

# The concept of market failure

HS 156 Economics of Health and Education

Jan-May 2023

# Market failure/Externalities/Public good

- Explain what an externality is and show how it affects the market outcome
- Describe three methods of dealing with externalities
- Define public good and explain the problem with determining the value of a public good to society
- Explain how informational problems can lead to market failure
- Discuss five reasons why a government's solution to a market failure could worsen the situation

# Market Failures

- A **market failure** is a situation in which the invisible hand pushes in such a way that individual decisions do not lead to socially desirable outcomes
  - Externalities
  - Public goods
  - Imperfect information
- **Government failures** are when the government intervention actually makes the situation worse

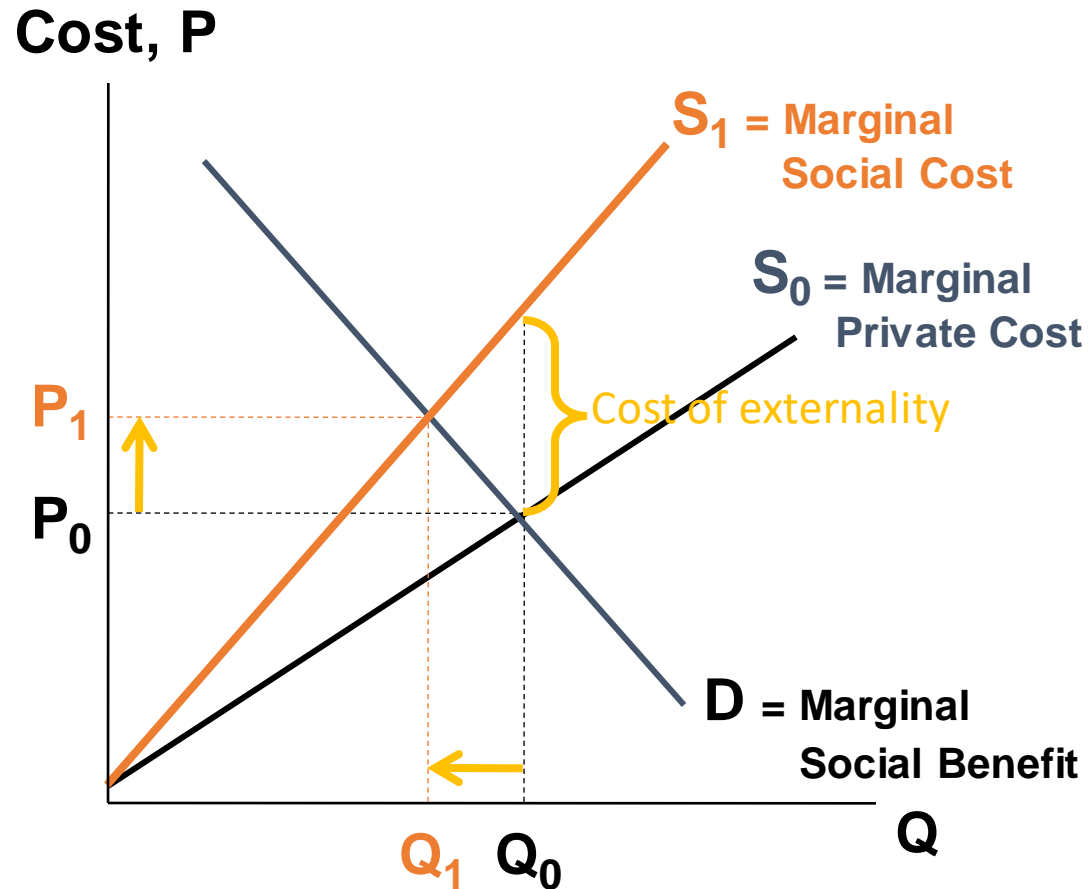
# Externalities

- **Externalities** are the effects of a decision on a third party that are not taken into account by the decision-maker
  - **Negative externalities** occur when the effects are detrimental to others
    - Ex. Second-hand smoke and carbon monoxide emissions
  - **Positive externalities** occur when the effects are beneficial to others
    - Ex. Education

# A Negative Externality Example

- When there are negative externalities, the marginal social cost differs from the marginal private cost
- The **marginal social cost** includes the marginal private costs of production plus the cost of negative externalities associated with that production
  - It includes *all* the marginal costs that society bears

# A Negative Externality Example



If there are no externalities,  
 $P_0Q_0$  is the equilibrium

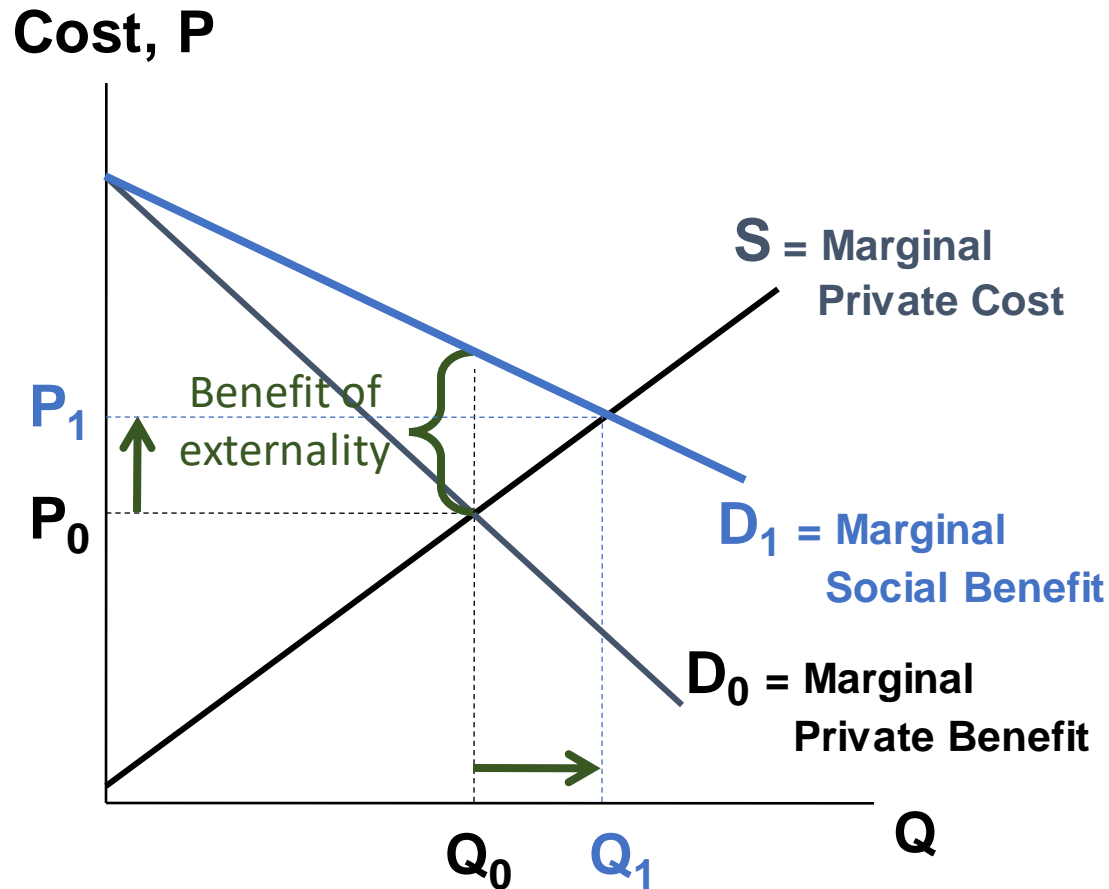
If there are externalities,  
the marginal social cost  
differs from the marginal  
private cost, and  $P_0$  is too  
low and  $Q_0$  is too high to  
maximize social welfare

Government intervention  
may be necessary to **reduce  
production**

# A Positive Externality Example

- When there are positive externalities, the marginal social benefit differs from the marginal private benefit
- The **marginal social benefit** includes the marginal private benefit of consumption plus the benefits of positive externalities resulting from consuming that good
  - It includes *all* the marginal benefits that society receives

# A Positive Externality Example



If there are no externalities,  
 $P_0Q_0$  is the equilibrium

If there are externalities, the  
marginal social benefit  
differs from the marginal  
private benefit, and both  $P_0$   
and  $Q_0$  are too low to  
maximize social welfare

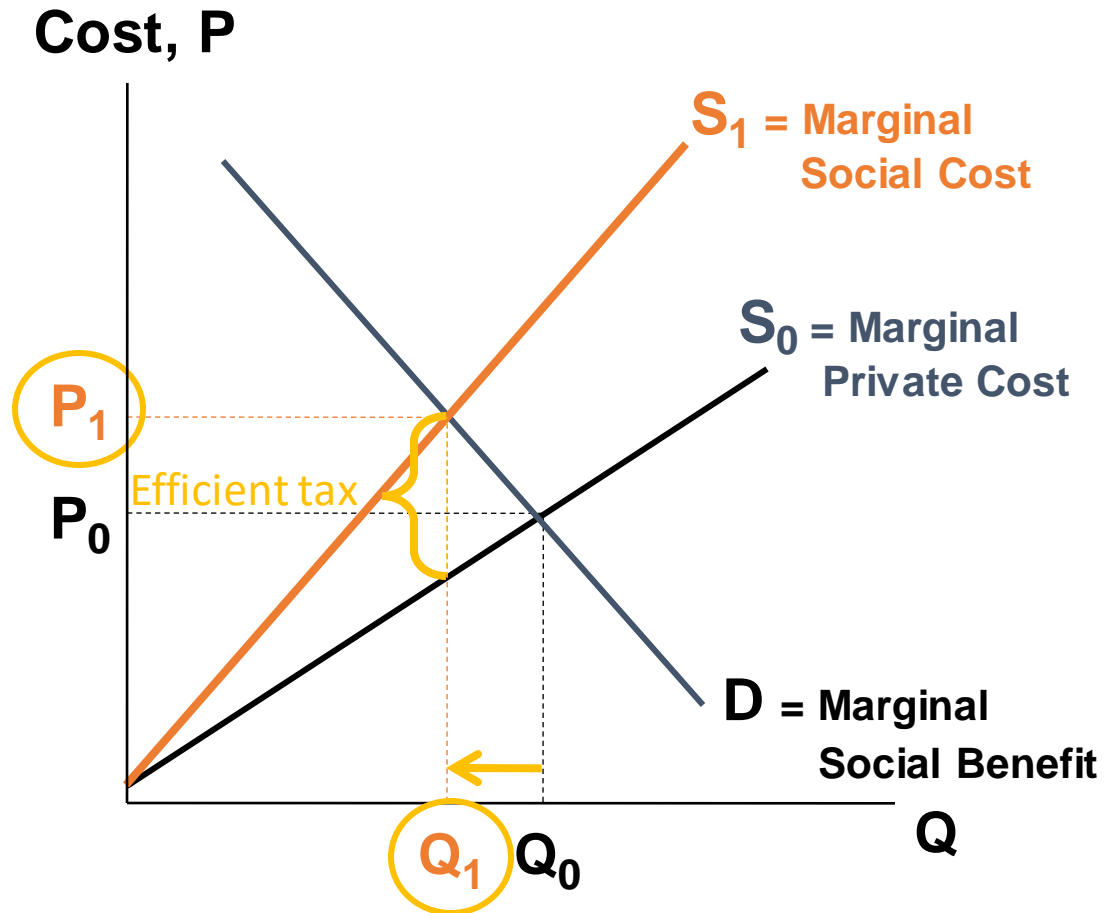
Government intervention  
may be necessary to  
**increase consumption**



# Methods of Dealing with Externalities

- **Direct regulation** is when the government directly limits the amount of a good people are allowed to use
- Incentive policies
  - **Tax incentives** are programs using a tax to create incentives for individuals to structure their activities in a way that is consistent with the desired ends
  - **Market incentives** are plans requiring market participants to certify that they have reduced total consumption by a certain amount
- **Subsidies** are used to correct/internalize positive externality
- Voluntary solutions

# Tax Incentive Policies



A tax on pollution that equals the social cost of the negative externality will cause individuals to *reduce* the quantity of the pollution causing activity to the socially optimal level  $Q_1$

**Effluent fees** are charges imposed by governments on the level of pollution created

# Market Incentive Policies

- A market incentive plan is similar to direct regulation in that the amount of the good consumed is reduced
- A market incentive plan differs from direct regulation because individuals who reduce consumption by more than the required amount receive marketable certificates that can be sold to others
- Incentive policies are more efficient than direct regulatory policies

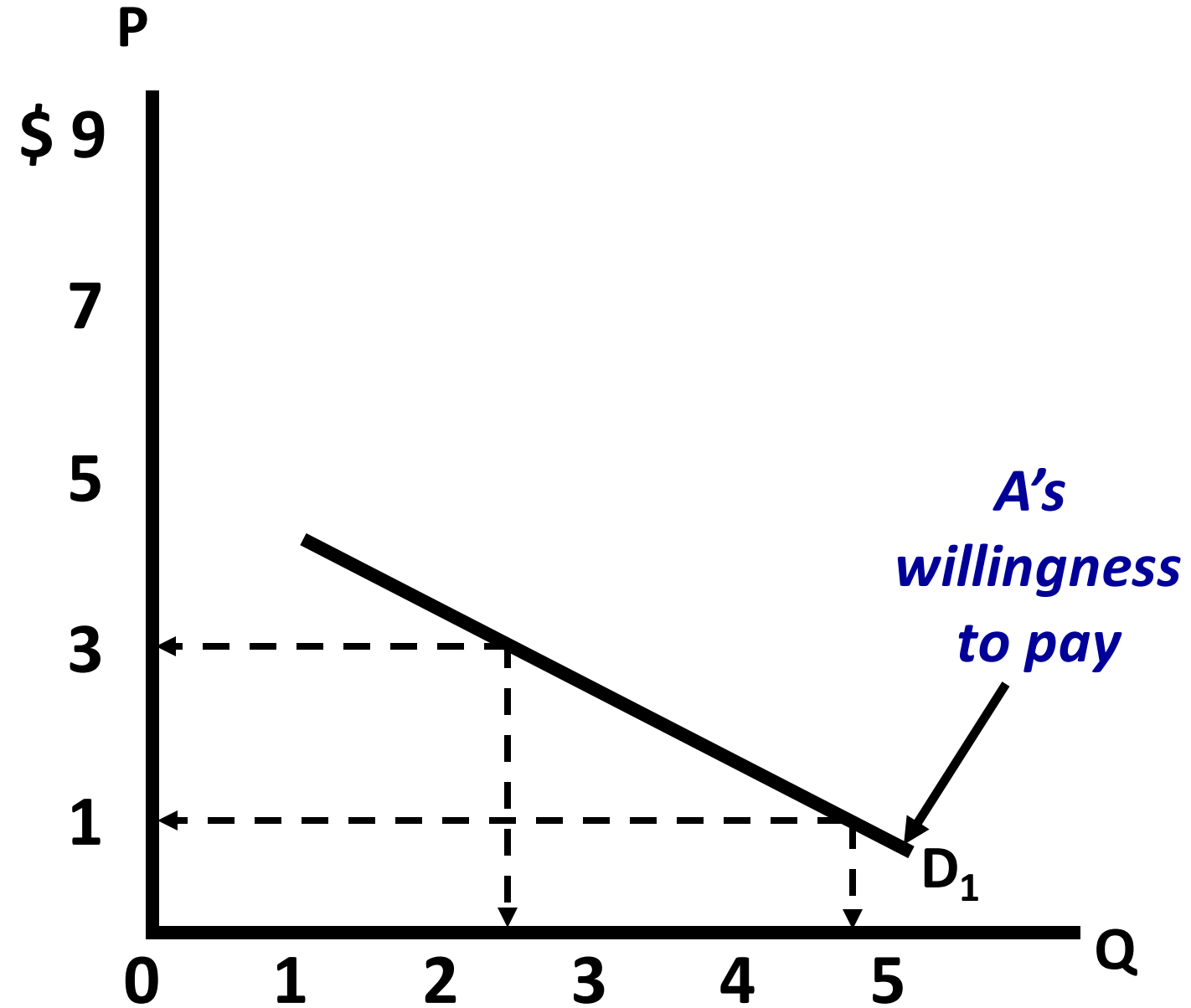
# Voluntary Reductions

- Voluntary reductions allow individuals to choose whether to follow what is socially optimal or what is privately optimal
- The socially conscious will often become discouraged and quit contributing when they believe a large number of people are free riding
- **Free rider problem** is individuals' unwillingness to share the cost of a public good

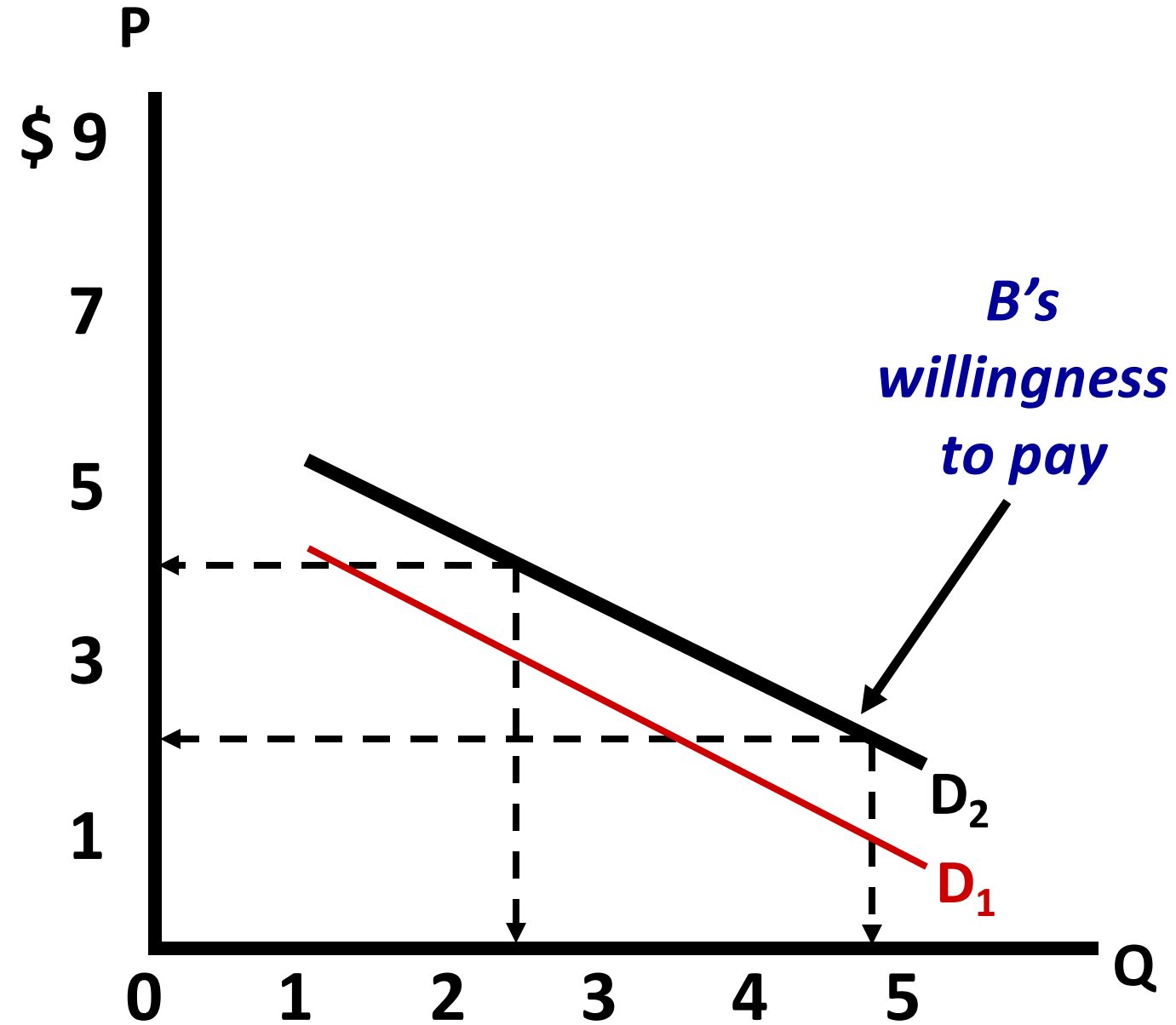
# The Optimal Policy

- An **optimal policy** is one in which the marginal cost of undertaking the policy equals the marginal benefit of that policy
- Resources are being wasted if a policy isn't optimal
- For example, the optimal level of pollution is not zero pollution, but the amount where the marginal benefit of reducing pollution equals the marginal cost

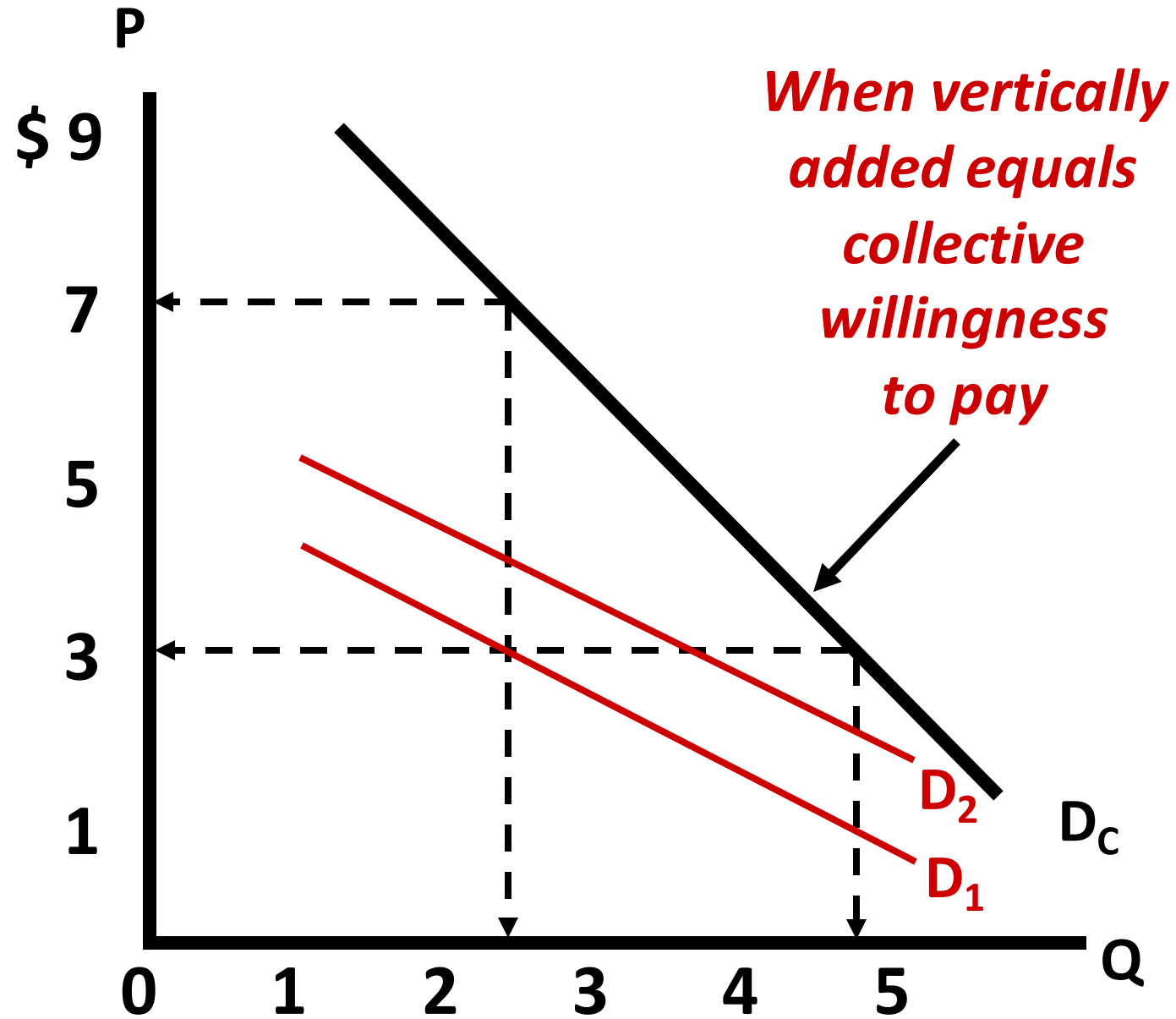
# OPTIMAL AMOUNT OF A PUBLIC GOOD



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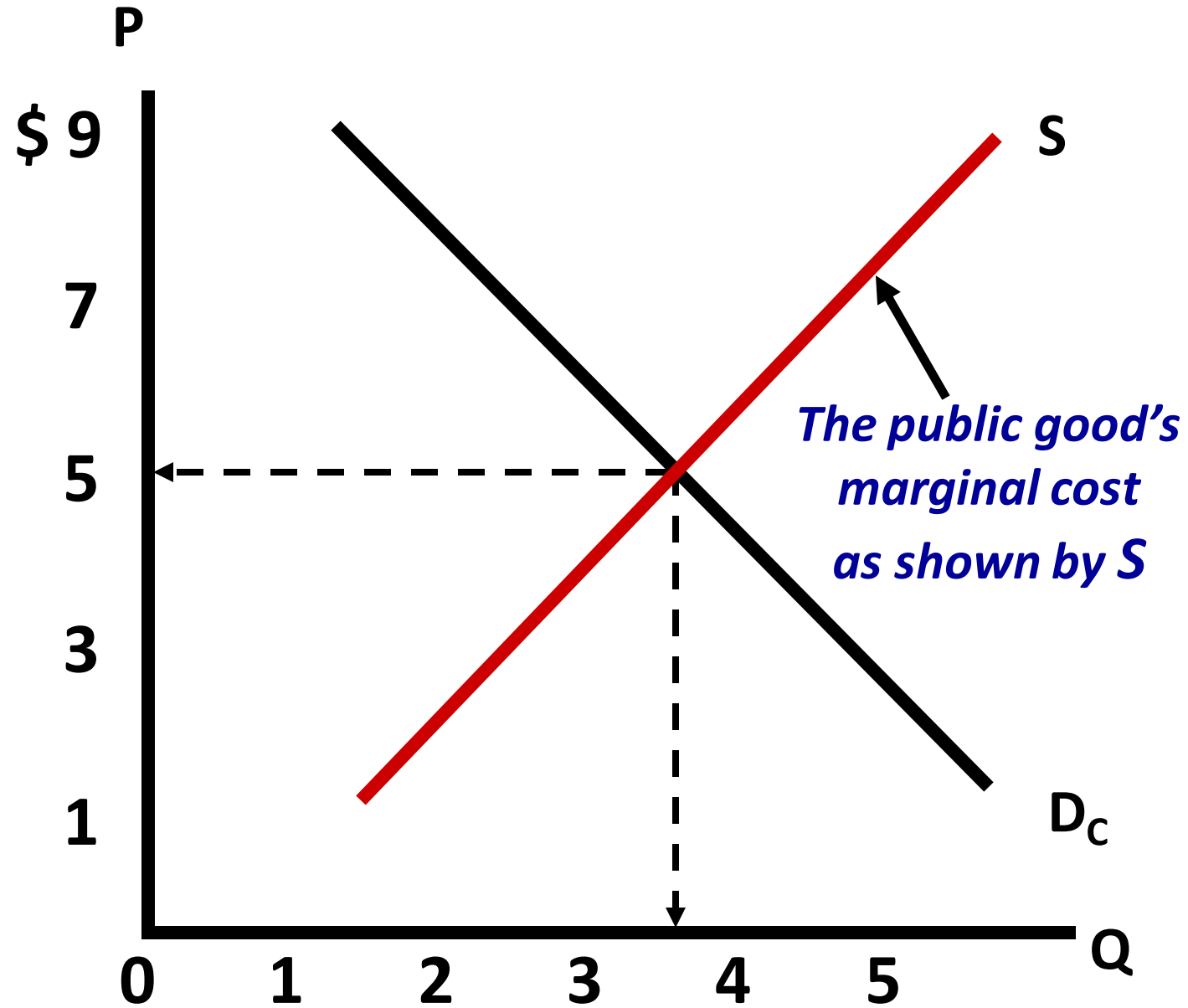


# OPTIMAL AMOUNT OF A PUBLIC GOOD

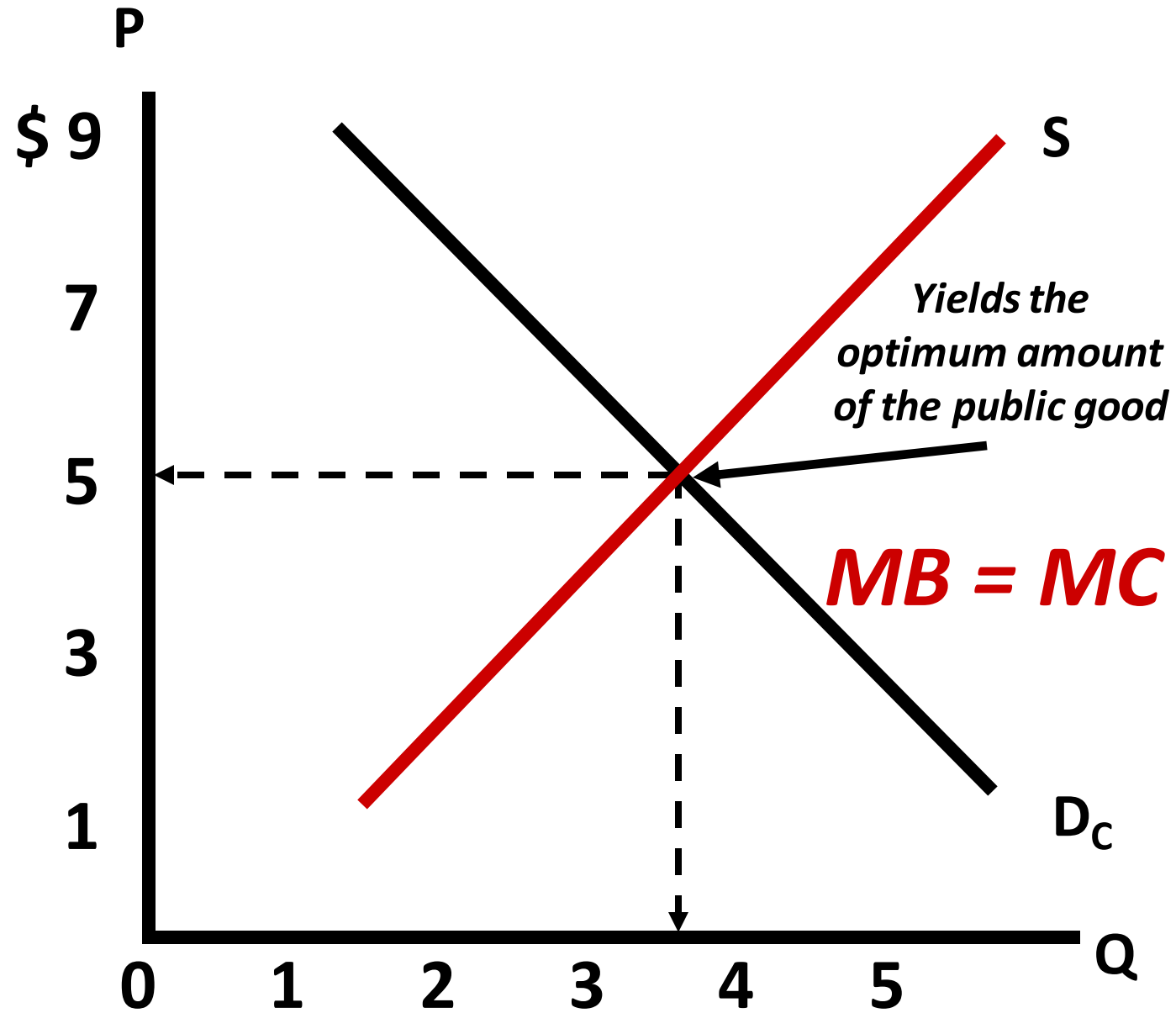




# OPTIMAL AMOUNT OF A PUBLIC GOOD



# OPTIMAL AMOUNT OF A PUBLIC GOOD



# COST-BENEFIT ANALYSIS

*Marginal Cost = Marginal Benefit Rule*

## Externalities

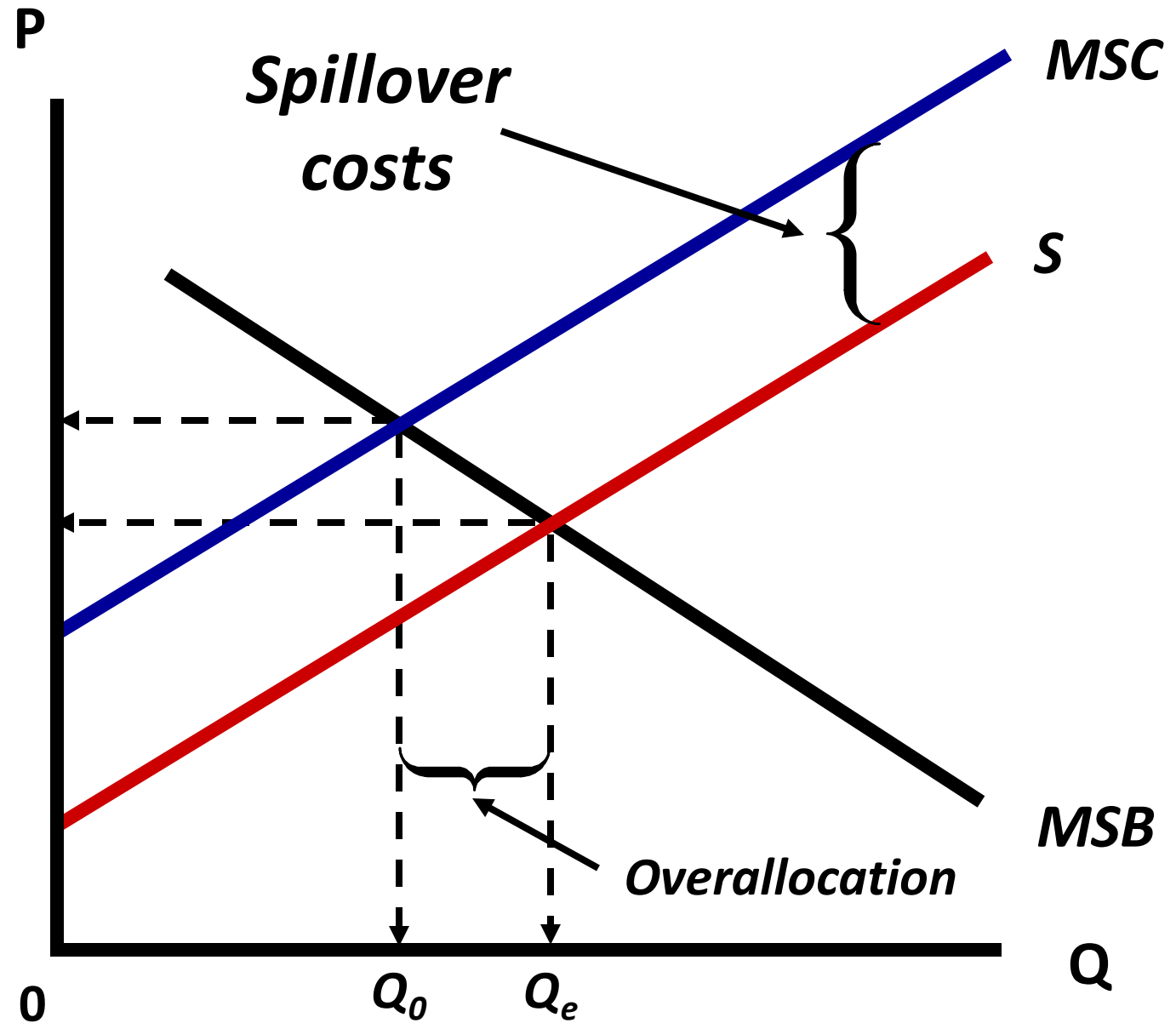
Spillover Costs (negative externalities)

*Overallocation*

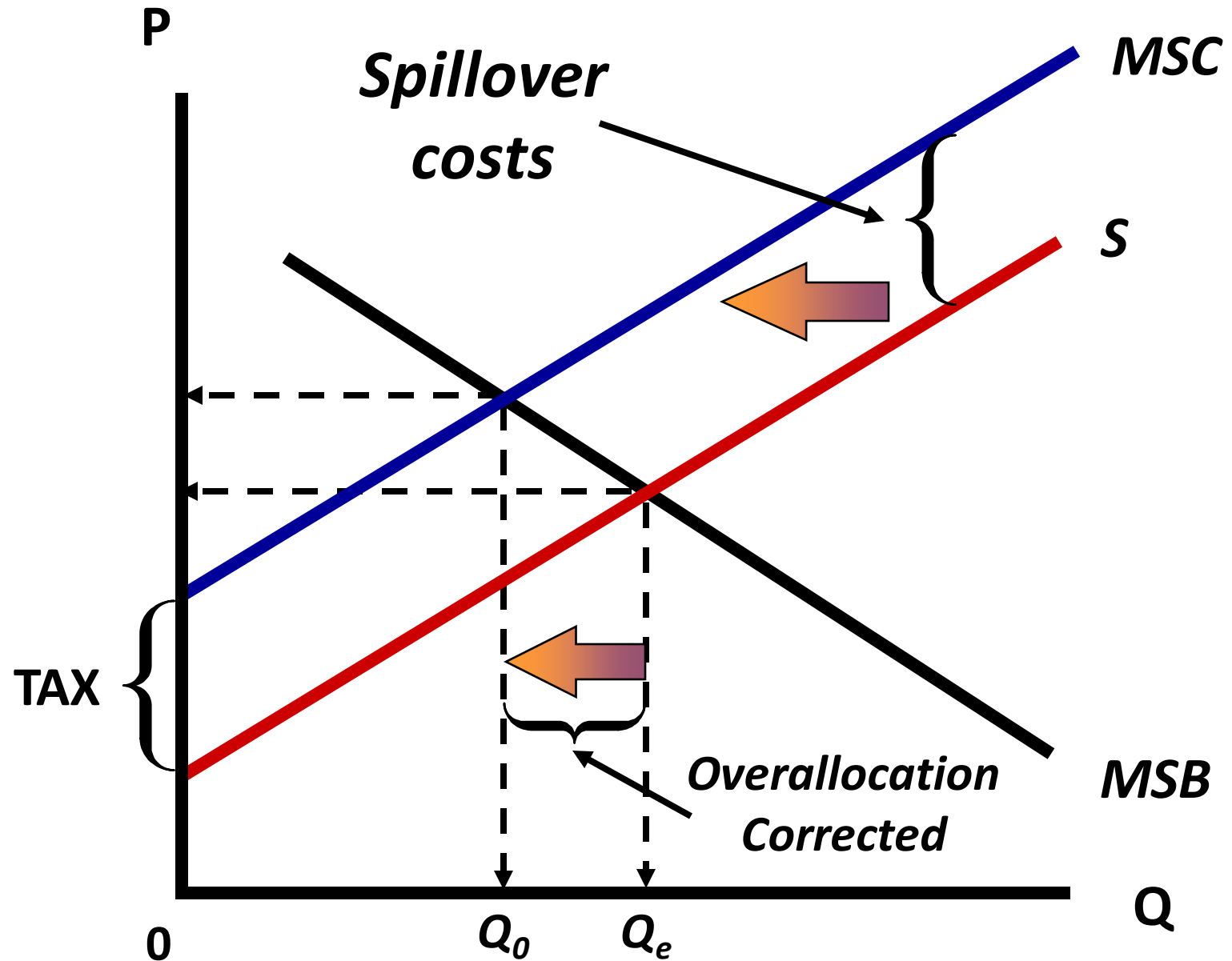
Spillover Benefits (positive externalities)

*Underallocation*

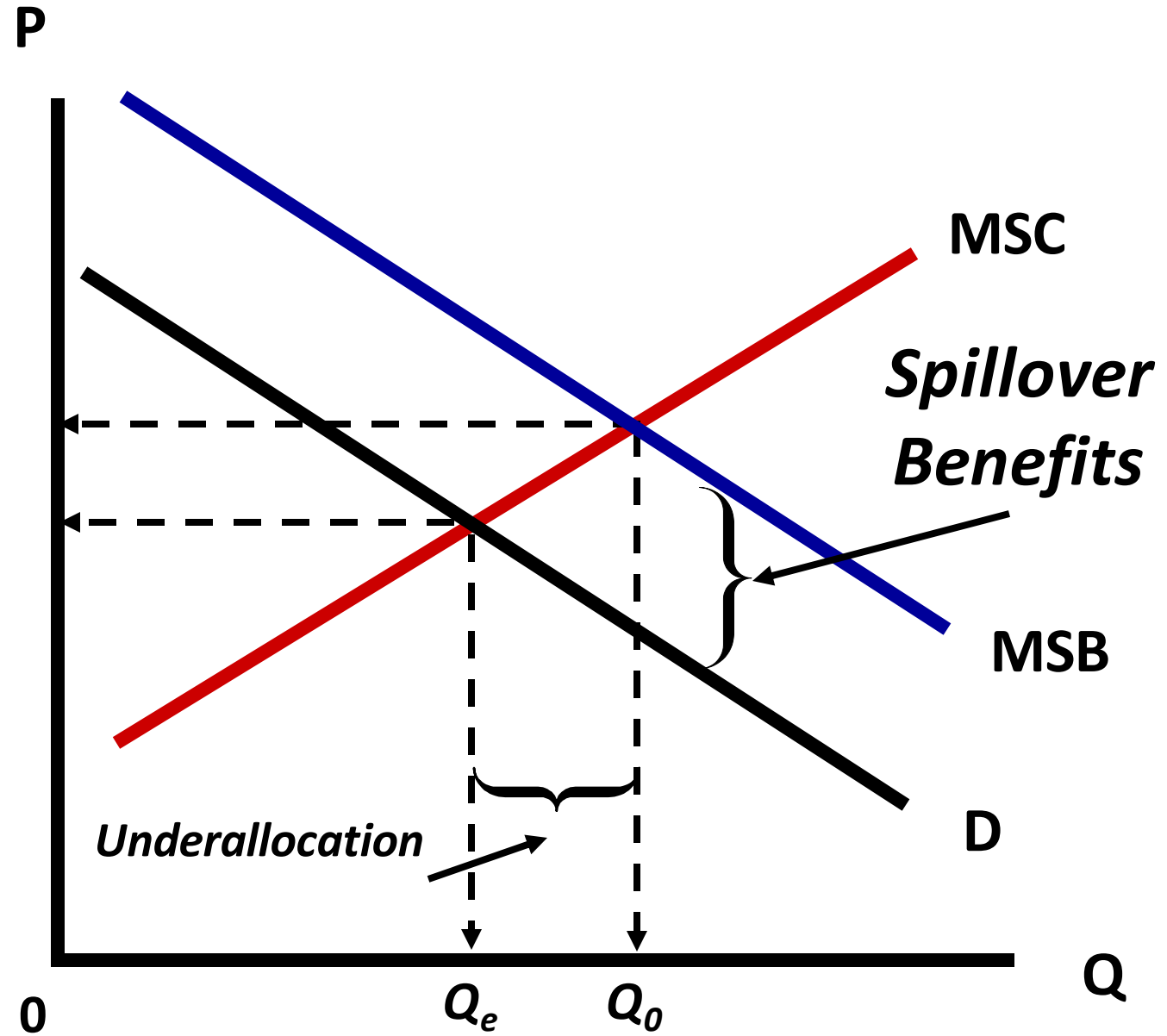
# SPILLOVER COSTS



# CORRECTING SPILLOVER COSTS

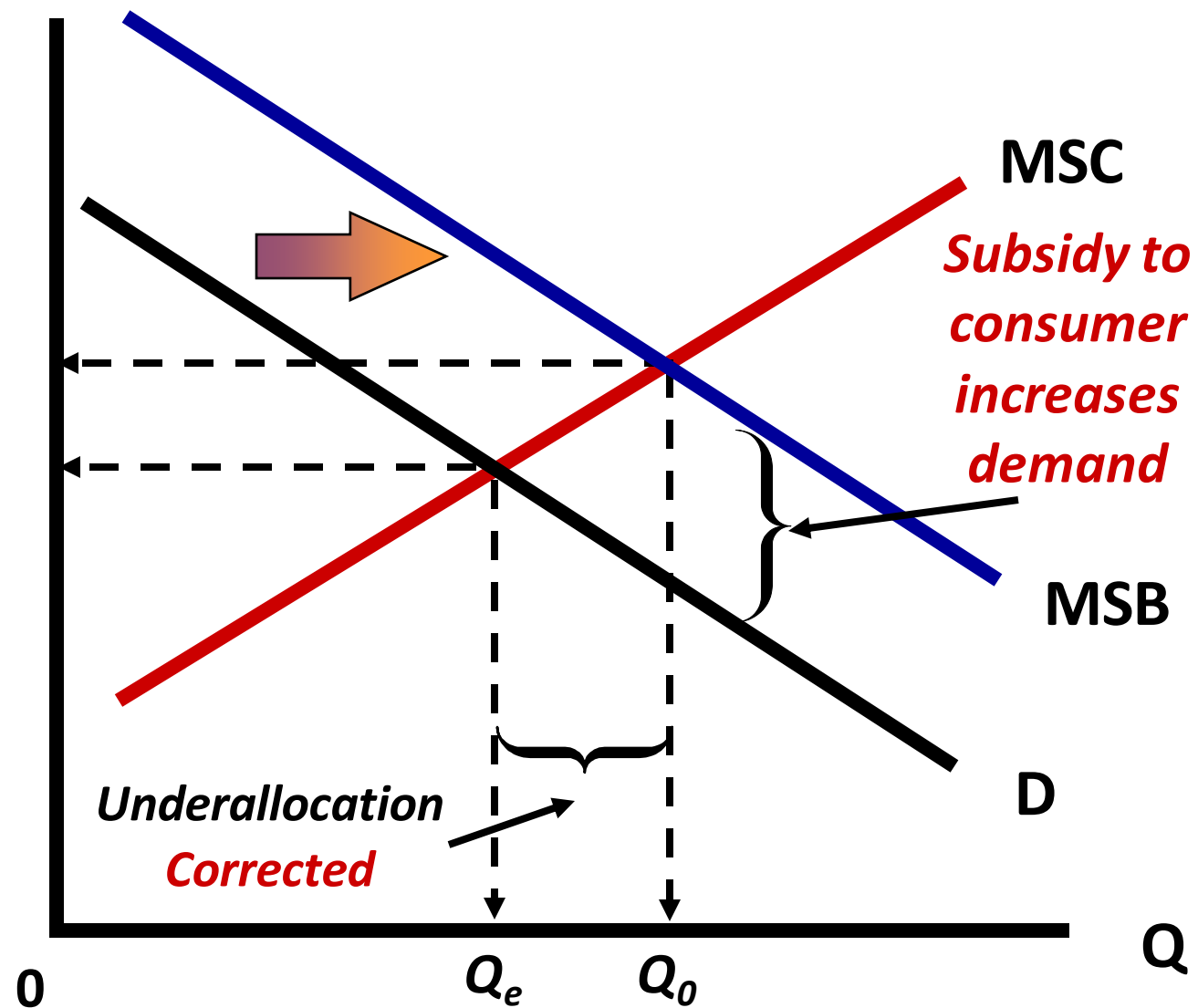


# SPILLOVER BENEFITS



# CORRECTING SPILLOVER BENEFITS

**P** *Correcting by Subsidy to Consumers*



# CORRECTING SPILLOVER BENEFITS

**P** *Correcting by Subsidy to Producers*

