Introduction to the Tax Theory

Outline

1. The Economics of Taxation
   - The role of taxation.
   - The main types of taxation.

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   - Marginal excess burden.
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   - Formal and effective incidence.
   - Tax capitalisation.

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    - Marginal excess burden.
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3. Tax Incidence
    - Formal and effective incidence.
    - Tax capitalisation.
4. Equity: Efficiency Trade offs in the design of the Tax System
    - The structure of income taxes.
    - Trade offs btwn equity and efficiency.
    - Income distribution and the structure of commodity taxes.

1. The Role of Taxation

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- Equity
  - To provide merit goods
  - To alleviate poverty.
- Stabilization (Macroeconomic Policy)
  - To manage risks individuals face (insurance).
  - Macroeconomic stabilization

Taxation has a role in each of these

1. Efficiency
   - Controls externalities.
   - Raises revenue for the provision of public goods.
2. Equity
   - Can redistribute income
   - Can generate revenues that provide other forms of poverty alleviation.
3. Stabilization
   - A key instrument in controlling aggregate demand
   - And the balance of trade

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   - The correction of externalities
3. Compliance and Administration Costs
   - Compliance Costs = time, money inconvenience
   - Administration costs

CANONS OF TAXATION

- In the 1770's, Adam Smith in his "Wealth of Nations" book outlined the canons of taxation which are just as applicable today. He recognized that the levy of taxation should comply with certain basic criteria/norms and propounded the following 4 canons/principles of taxation:

  1. CONVENIENCE – a convenience tax is one which causes the payer and the collector to do little that they would not do in the absence of tax. **In other words, taxpayers should be levied at the time or in the manner in which it is most convenient for the taxpayer to pay it.** Eg., for a salaried employee it is convenient for the tax to be collected at the end of the month when the salary is paid

CANONS OF TAXATION

- **2. CERTAINTY –** a tax has certainty if the taxpayer can predict their tax liability with reasonable accuracy. It also means that **the tax should not be an arbitrary one. The taxpayer should be aware of**:
  - (a) The time to pay
  - (b) The manner of payment
  - (c) The amount to be paid
- The information should be available to both the taxpayers as well as to every other person – especially potential investors.

CANONS OF TAXATION

- **3. ECONOMY –** a tax is economical if the costs of collection are small relative to the amount of tax collected. The tax should be easy and cheap to collect and should fall directly on the ultimate payer.
- If great resources must be diverted to the collection of taxes, they are simply wasted.
- **Economical taxes are those that have low administrative costs and are therefore, efficient.**

CANONS OF TAXATION

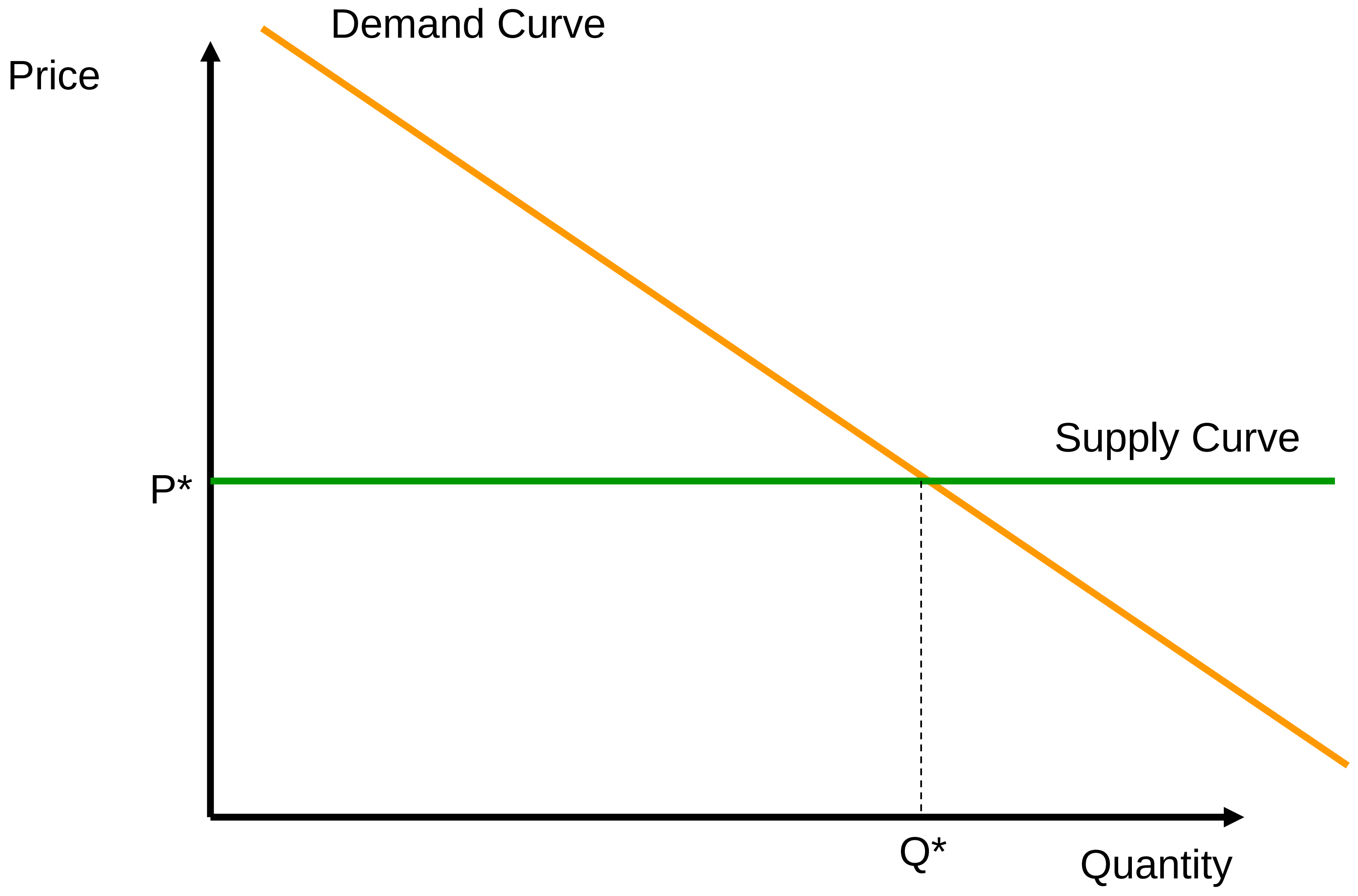
- **4. EQUITY –** The idea behind the question of equity as far as taxation is concerned is that every citizen in country ought to contribute towards the support of the government, as nearly as possible, in proportion to their abilities.
- In other words, the citizen ought to contribute to the support of the government in proportion to the revenue which they enjoy under the protection of the government.
- This incorporates the issue of fairness, and with the income tax, fairness is generally interpreted to mean that taxpayers should be taxed in proportion to their “ability to pay”.
- How progressive the tax structure should be, is a matter of debate.

2. The Efficiency Costs of Taxation

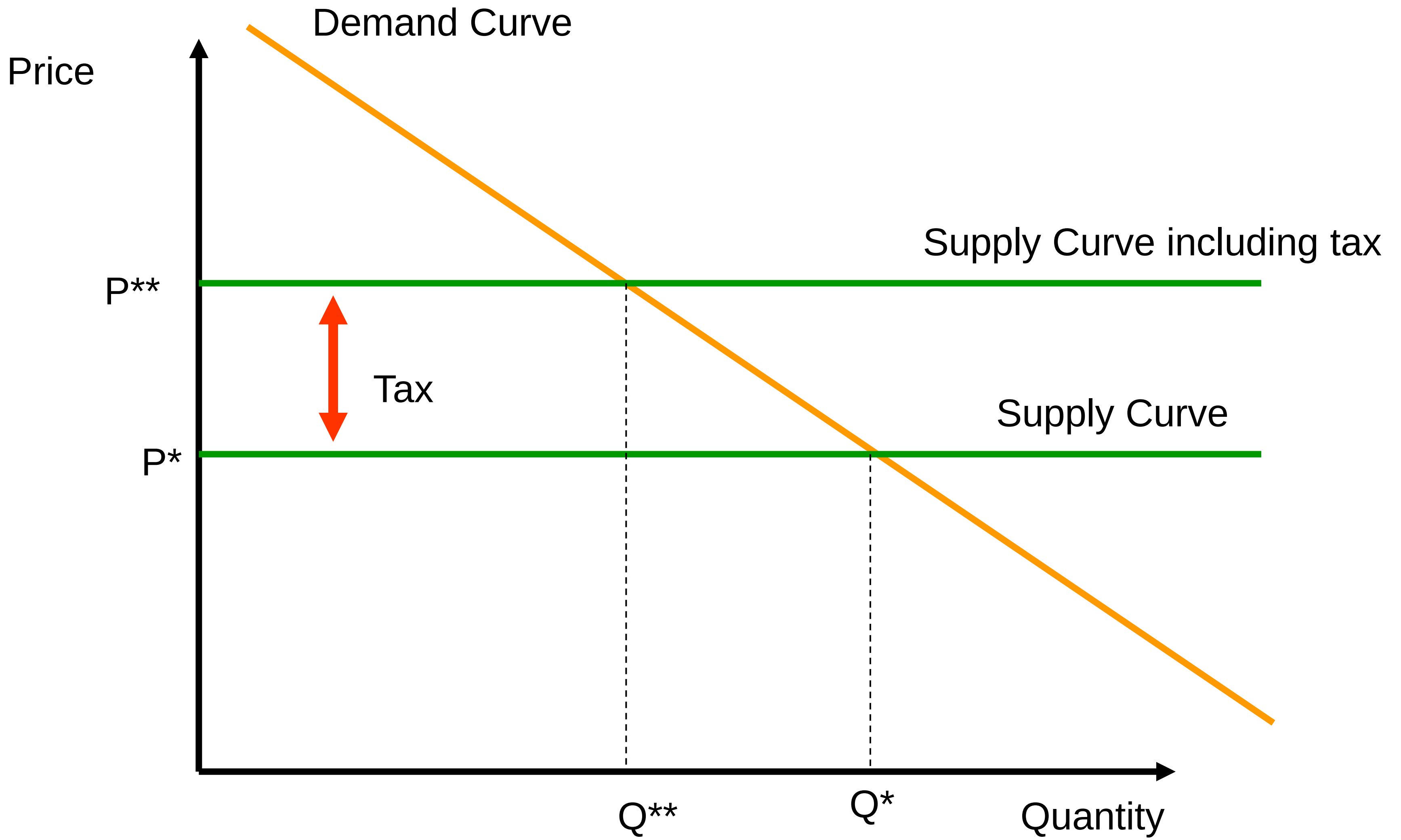
Let us consider a Perfectly Competitive Market.

- In the Long Run we might treat supply as being a horizontal straight line.

Equilibrium Before a Tax – P*Q*



Now Introduce a Tax (lump sum)

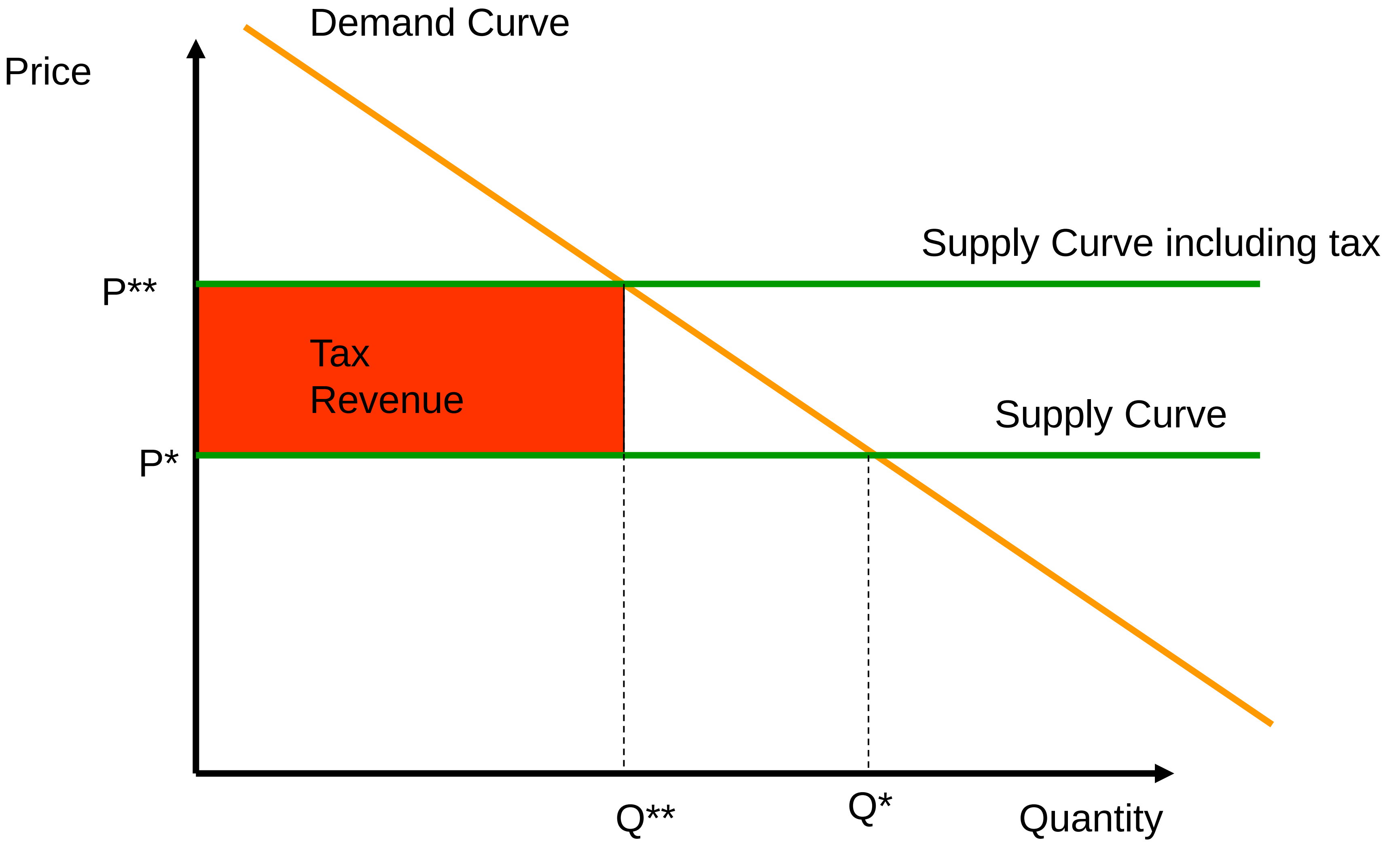


Some Obvious Consequences

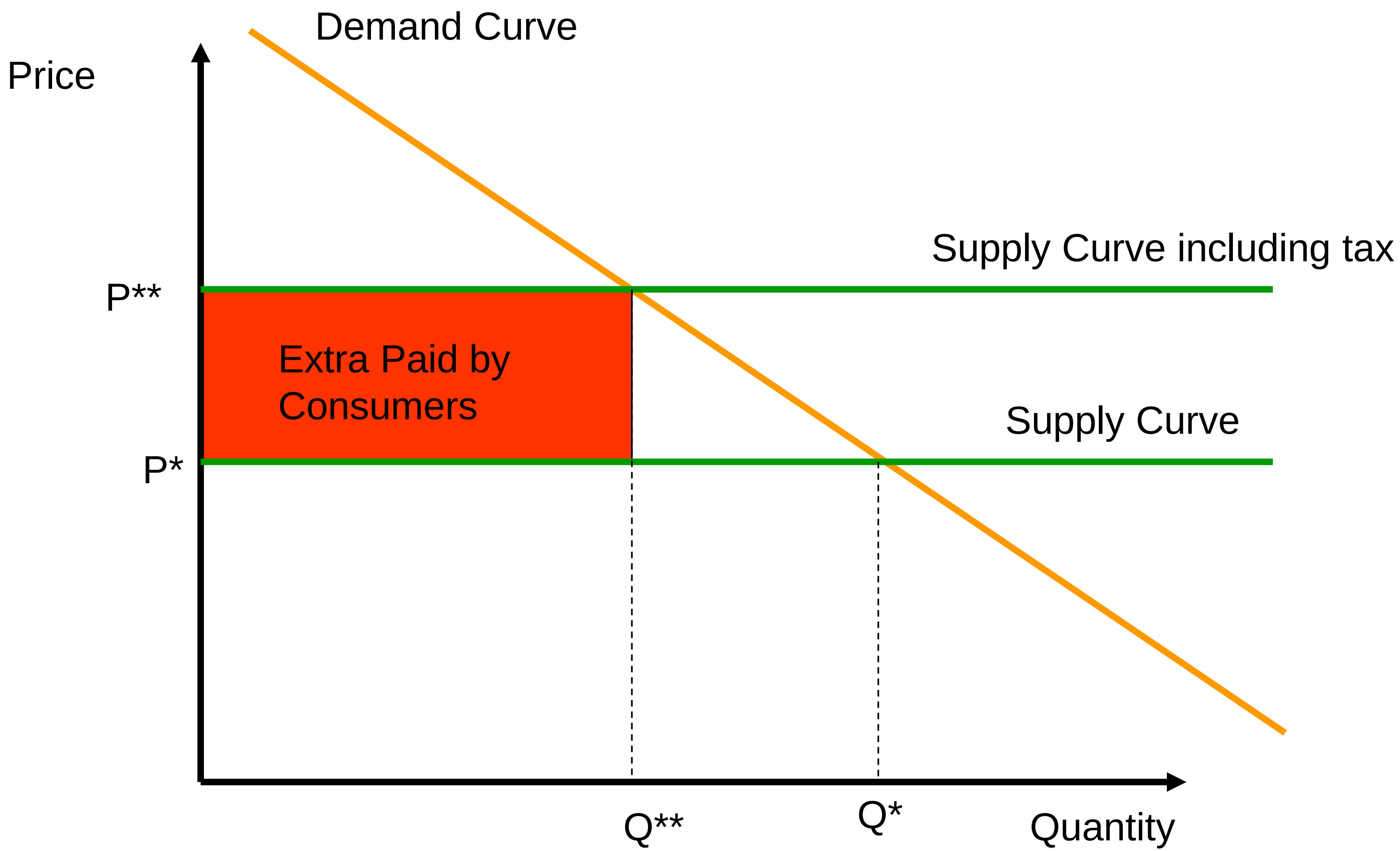
1. Consumers are paying more for each unit. (bad)
2. Government is earning taxes. (might be good)
3. Consumers are buying fewer units. (bad)
4. Firms are making fewer units. (Neutral here as perfect competition implies they make zero profit)

How do these costs and benefits add up?

Tax Revenue = Tax x Number of Units



Tax Revenue = Exactly the losses of consumers who still buy



This gain and loss exactly cancel

The tax revenue

=

The extra paid by the consumers who still buy the taxed commodity.

This is just a redistribution of income not an inefficiency.

Summary:

One effect of taxes is to transfer resources to the government.

This reduces taxpayers' disposable incomes.

The Substitution Effect

The price of this commodity has risen relative to other commodities.

- This affects the incentives of the private sector.
- It distorts markets.

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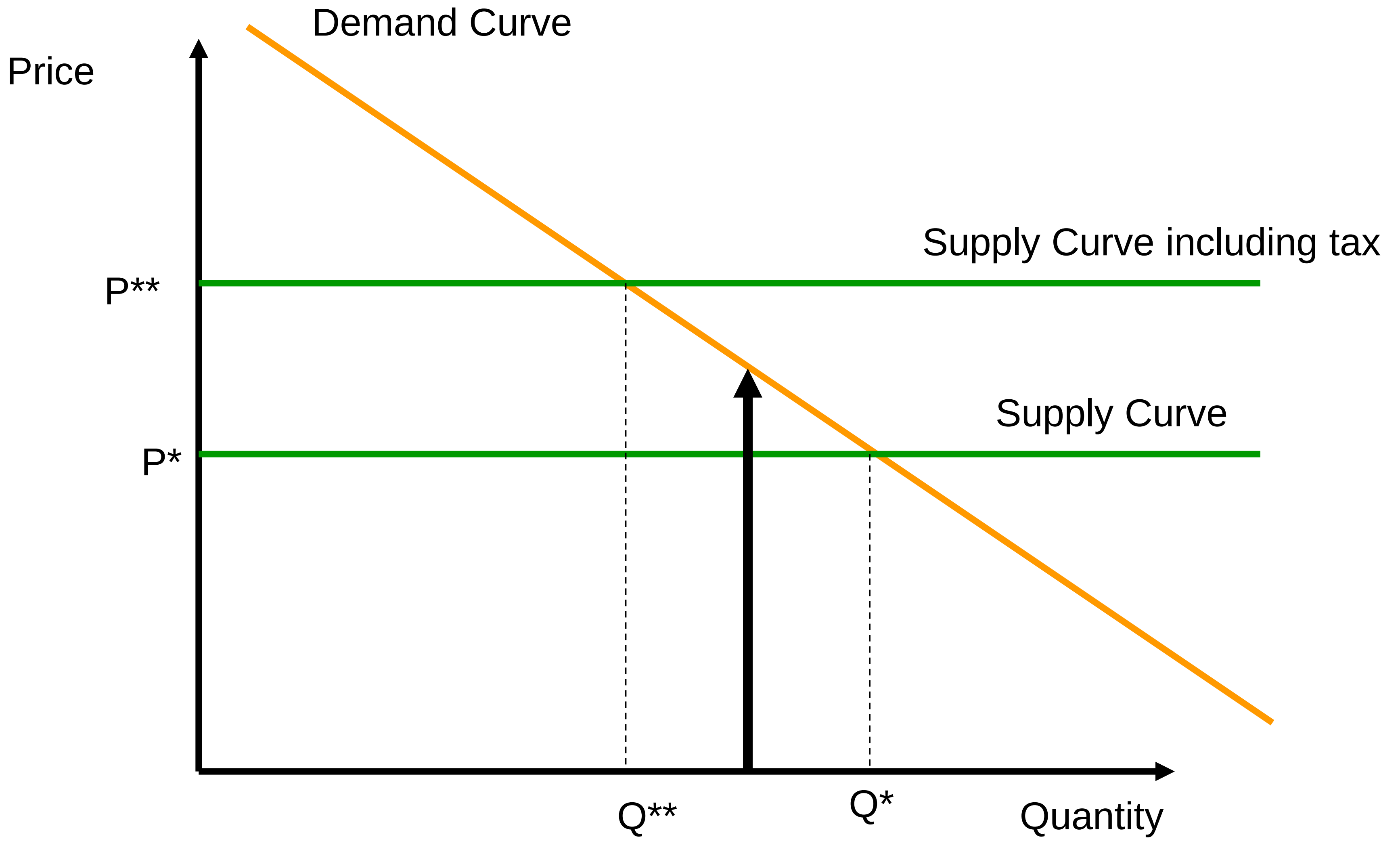
It generates "rents"

A tax on tobacco makes growing it less attractive, therefore land prices fall.

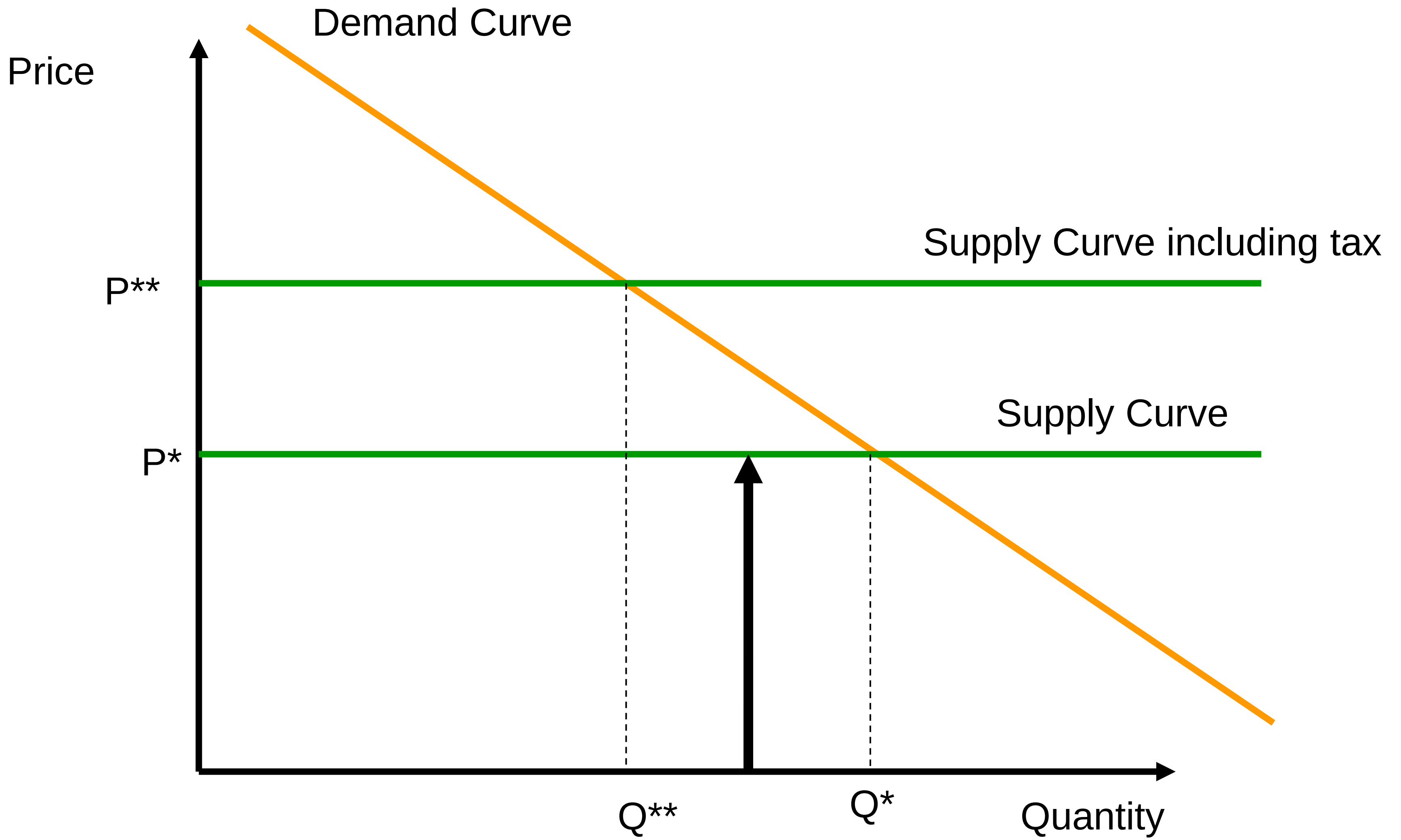
Tobacco machinery manufacturers lose as do tobacco workers.

(Any input into a taxed commodity suffers.)

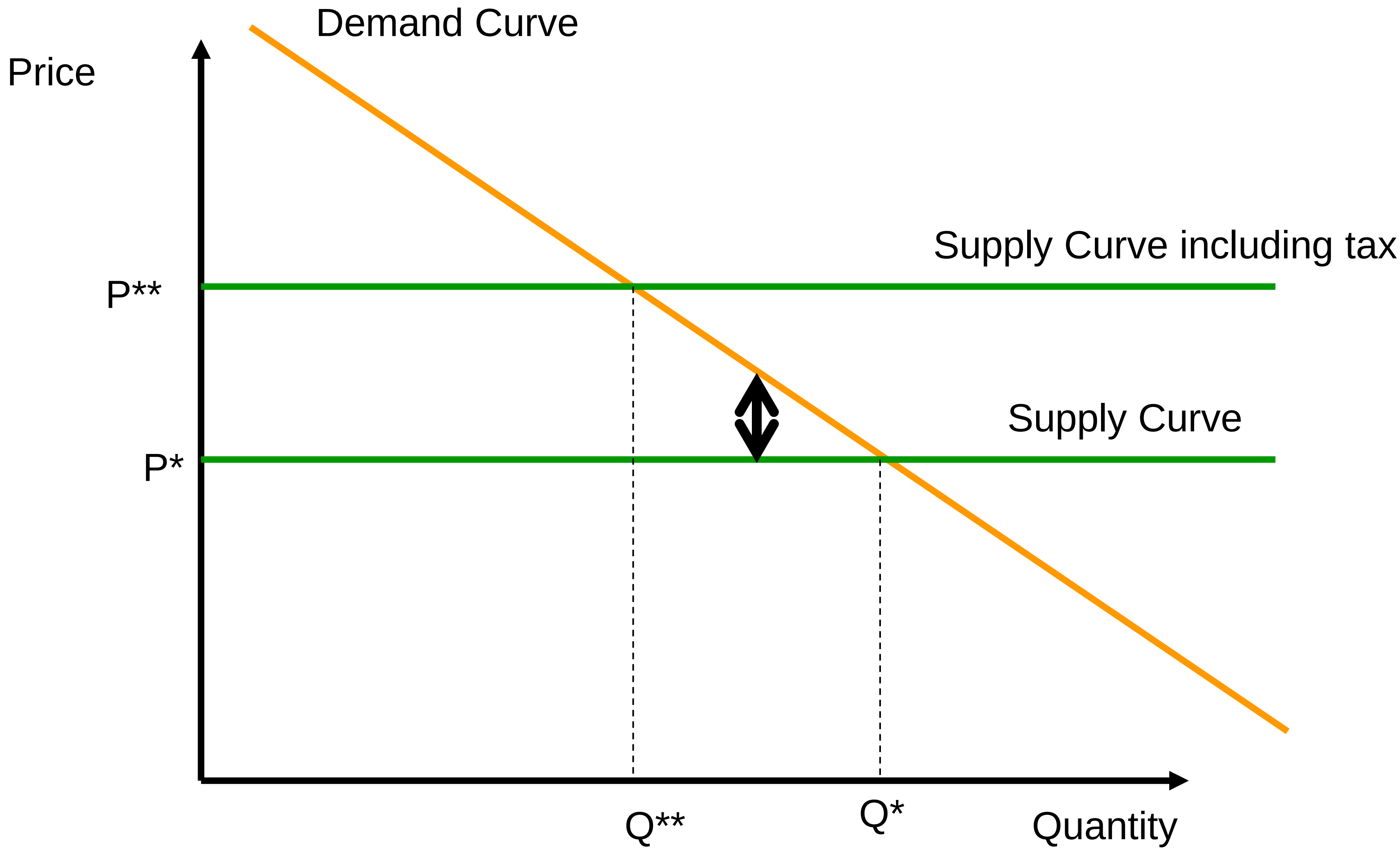
This person was prepared to pay this much for the good.



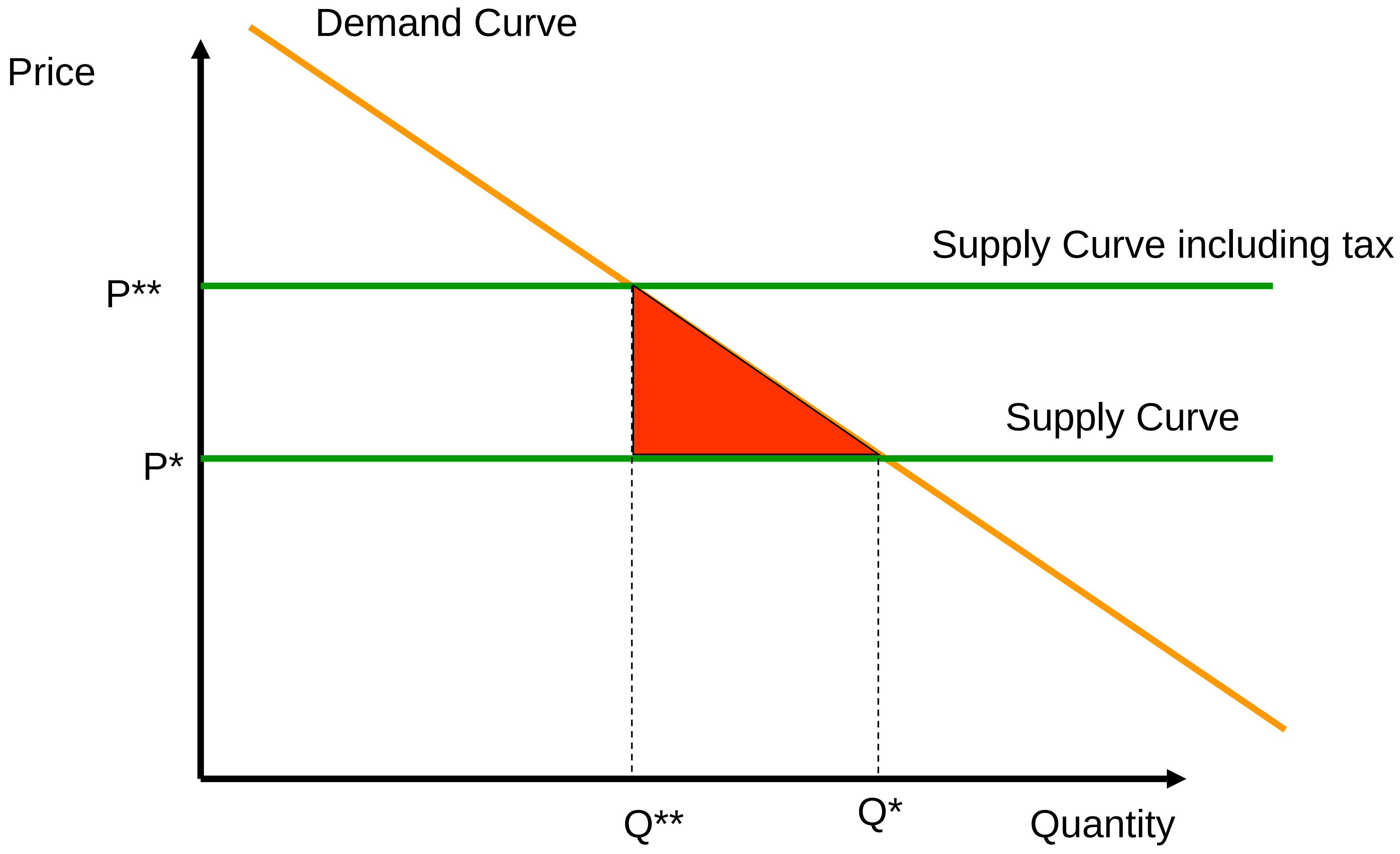
Actually had to pay less.



But after the tax did not buy the good so this value was lost



Adding all these values then gives society's total loss.



The Excess Burden

Marginal Excess Burden → The excess burden of an extra £ raised in taxes.

(This is generally higher than the average burden, as should tax least distorting commodities first.)

- A good tax system should impose taxes with least excess burden first.
- Optimally, the marginal excess burden of each tax instrument should be the same.

3. Tax Incidence

In other words – who bears the burden of taxes?

An important distinction:

Formal Incidence: Who is legally obliged to pay the tax.

Effective Incidence: Who actually bears the burden of the tax?

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Effective Incidence: Who actually bears the burden of the tax?

These differ because prices can change as a result of a tax.

Taxes On Business

All taxes formally incident on business will have their final incidence on customers, shareholders and employees:

VAT, ED (sales taxes) – Are Passed on and affect prices and customers also output and employees.

Profits Tax – Affect shareholders and investment decisions (suppliers of capital).

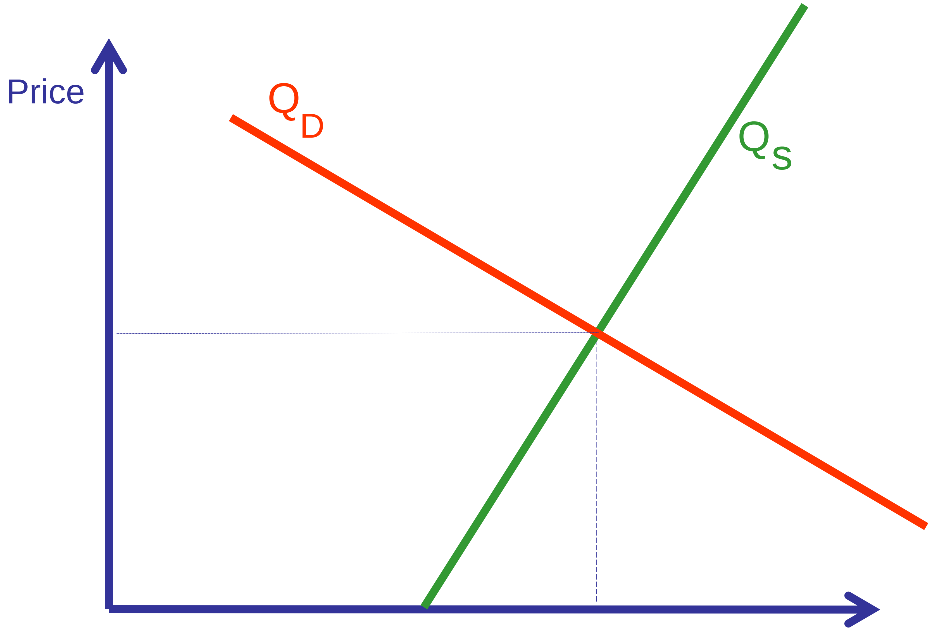
Asset Taxes – Affect investment decisions.

Effective Incidence is all that Matters to an Economist

Who is legally obliged to pay a tax – is largely irrelevant if the taxed individuals can take actions to mitigate the effects the tax has.

The Effect of a Sales Tax on a Market

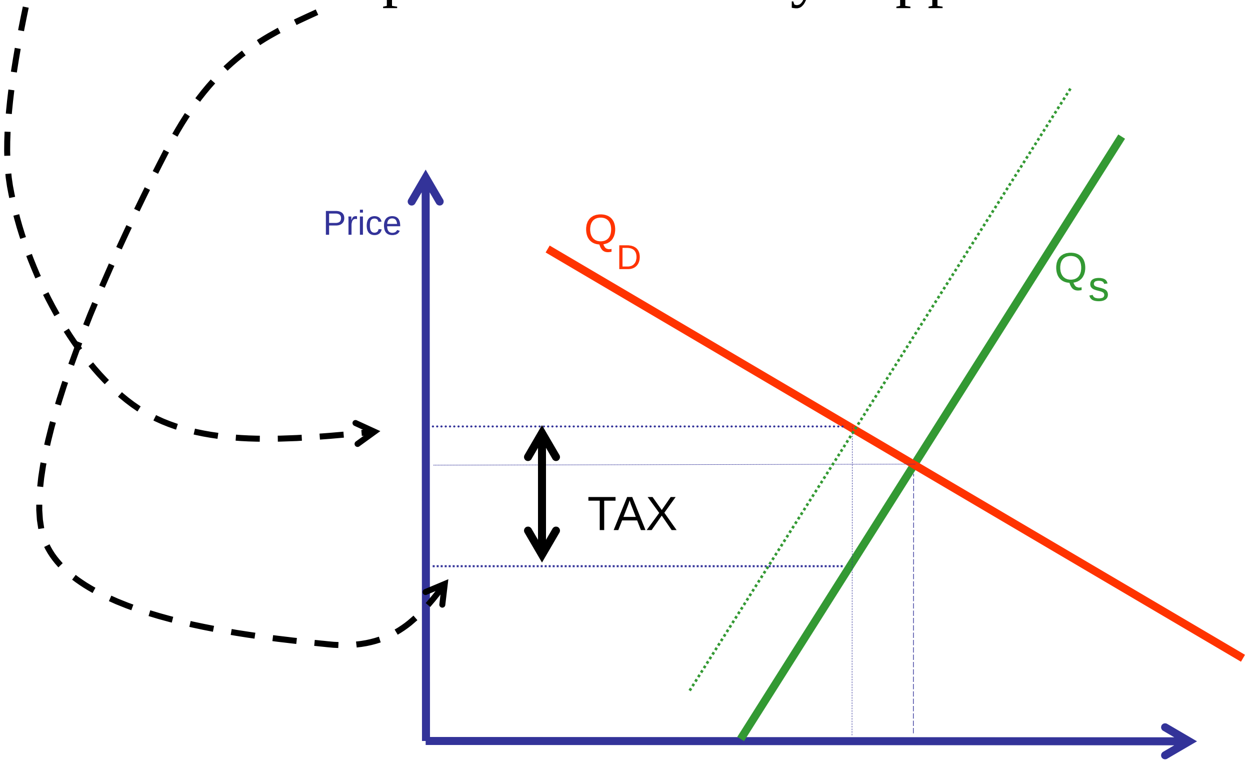
A market before a tax is imposed at equilibrium



The Effect of a Sales Tax on a Market

The tax raises the price paid by consumers.

It lowers the price received by suppliers.



Why Does this Happen?

Suppose the firms tried to raise their prices and pass on all the tax increase to the consumers, then:

(1) The higher price for consumers would mean they would choose to buy less.

(2) However, the firms would still want to supply the same amount.

(3) The market has Supply > Demand and prices will fall.

(4) Thus prices for firms will fall until

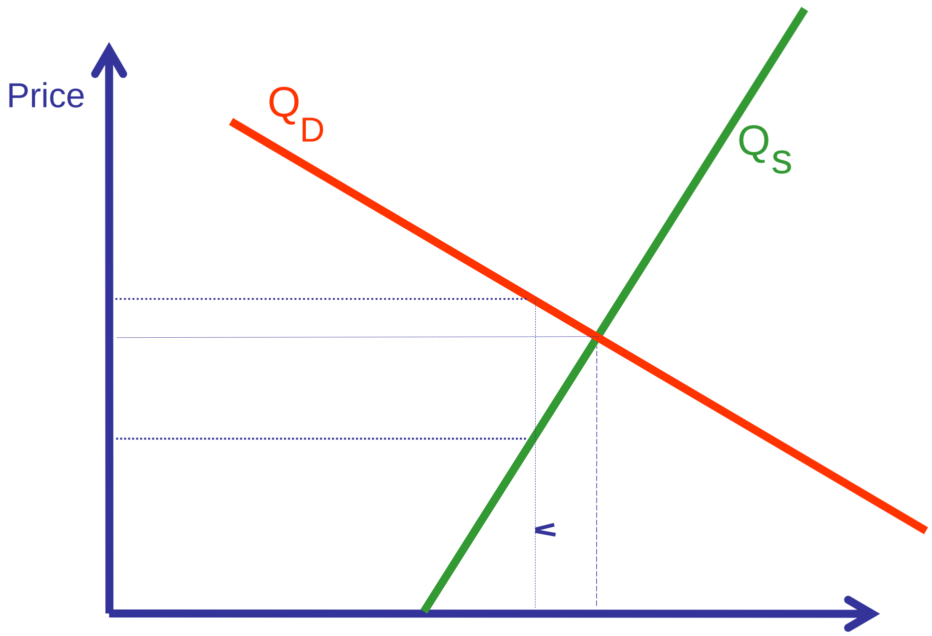
Supply(Price less tax) = Demand (Price including tax)

The Effect of a Sales Tax on a Market

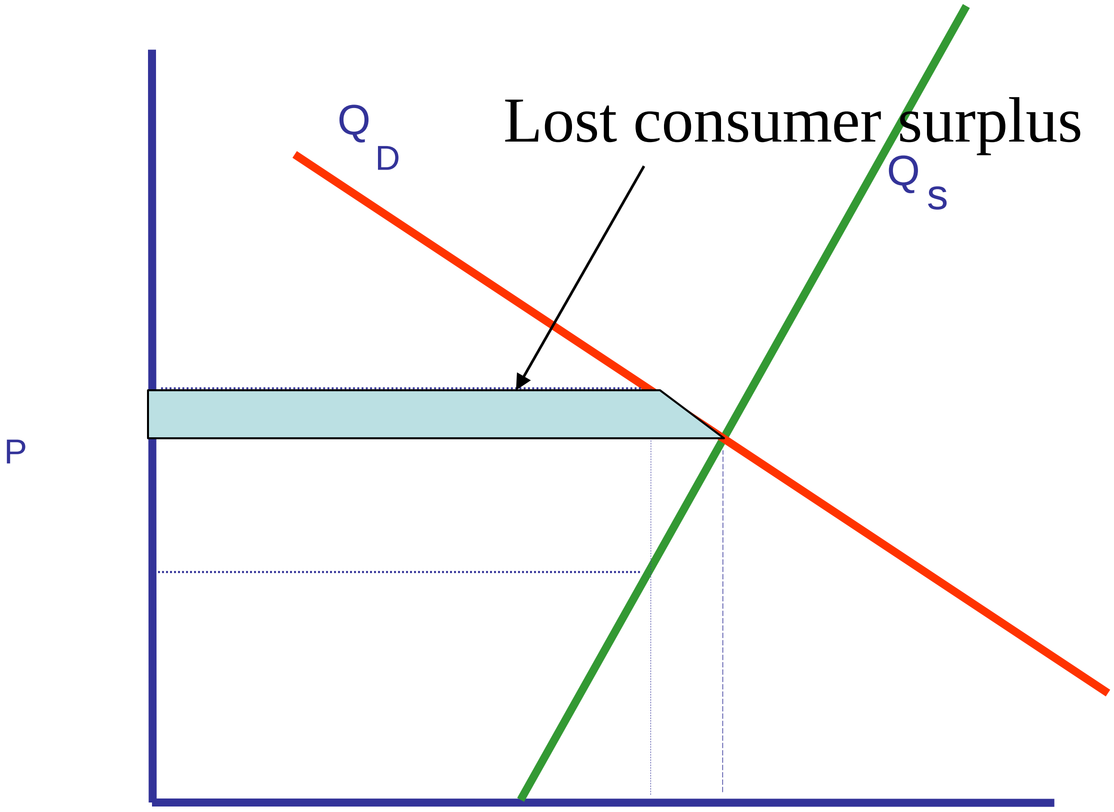
Notice also – less goods are produced.

Some consumers don't buy at the higher price.

Some sellers don't produce at the lower price.



This reduces consumer surplus and producer surplus



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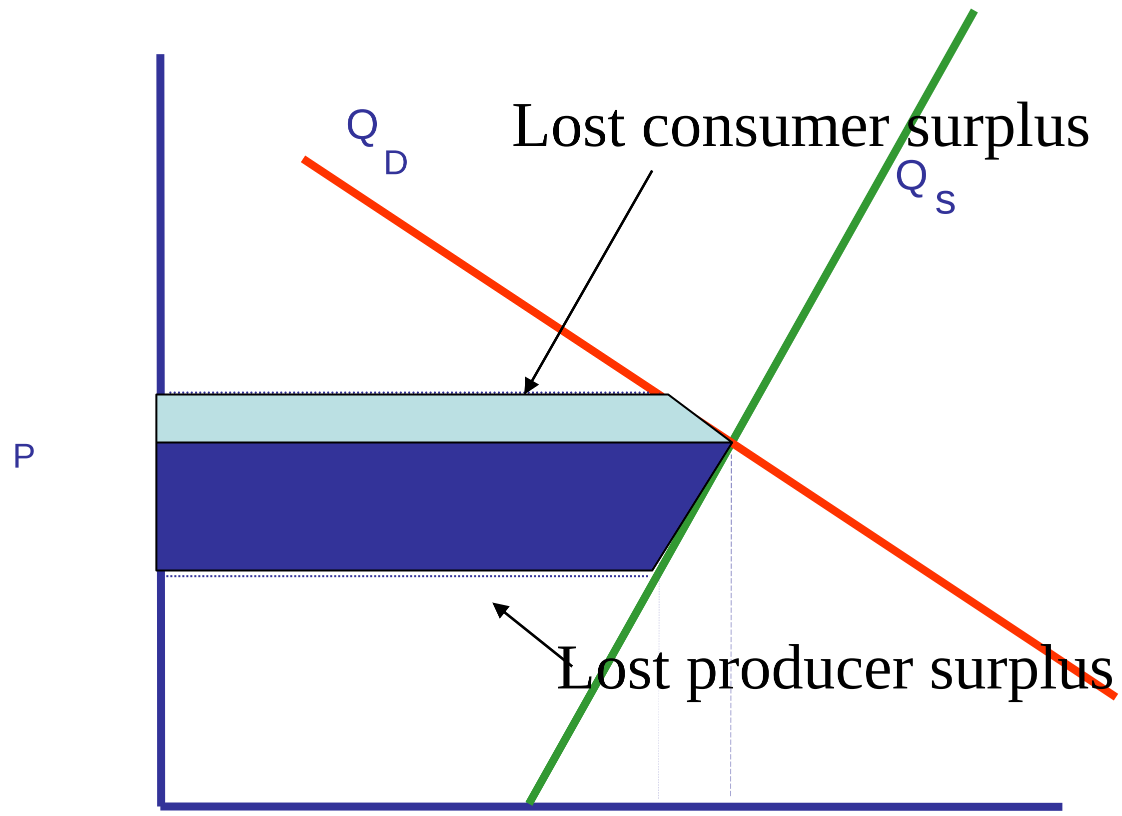
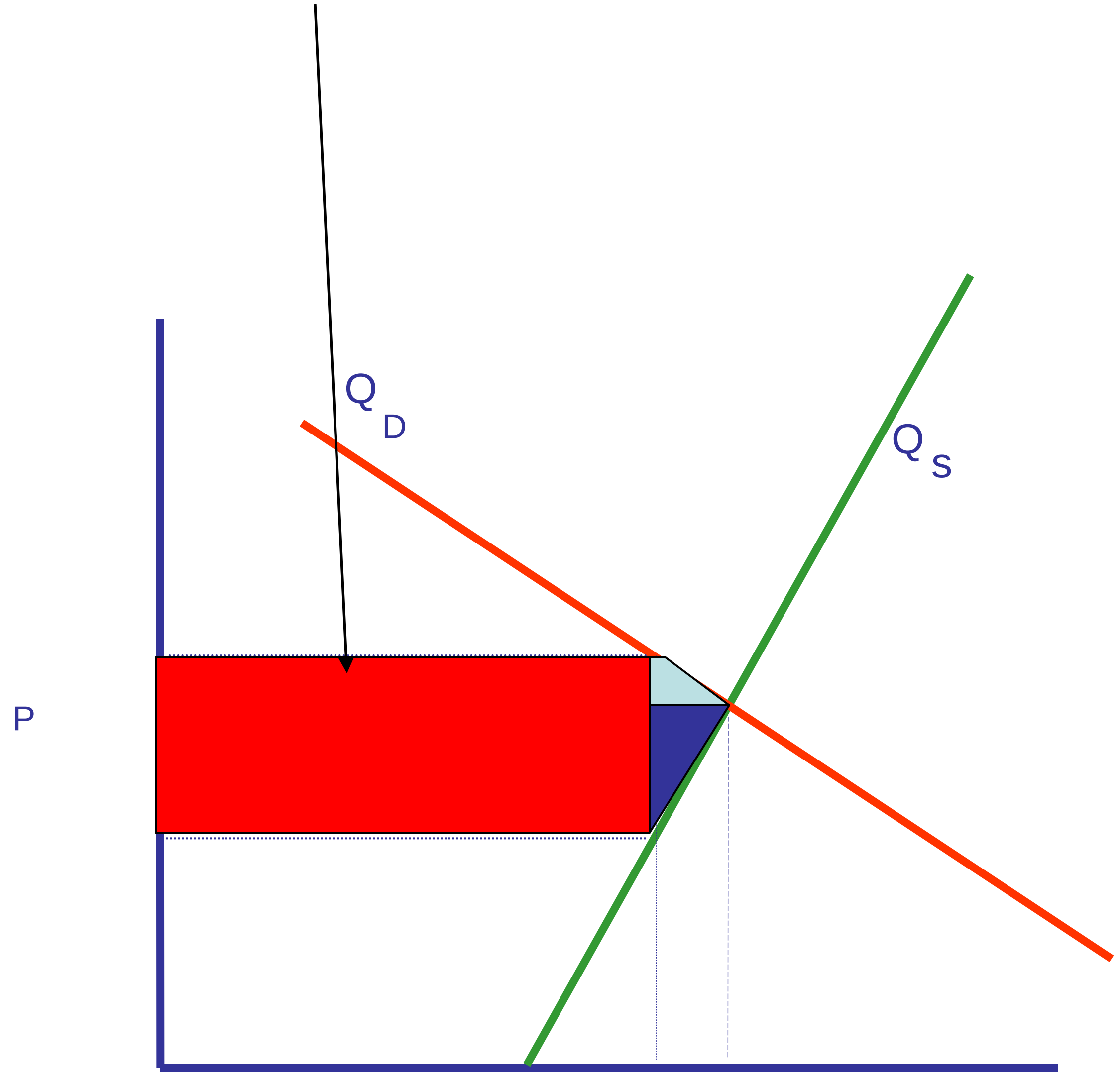
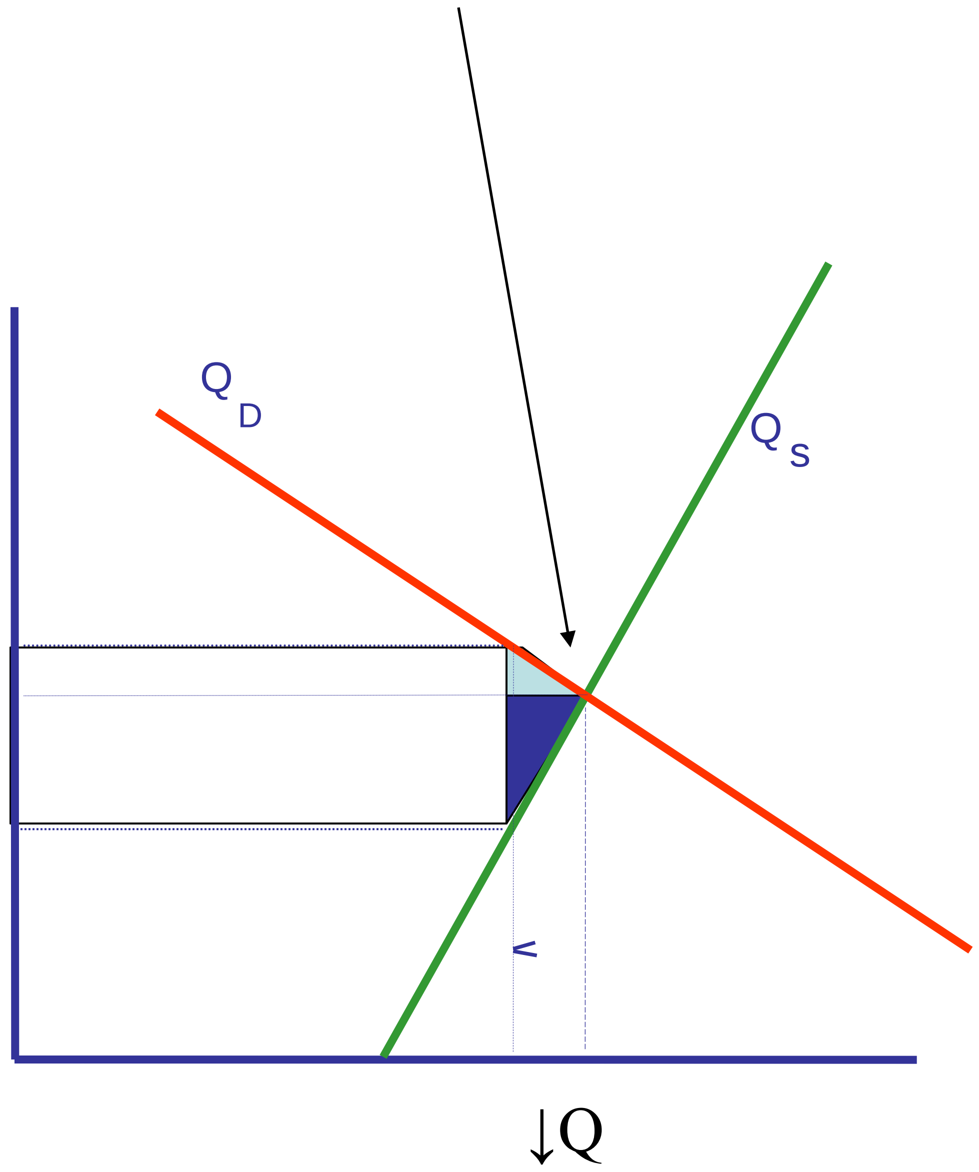


But generates tax revenue

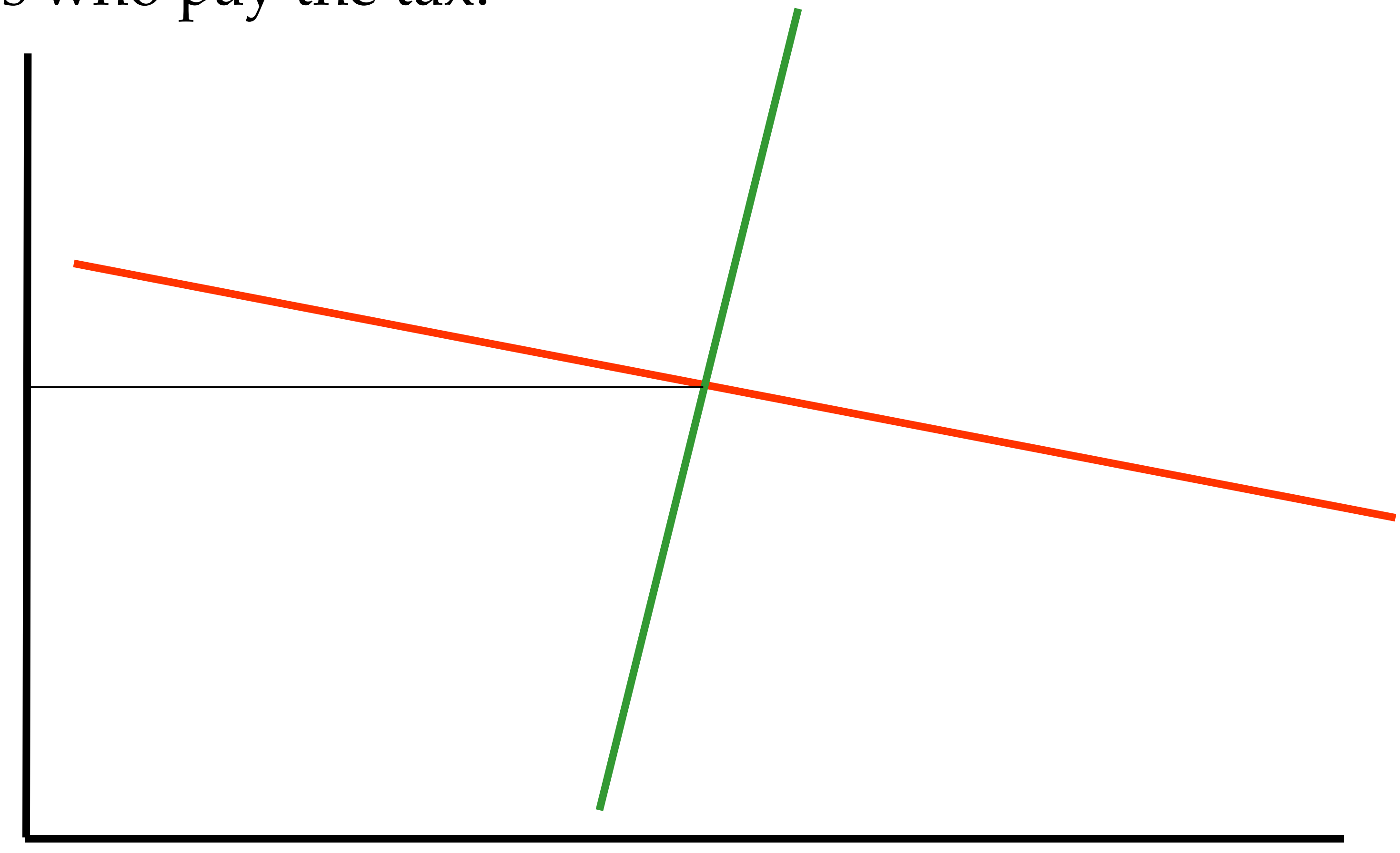


Giving a net loss in value – Excess Burden (or DWL)



WHO PAYS THE TAX?

When buyers are price sensitive "demand is elastic" it is the sellers who pay the tax.



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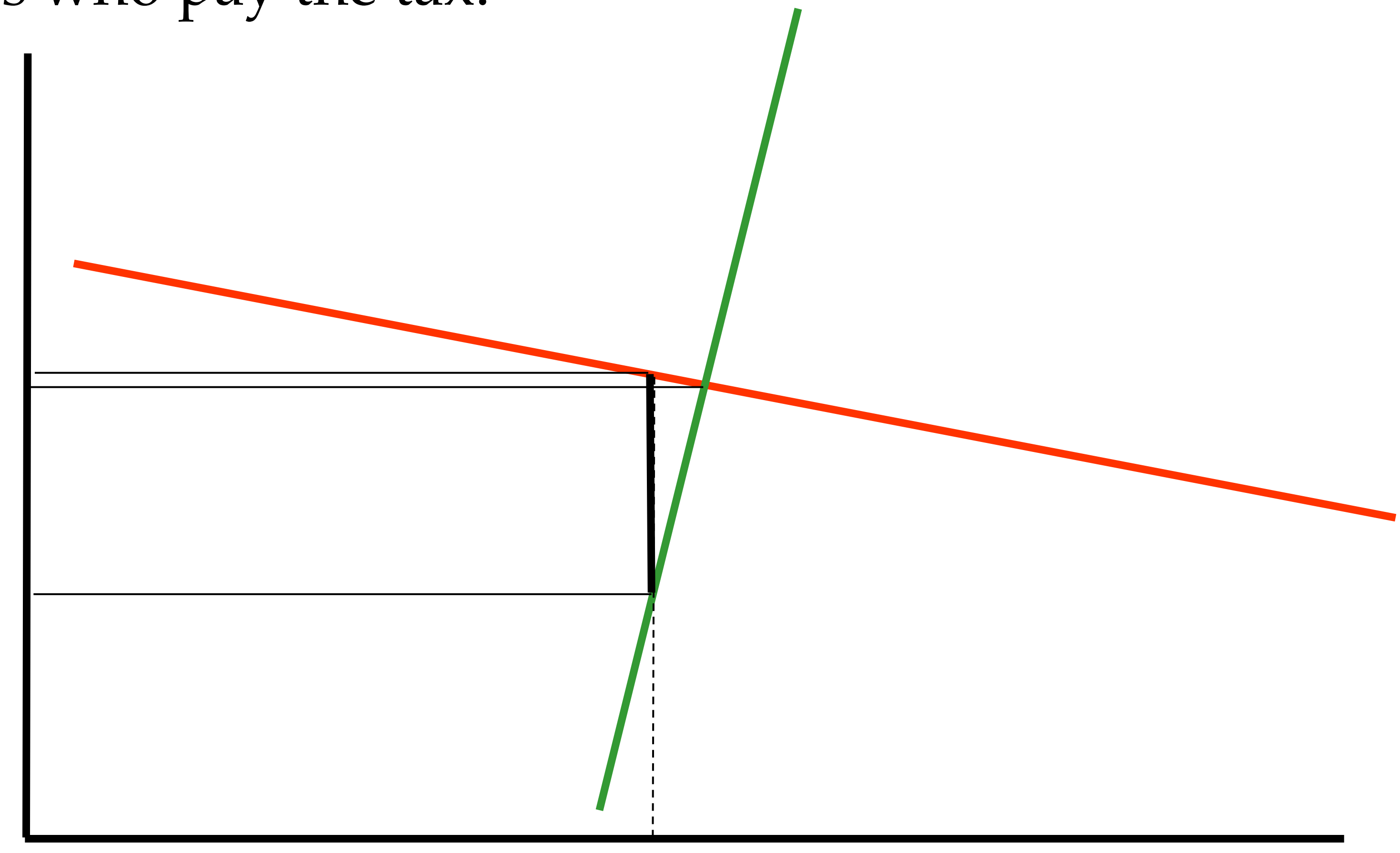

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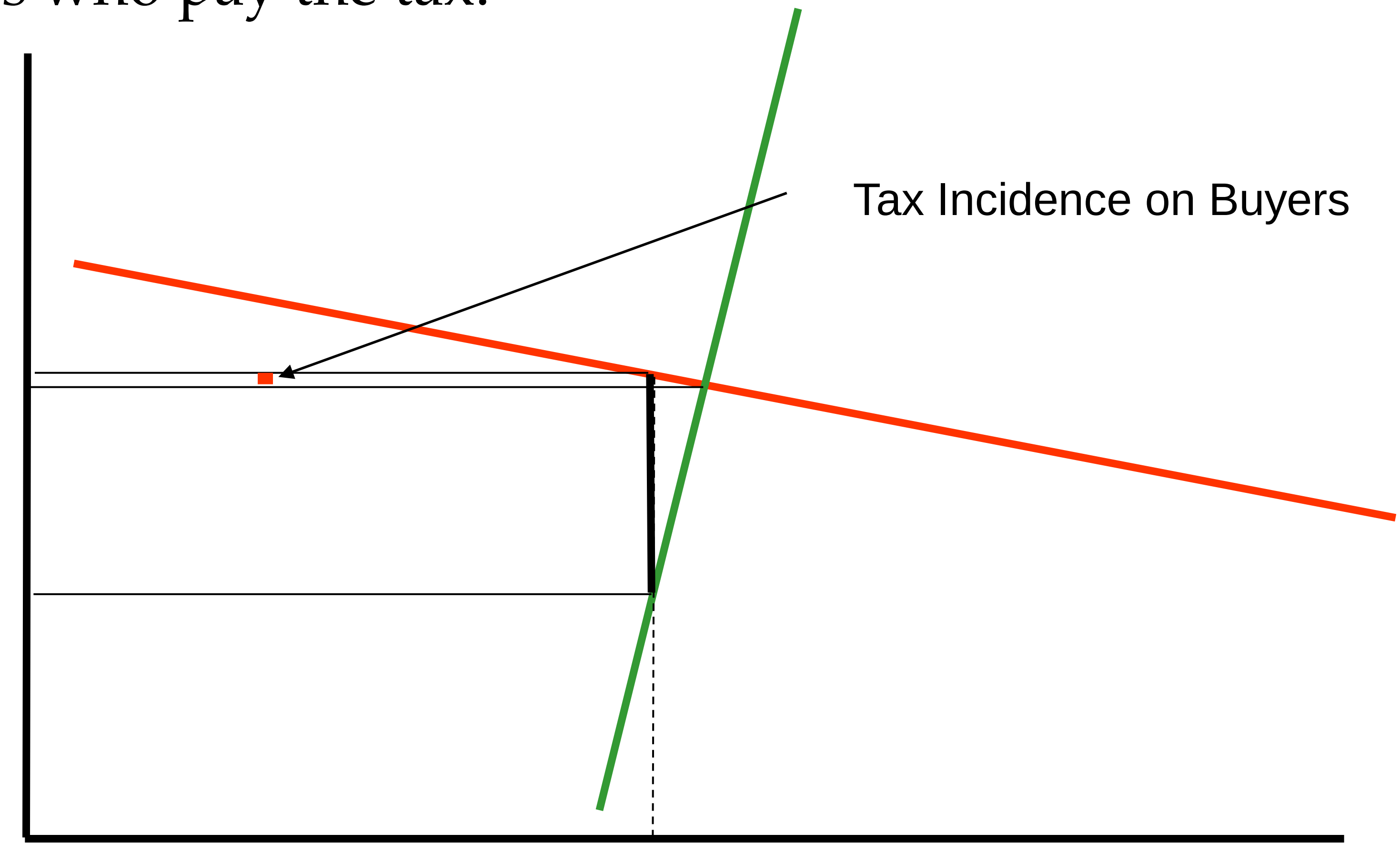

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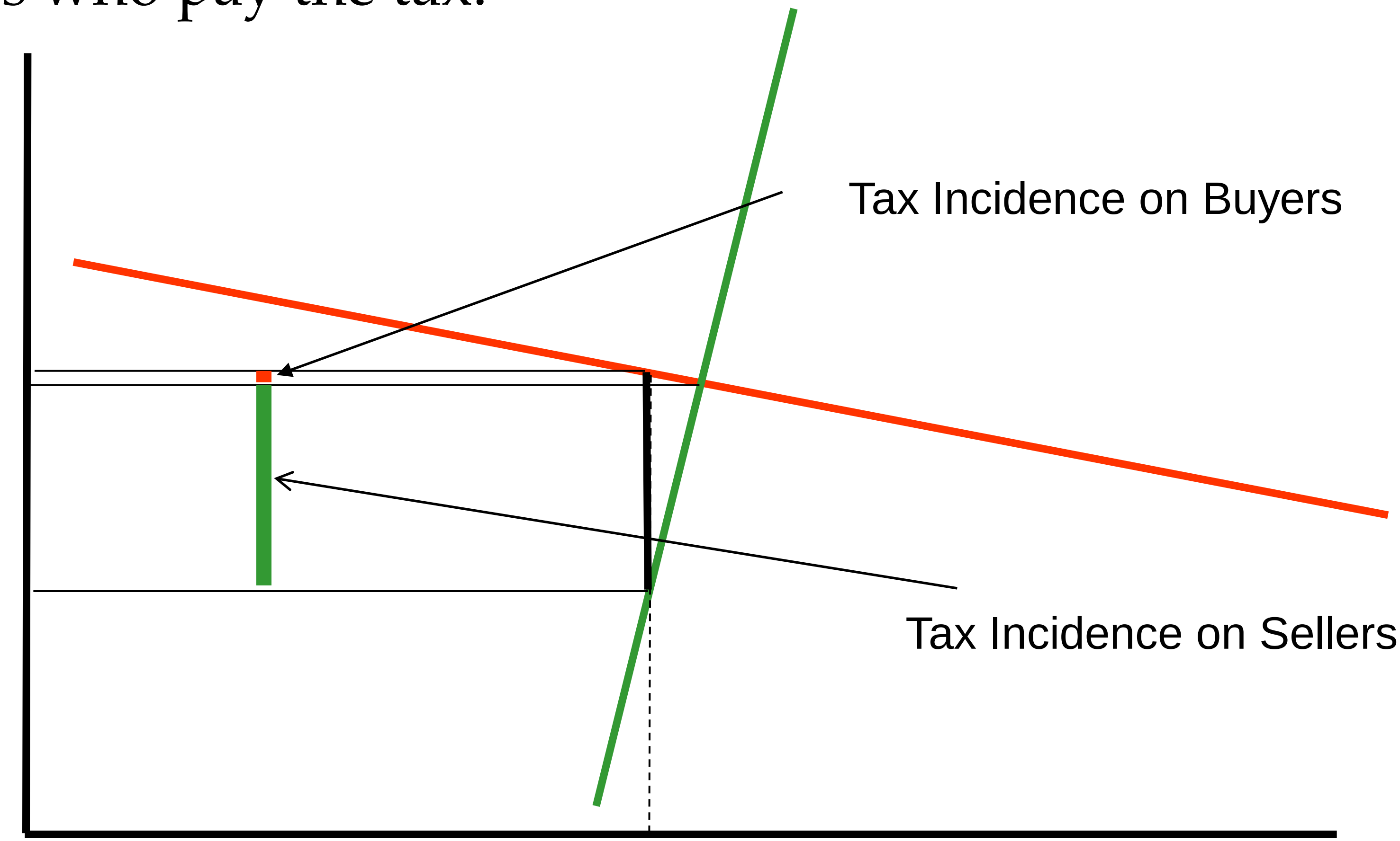

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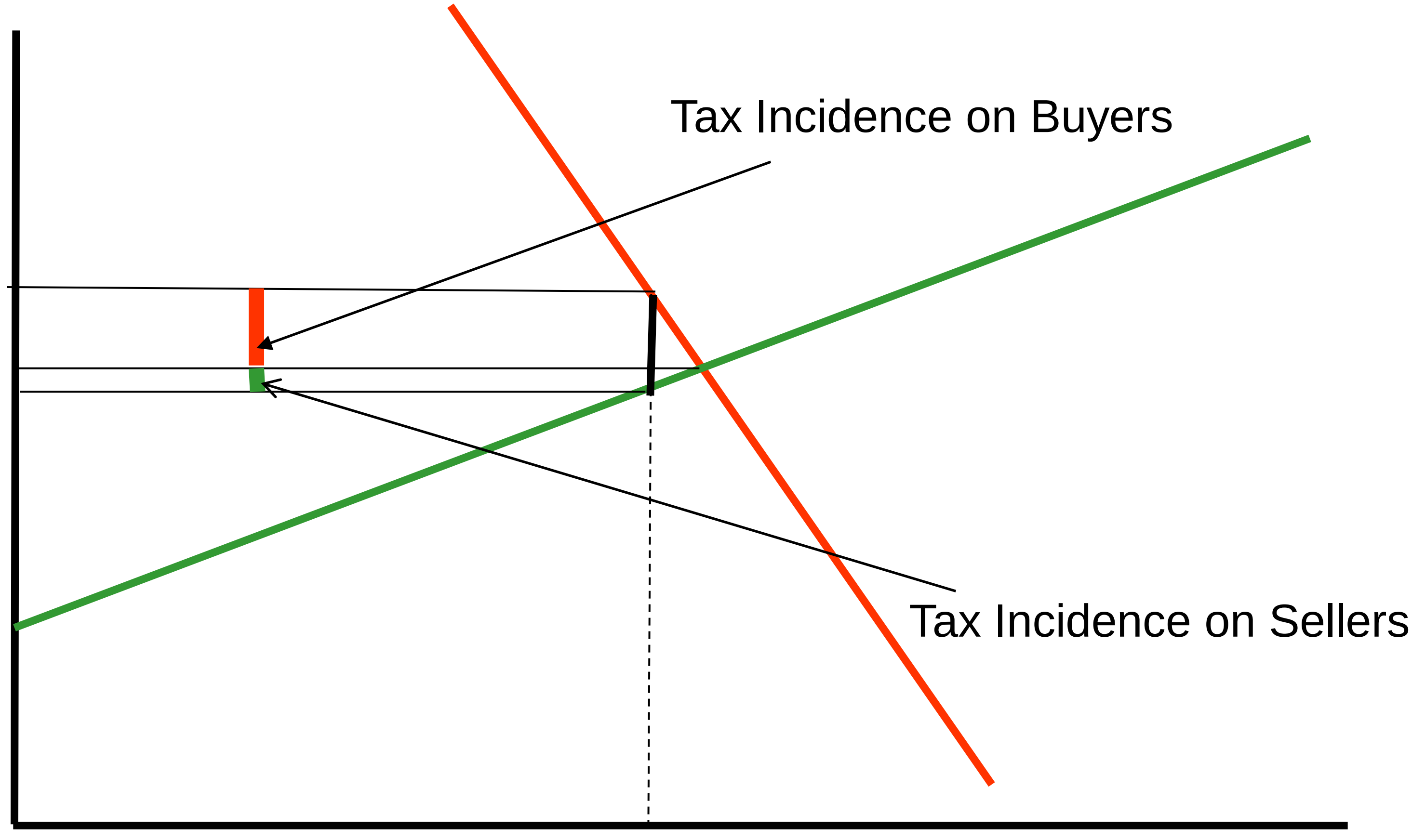
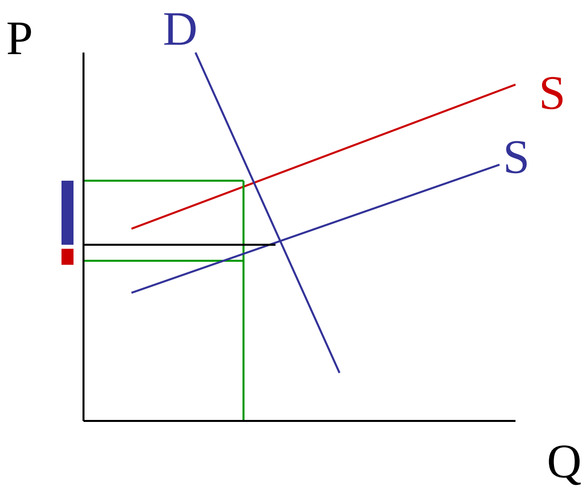


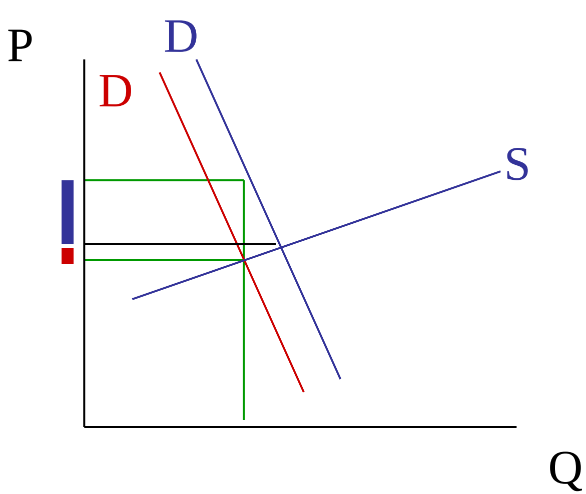
Tax incidence in sum...

Demand <u>less</u> elastic than supply

Suppliers pay nominal incidence...



Consumers pay nominal incidence...



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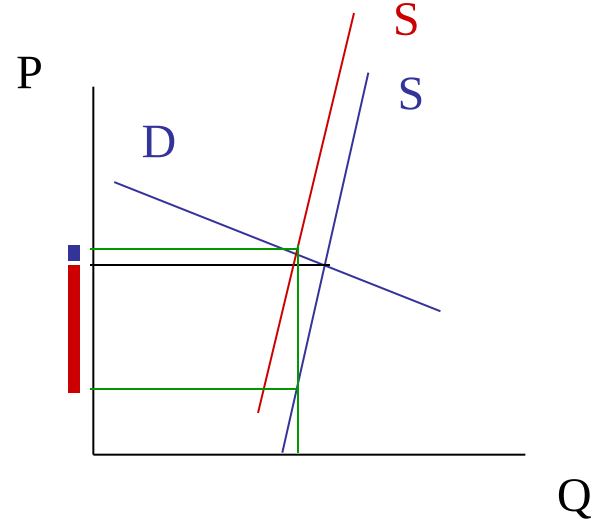

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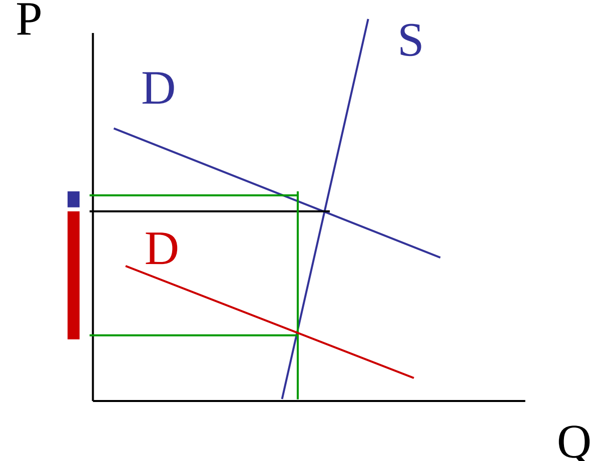
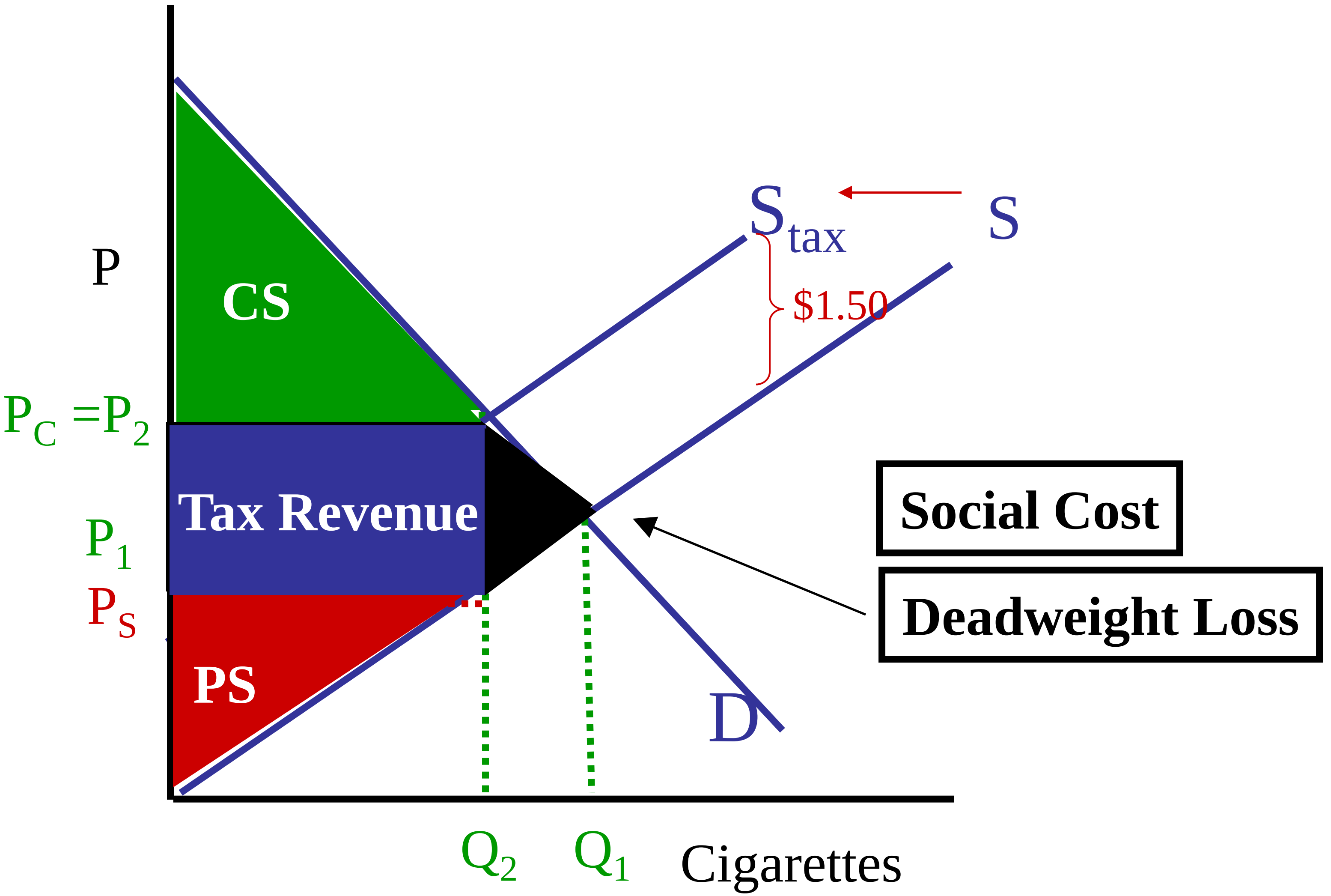


Demand <u>more</u> elastic than supply

Deadweight Loss



Questions:

Who pays the taxes on

(1) Cigarettes
(2) Alcohol
(3) Petrol
(4) Labour?

4. Taxation and Equity

IF policy makes care about equity they will care about the winners and losers associated with tax changes.

Recall

A tax is *progressive* if payment as a % of income increases as income rises.

A tax is *regressive* if payment as a % of income decreases as income rises.

A tax is *neutral* if payment as a % of income is constant as income rises.

Tax Equity

- One theory of fairness is called the ***benefits-received principle,*** which holds that taxpayers should contribute to government (in the form of taxes) in proportion to the benefits that they receive from public expenditures.

Tax Equity

- Another theory of fairness is called the ***ability-to-pay principle,*** which holds that citizens should bear tax burdens in line with their ability to pay taxes.
- Two principles follow: *horizontal equity* and *vertical equity*.

Horizontal and Vertical Equity

- ***Horizontal equity*** holds that those with equal ability to pay should bear equal tax burdens.
- ***Vertical equity*** holds that those with greater ability to pay should pay more.

What is the "Best" Tax Base?

- The three leading candidates for best tax base are:
  - Income,
  - Consumption, and
  - Wealth

Distributional Effects of Taxes

We can assess the distributional effects of one tax or of the tax system as a whole.

- The overall incidence is more important than the effects of single taxes.
- But introducing progressive taxes may improve a regressive system.
- Remember it is still important to focus on the economic incidence of taxes not the formal incidence.

Marginal versus Average Tax Rates

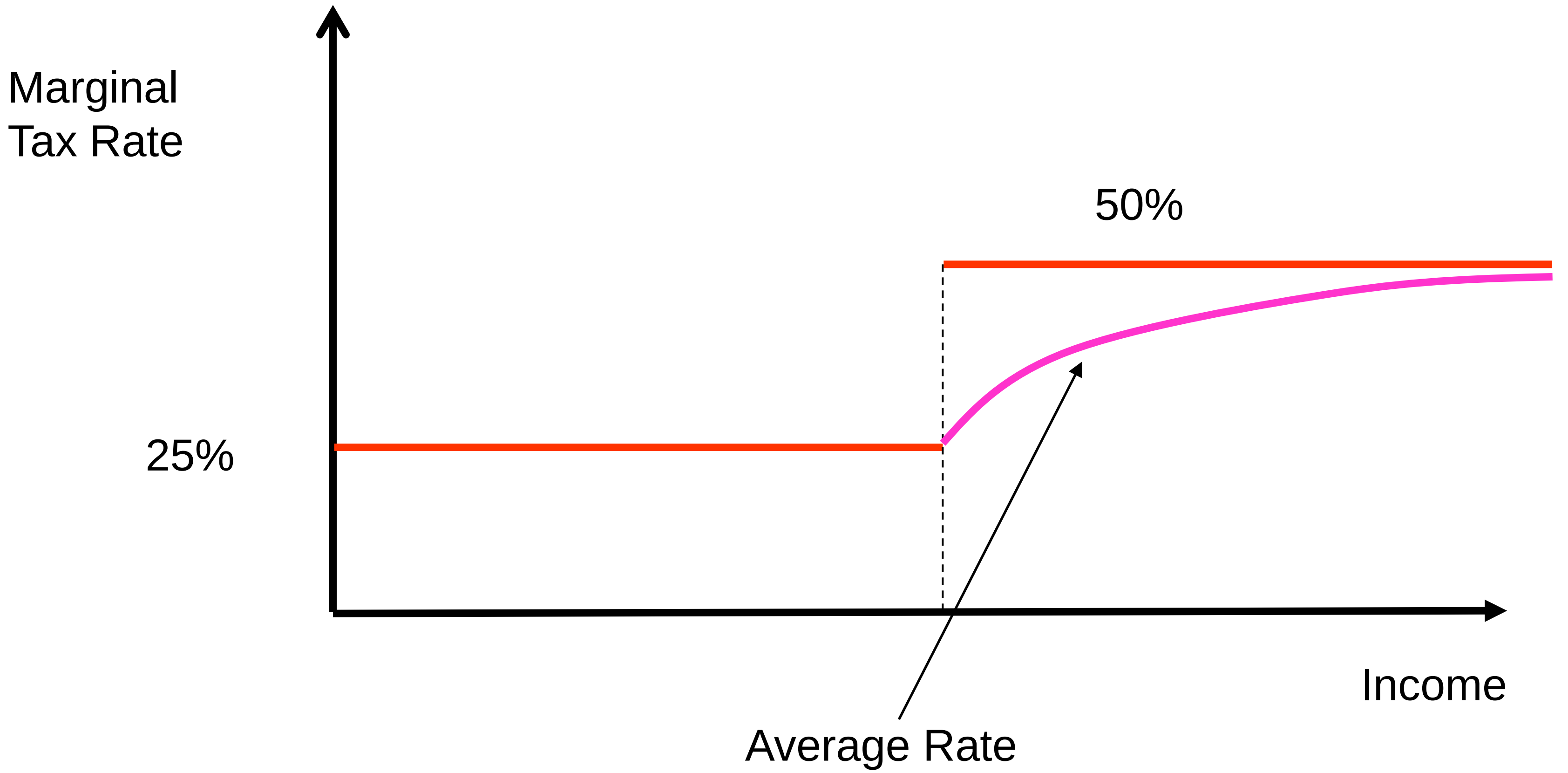
There are 2 distinct ways of achieving progressive tax systems:

(1) Raise the marginal rate of taxes at higher income levels.

(2) Allow some income to not be liable for taxes (a tax-free allowance) or introduce tax credit.

Increasing marginal rates

Example: 25% for first £30k and 50% tax rate thereafter.



Example Continued

You earn £50k

Your tax bill =

	£30k x 0.25	=	£7,500
Plus	(£50k-£30k) x 0.50	=	£10,000
		=	£17,500

Average Tax Rate = 17500/50000 = 35%

Tax Free Allowance

Example: 0% for first £10k and 25% tax rate thereafter.