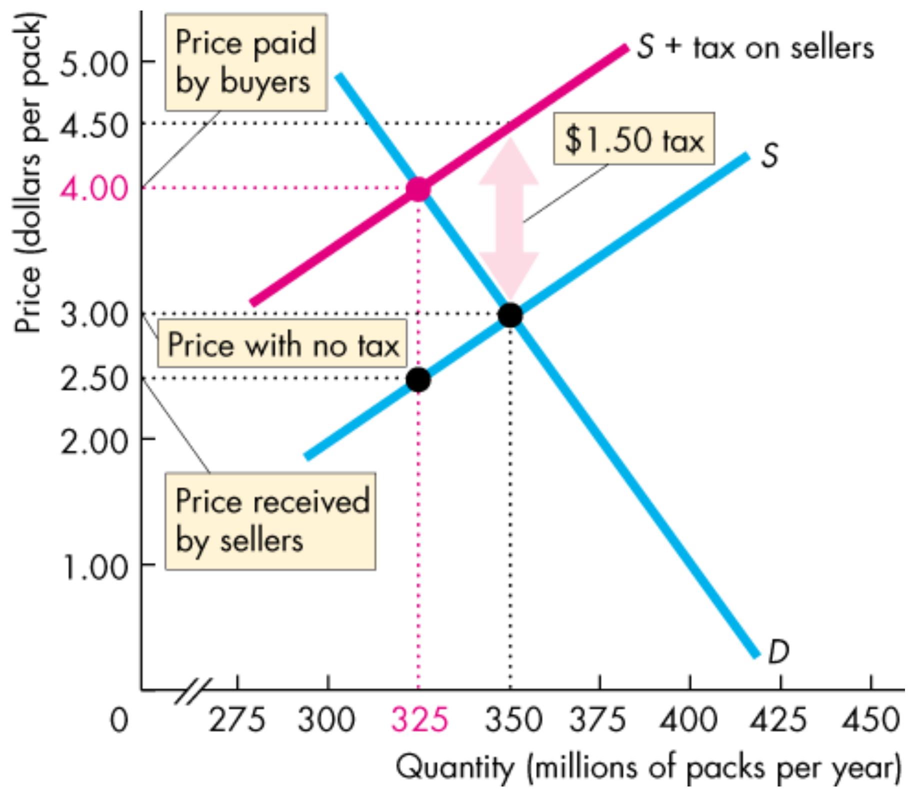
Taxes

The market price paid by buyers rises to $4.00.

sellers - $2.50 a pack.

tax of $1.50 a pack,

- Buyers $1.00
- Sellers 50¢



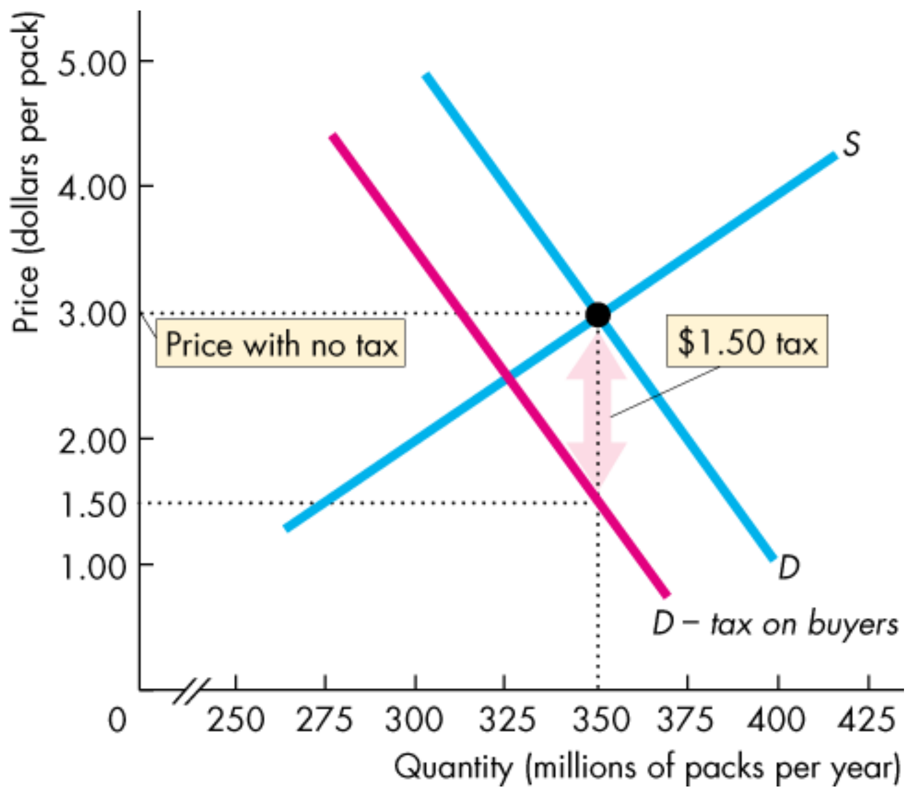
Taxes

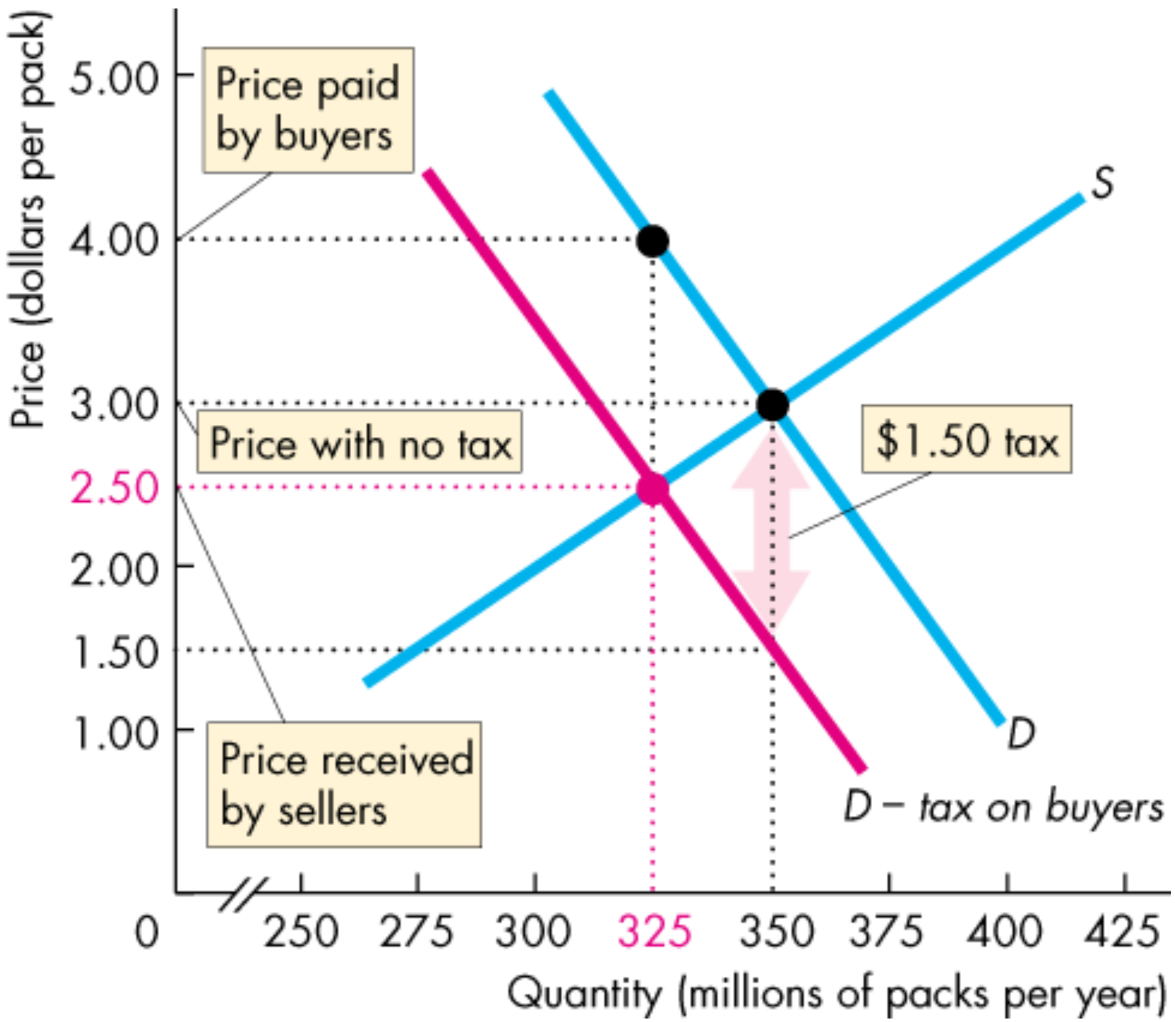
- A Tax on Buyers

  -$1.50 a pack

  Demand decreases

  - curve *D - tax on buyers* shows the new demand curve.



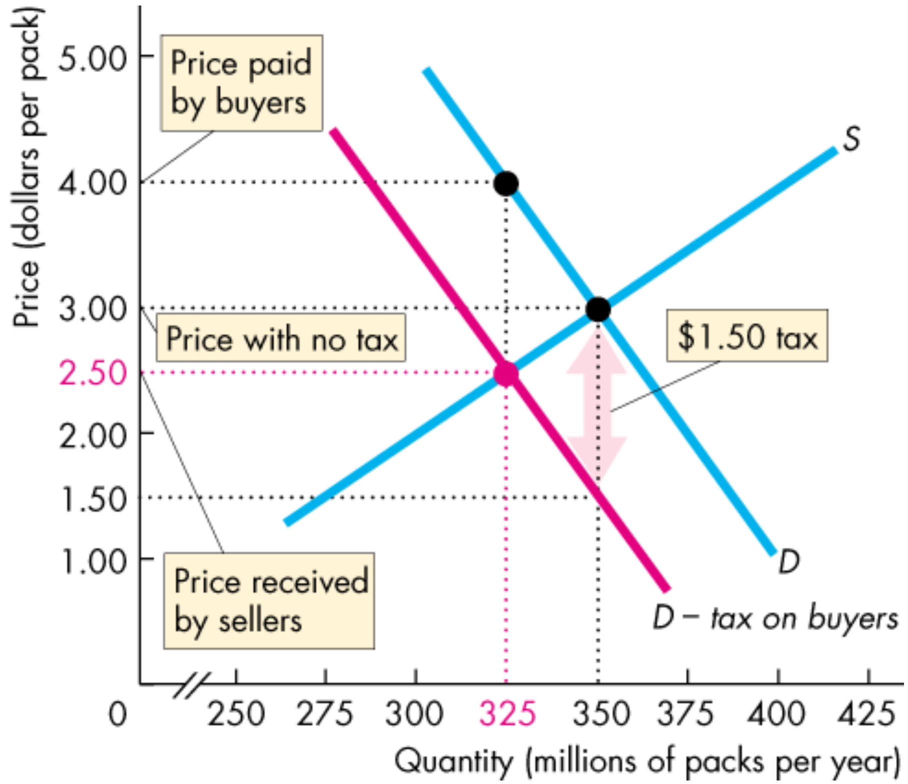

Price (dollars per pack)
5.00
4.00
3.00
2.50
2.00
1.50
1.00
0
Price paid by buyers
Price with no tax
Price received by sellers
$1.50 tax
S
D
D − tax on buyers
250
275
300
325
350
375
400
425
Quantity (millions of packs per year)

Taxes

The price paid by buyers rises to $4.00 a pack.

tax of $1.50 a pack

buyers - $1.00 a pack
sellers - 50¢ a pack.



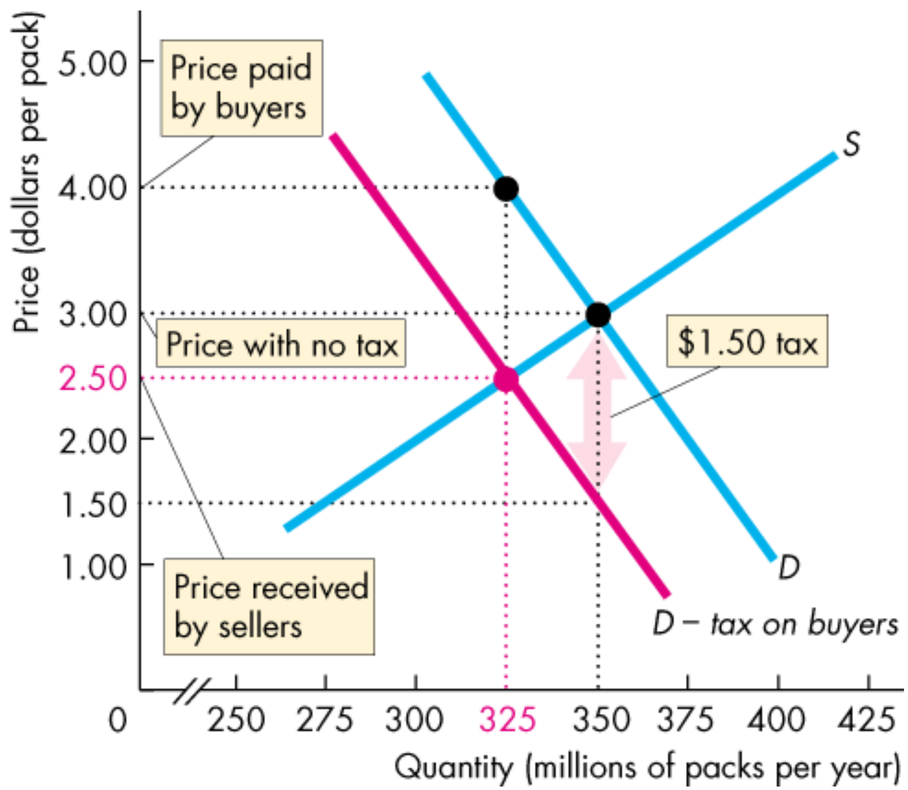
Taxes

So, exactly as before when sellers were taxed:

Buyers pay $1.00 of the tax.

Sellers pay the other 50¢ of the tax.

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



Taxes

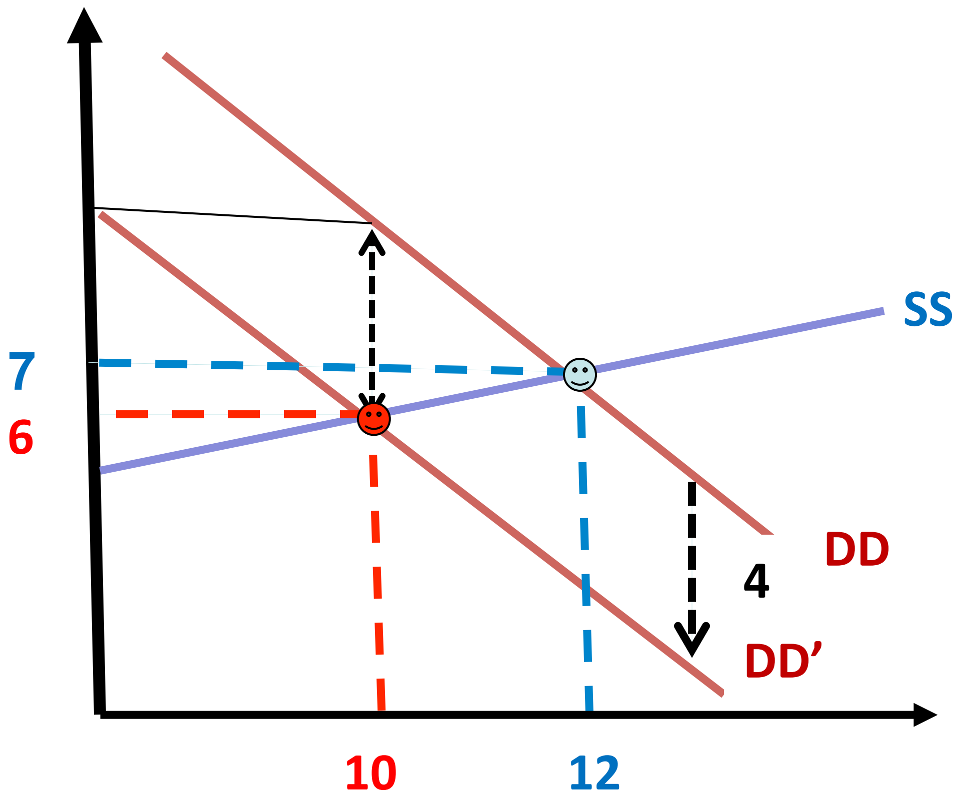
Source: http://heathoops.net/wp-content/uploads/2010/06/Taxes.jpg

Taxes

- Tax Division and Elasticity of Supply

  - Perfectly inelastic supply: Sellers pay the entire tax.
  - Perfectly elastic supply: Buyers pay the entire tax.

The more elastic the supply, the larger is the buyers' share of the tax.

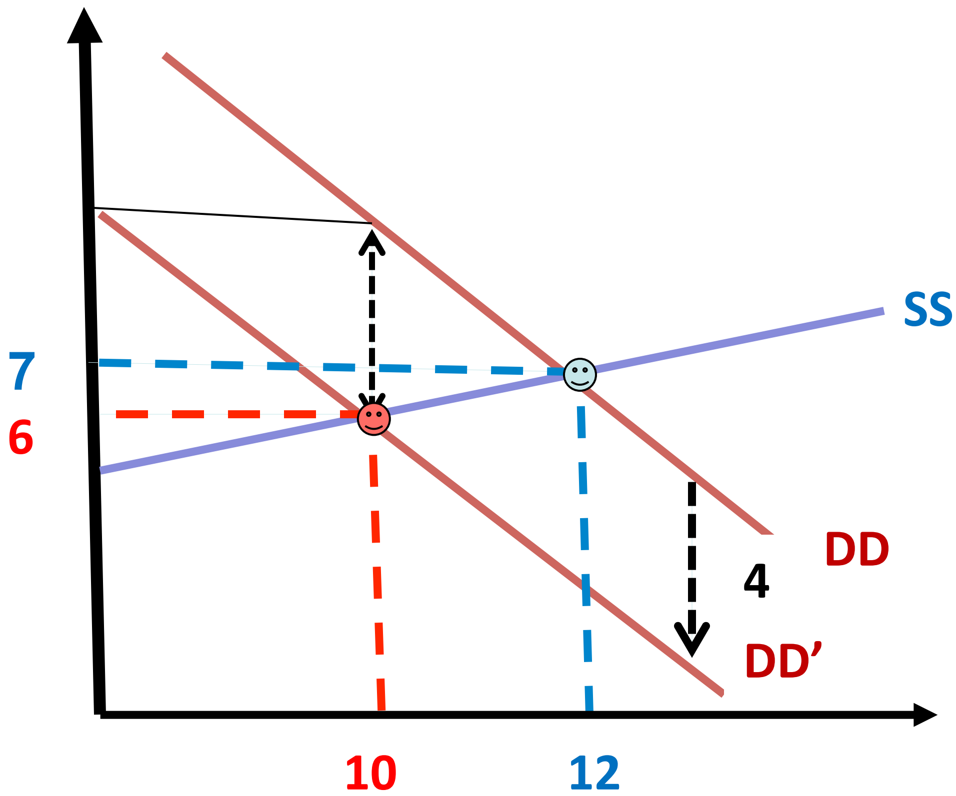


Elastic Supply Function

Govt. imposes Consumer tax

- $4 Sales tax

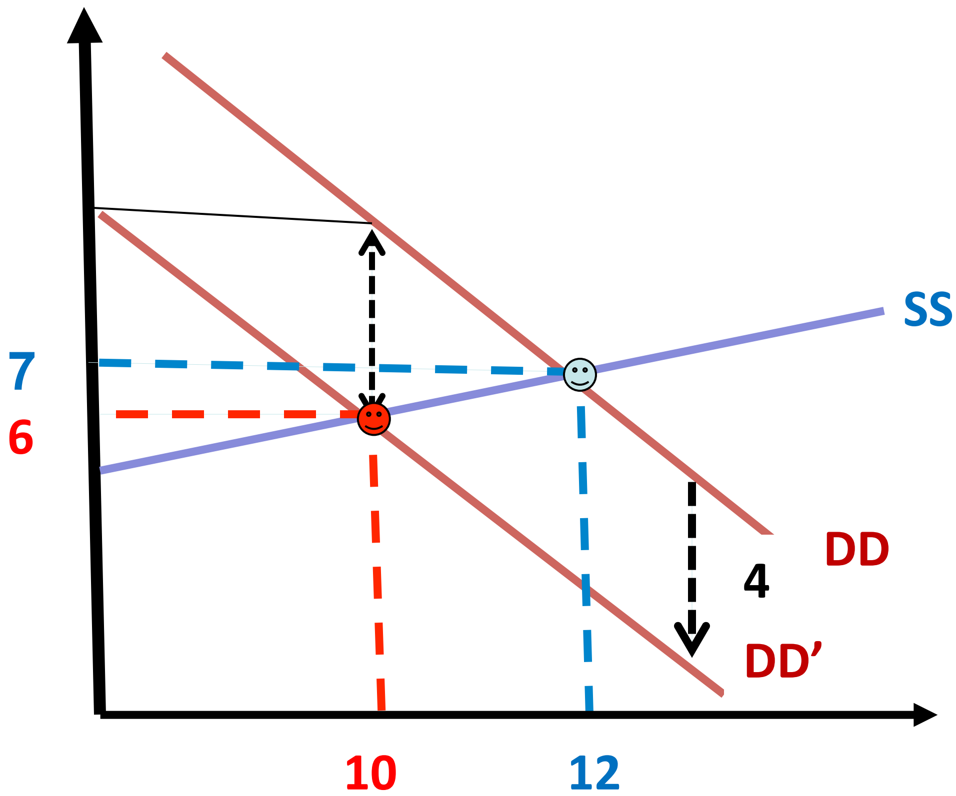
	Before Tax	After Tax	Tax burden
Consumers pay	$7		
Producers Get	$7		



Elastic Supply Function

Govt. imposes Consumer tax
- $4 Sales tax

	Before Tax	After Tax	Tax burden
Consumers pay	$7	6+4=$10	
Producers Get	$7	$6	

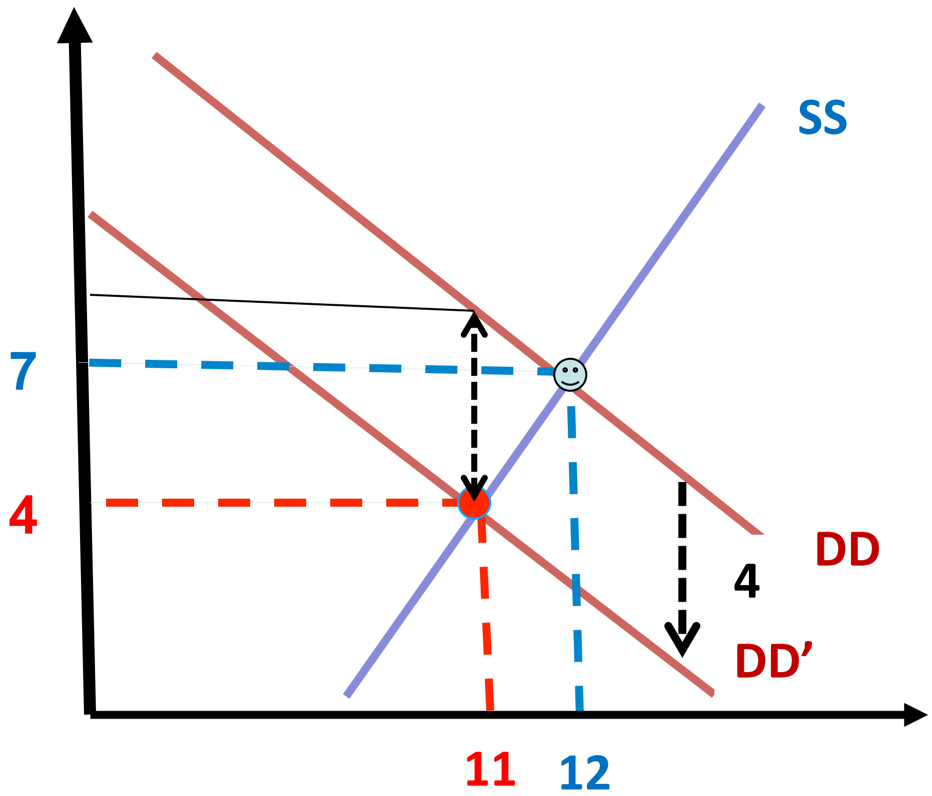


Elastic Supply Function

Govt. imposes Consumer tax

- $4 Sales tax

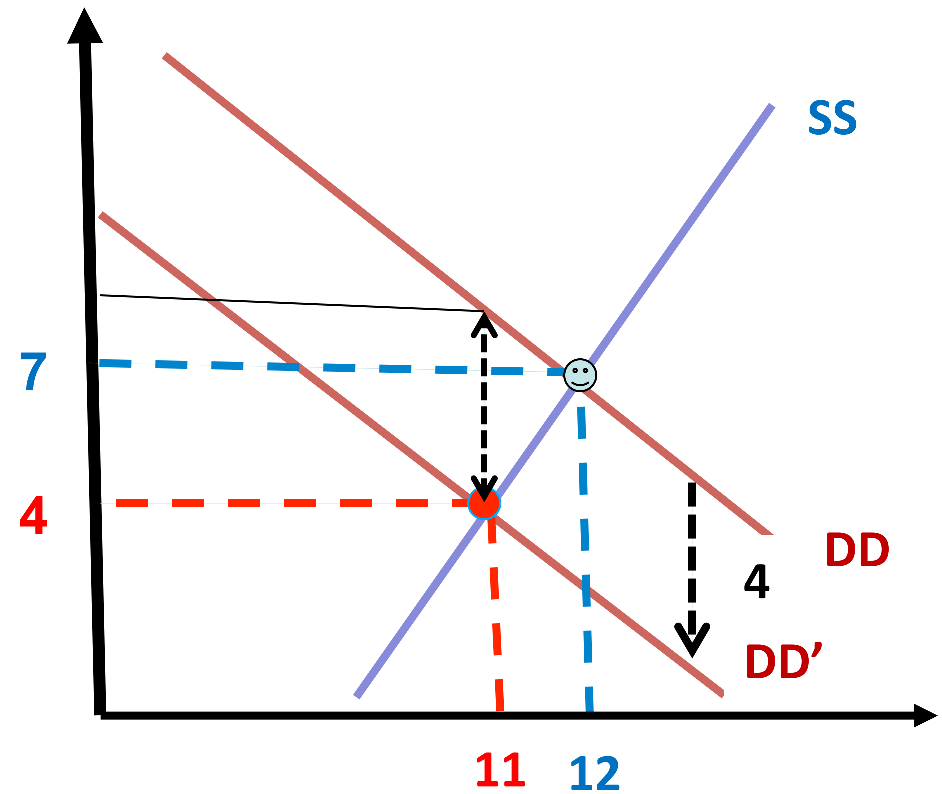
	Before Tax	After Tax	Tax burden
Consumers pay	$7	6+4=$10	$3
Producers Get	$7	$6	$1



Inelastic Supply Function

Govt. imposes Consumer tax
$4 Sales tax

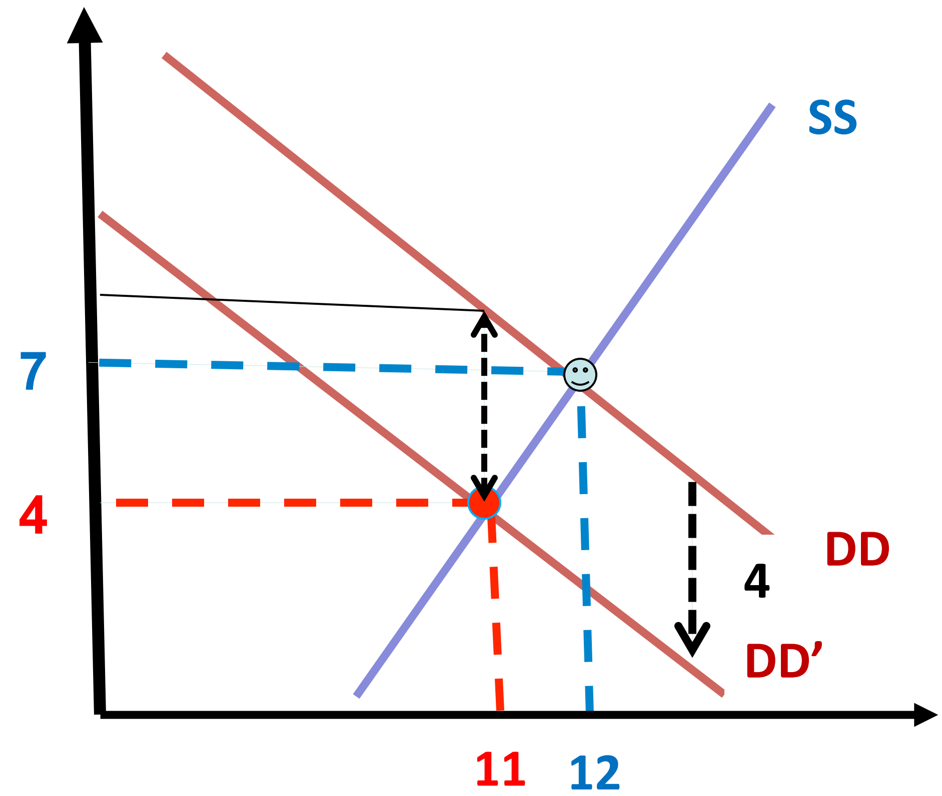
	Before Tax	After Tax	Tax burden
Consumers pay	$7		
Producers Get	$7		



Inelastic Supply Function

Govt. imposes Consumer tax
$4 Sales tax

	Before Tax	After Tax	Tax burden
Consumers pay	$7	4+4=$8	
Producers Get	$7	$4	



Inelastic Supply Function

Govt. imposes Consumer tax
$4 Sales tax

	Before Tax	After Tax	Tax burden
Consumers pay	$7	4+4=$8	**$1**
Producers Get	$7	$4	**$3**

Taxes

- Taxes in Practice

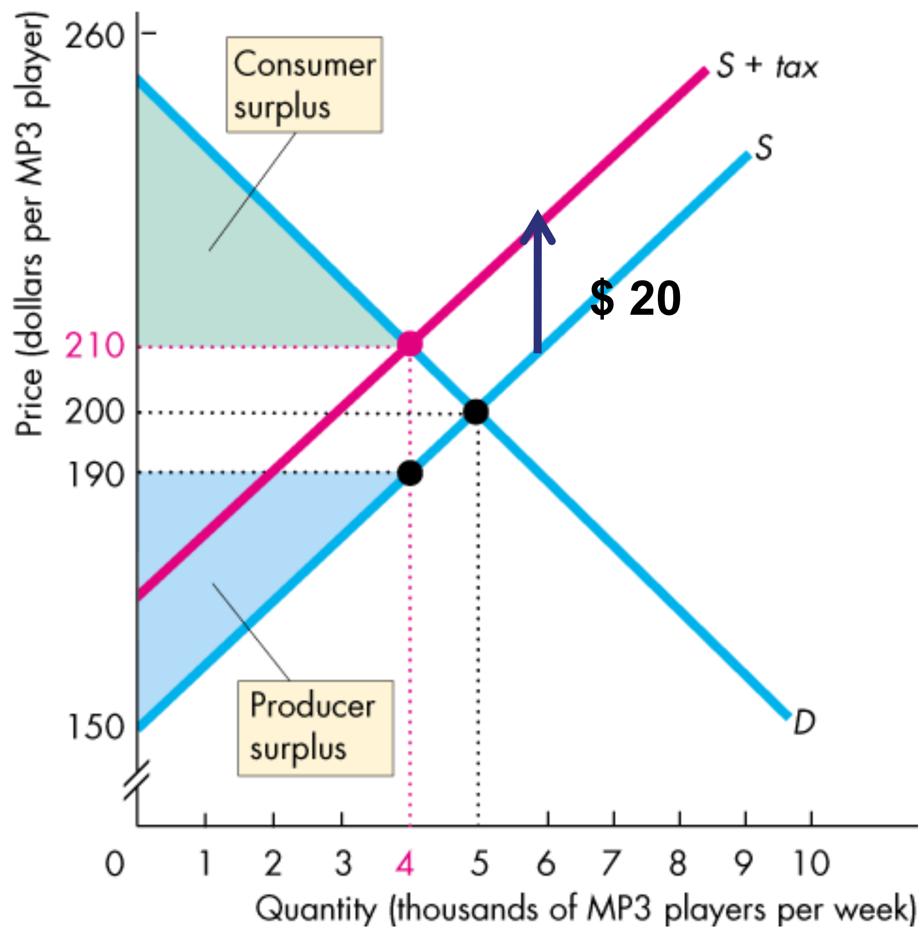
  Taxes usually are levied on goods and services with an inelastic demand or an inelastic supply.

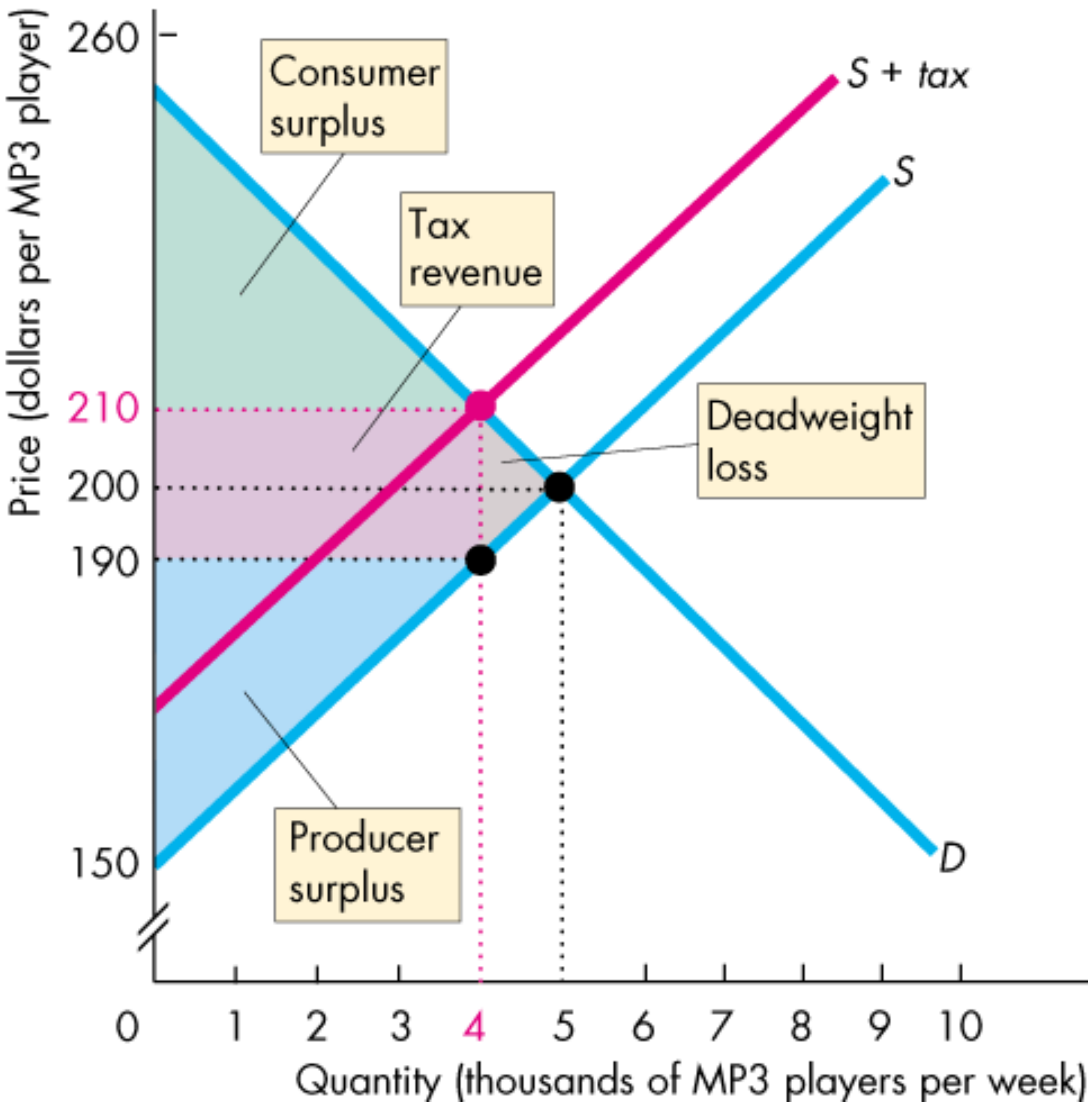
  Alcohol, tobacco, and gasoline have inelastic demand, so the buyers of these items pay most of the tax on them.

Taxes & inefficiency

With no tax, marginal social benefit equals marginal social cost and the market is efficient.

The tax decreases the quantity, raises the buyers' price, and lowers the sellers' price.



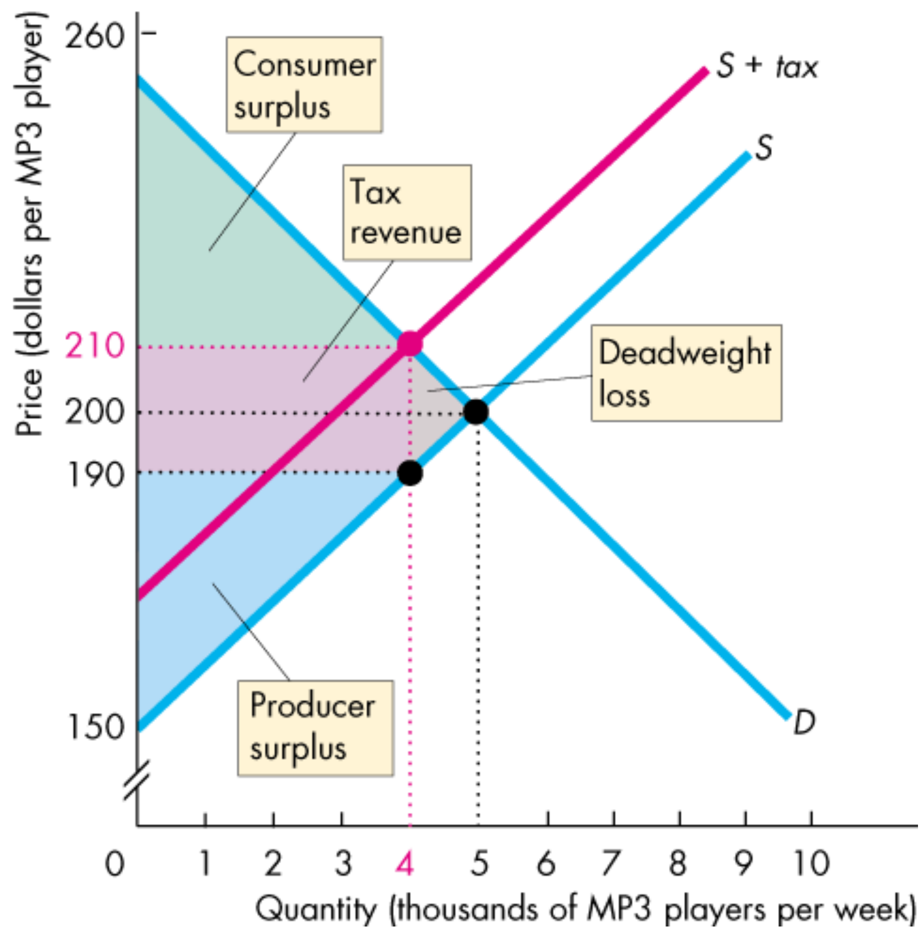


Price (dollars per MP3 player)
260
210
200
190
150
Consumer surplus
Tax revenue
Deadweight loss
Producer surplus
S + tax
S
D
0
1
2
3
4
5
6
7
8
9
10
Quantity (thousands of MP3 players per week)

Taxes

Marginal social benefit exceeds marginal social cost and the tax is inefficient.

decreased quantity - deadweight loss.



Production Subsidies and Quotas

Intervention in markets for farm products takes two main forms:

A **production quota** is an upper limit to the quantity of a good that may be produced during a specified period.

A **subsidy** is a payment made by the government to a producer.

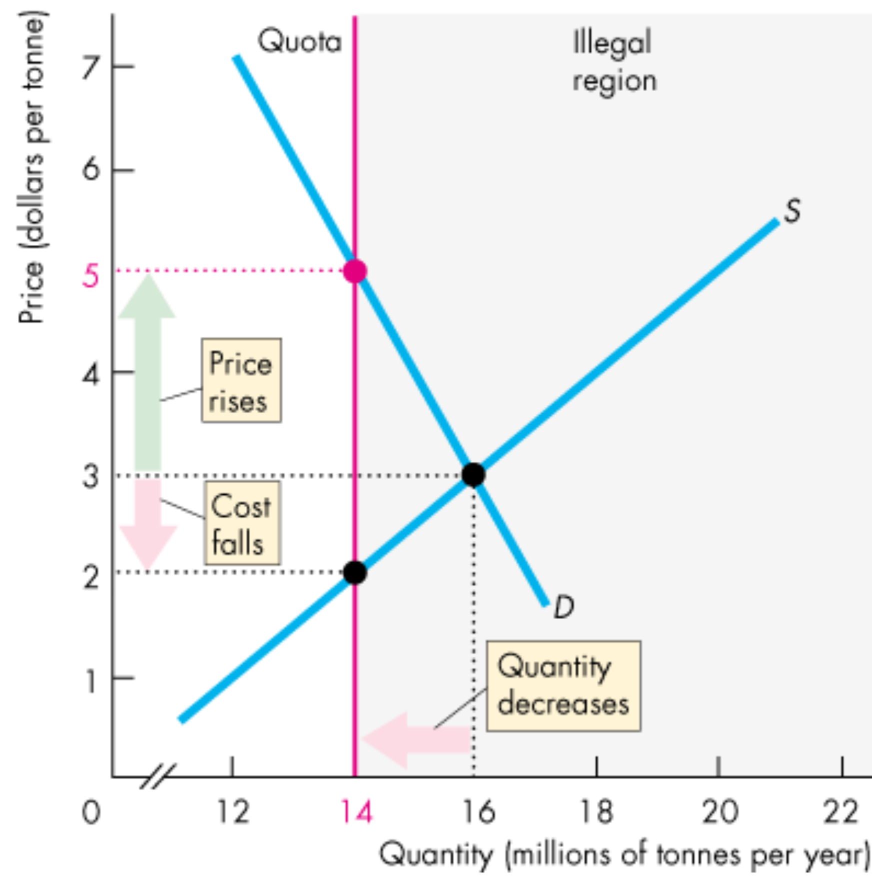
Production Subsidies and Quotas

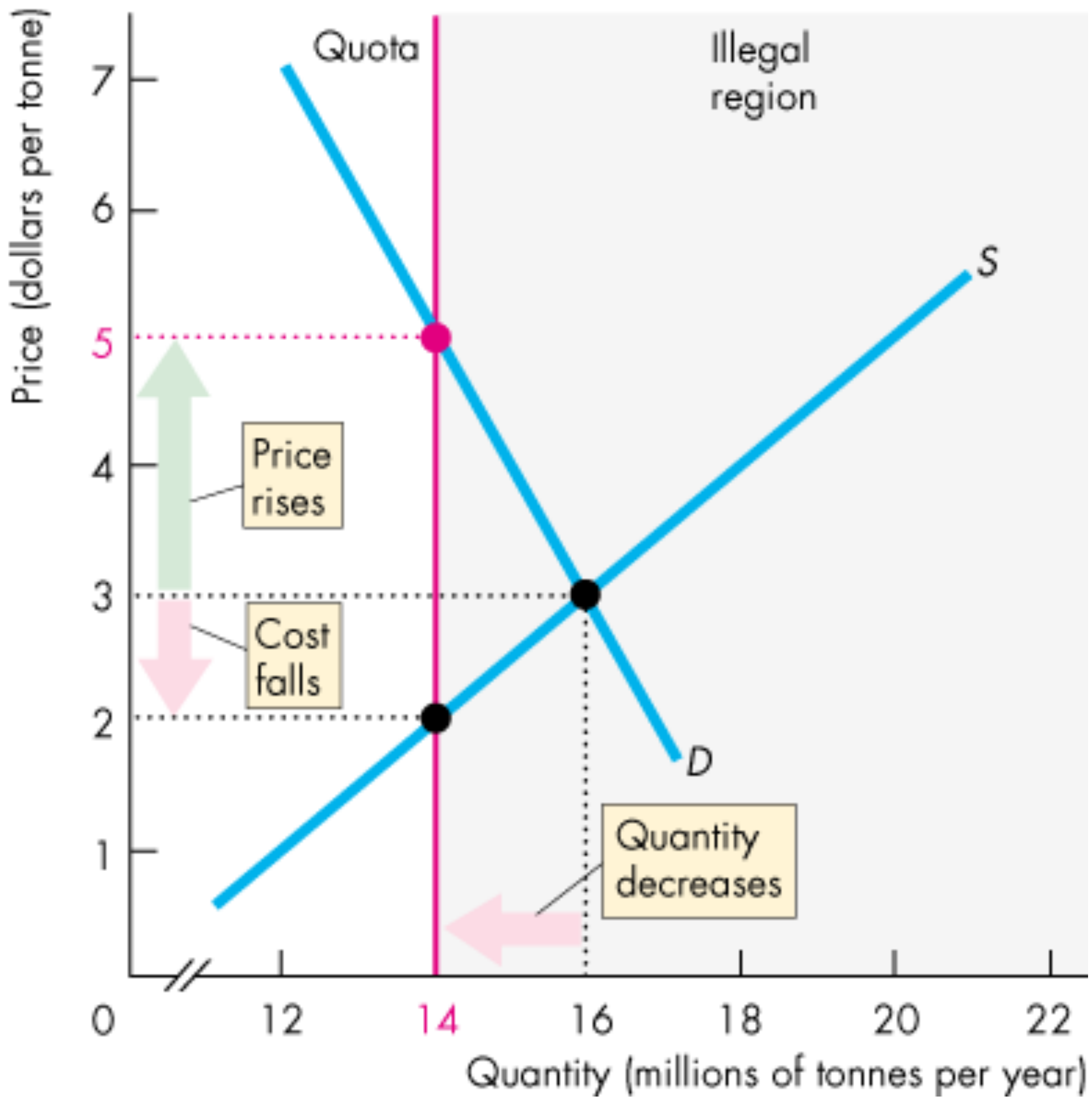
- Production Quotas

With no quota, the price is $3 a tonne and 16 million tonnes a year are produced.

With the production quota of 14 million tonnes a year, quantity decreases to 14 million tonnes a year.

The market price rises to $5 a tonne and marginal cost falls to $2 a tonne.



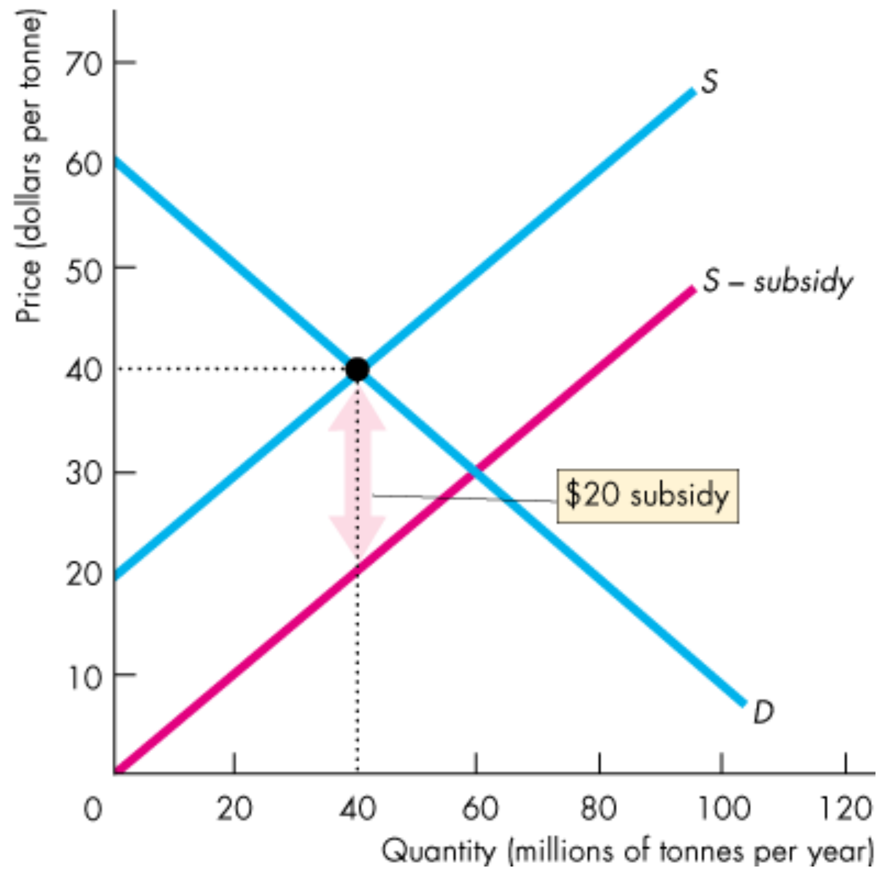

Price (dollars per tonne)
7
6
5
4
3
2
1
0
Quota
Illegal
region
S
D
Price
rises
Cost
falls
Quantity
decreases
12
14
16
18
20
22
Quantity (millions of tonnes per year)

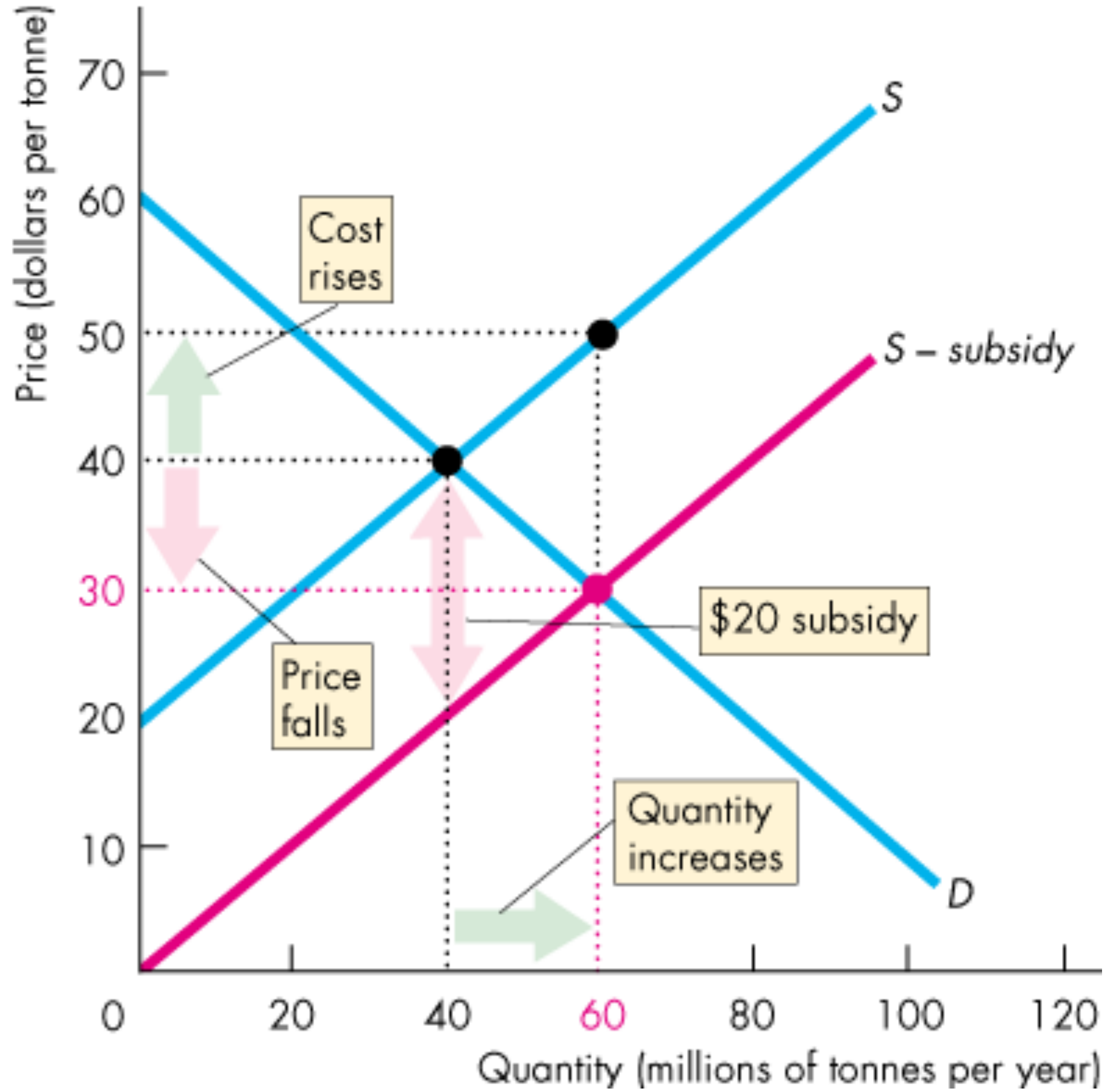
Production Subsidies and Quotas

- Subsidies

subsidy of $20 a tonne

SS: S – subsidy.





Price (dollars per tonne)
70
60
50
40
30
20
10
0
20
40
60
80
100
120
Quantity (millions of tonnes per year)
S
S – subsidy
D
Cost rises
Price falls
$20 subsidy
Quantity increases