

## Externalities

Government action can sometimes improve upon market outcomes

- Markets sometimes fail to allocate resources efficiently
  - Government policies can potentially improve the market's allocation
- **Externality** - The uncompensated impact of one person's actions on the well-being of a bystander
  - **Negative Externality** - adverse impact on bystander
  - **Positive Externality** - beneficial impact on bystander
    - Society's interest in market outcome extends past buyers/sellers to bystanders
    - Buyers and sellers neglect the external effects of their actions
      - Market equilibrium not efficient with externalities
      - Fail to maximize total benefit to society as a whole
  - Government responds by protecting the interests of bystanders through laws and regulations

## EXTERNALITIES AND MARKET INEFFICIENCY

How externalities affect economic well-being

- Externalities cause markets to allocate resources inefficiently

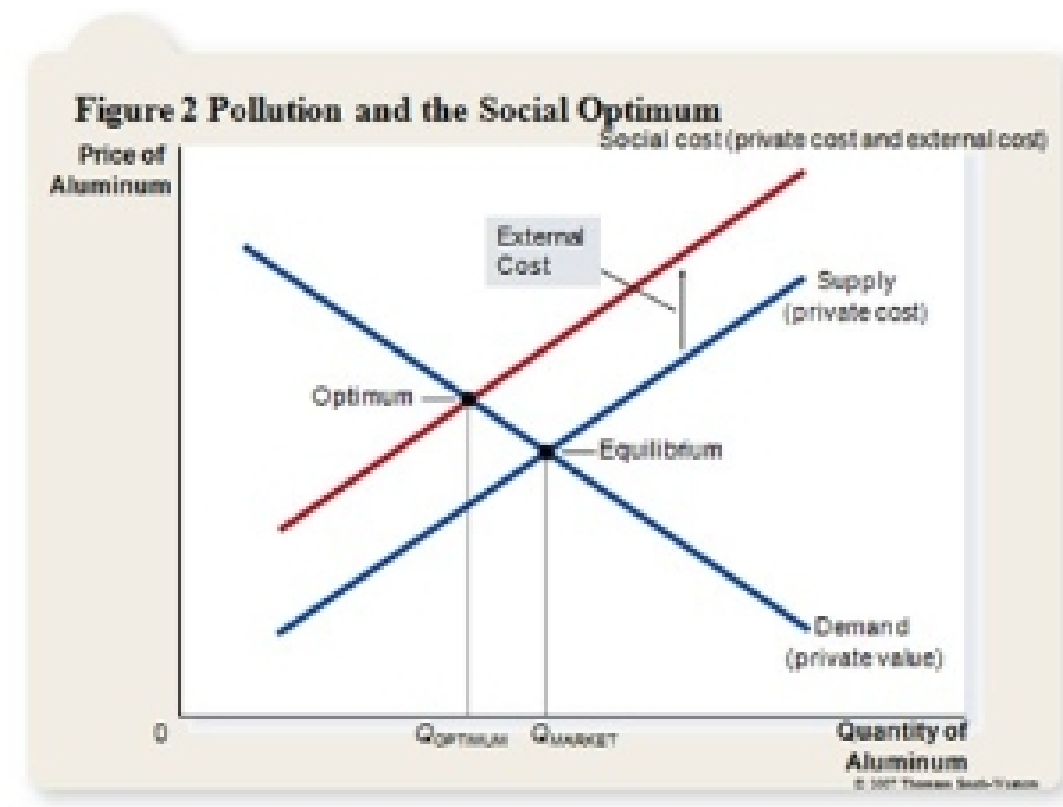
### **Welfare Economics: A Recap**

- Height of demand curve shows willingness to pay for marginal buyer
- Height of supply curve shows the cost to the marginal seller
  - Without government intervention, price adjusts to balance the supply and demand
    - Maximizes the sum of producer and consumer surplus
    - Allocates resources in a way that maximizes the total value to the consumers who buy minus producers who sell

### **Negative Externalities**

Negative externality brings a cost to society that is larger than the cost to producers

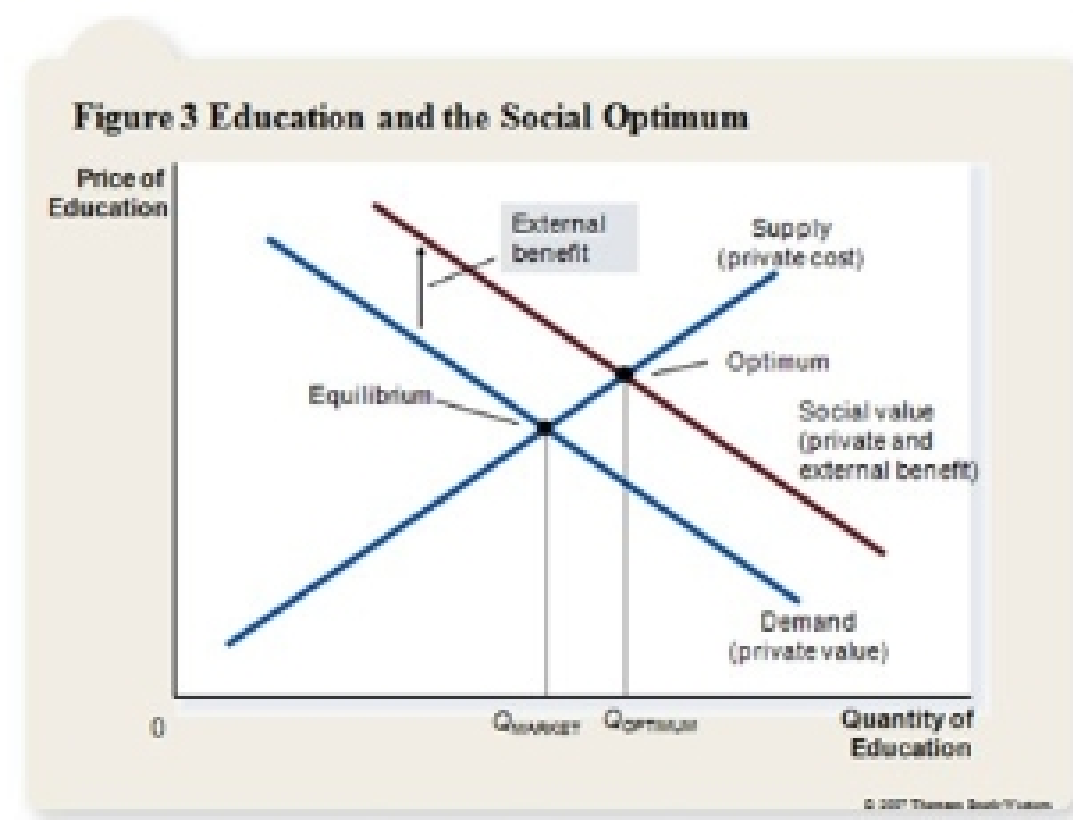
- **Social cost** - Producer cost + societal bystander cost
  - Social cost curve is above supply curve, distance between them is external cost
  - Intersection of social cost curve and demand curve is optimum
    - Value to consumers exceeds social cost of production
- Market equilibrium lies below optimum for total well-being
  - Must tax the product → shift supply curve upward
    - **Internalizing the externality** - Altering incentives so that people take account of the external effects of their actions
      - Buyers and sellers more aware and cautious



### Positive Externalities

Some externalities yield benefits to society

- Eg: Education → more productive worker with higher wages
  - Positive externalities
    - More informed voters, better government
    - Lower crime rate
    - Development of advanced technologies
- Social value is greater than private value
  - Social value curve lies above demand curve
  - Optimum – social value curve and supply curve intersect
    - Optimum quantity is greater than quantity determined by private market
  - Moving market equilibrium closer to optimum requires a subsidy



*\*Negative externalities → market produces larger quantity than desired (TAX)*

*Positive externalities → market produces smaller quantity than desired (SUBSIDY)*

### **PUBLIC POLICIES TOWARD EXTERNALITIES**

Both public policymakers and private individuals respond to externalities in various ways

- Remedy → move allocation of resources closer to the social optimum
  - **Command-and-control policies** – regulate behavior directly
  - **Market-based policies** – provide incentives so that private decision makers will choose to solve the problem on their own

#### **Command-and-Control Policies: Regulation**

Government can remedy an externality by making certain behaviors either required or forbidden

- Impossible to prohibit all polluting activity
  - Eg transportation – needed in society
  - Must find compromise
    - Dictate maximum level of pollution a factory may emit
    - Firms adopt a technology that reduces emissions

#### **Market-Based Policy 1: Corrective Taxes and Subsidies**

Government can use market-based policies to align private incentives with social efficiency

- **Corrective taxes** – A tax designed to induce private decision makers to take account of the social costs that arise from a negative externality
  - Ideal tax → would equal to external cost from an activity with negative externalities
  - Ideal subsidy → would equal the external benefit from an activity with positive externalities
- Most economists prefer taxing over regulation because taxing can achieve same as regulating
  - Higher tax, larger reduction in negative externality
- Tax accomplishes goal more efficiently
  - Regulation forces all factories to reduce pollution same amount
  - Tax can make some respond substantially and others pay tax fee
    - Lowest total cost using taxes
- Corrective taxes are better for the environment
  - Regulation → once regulation is reached factories have no reason to lower pollution further
  - Tax → incentive for factories to find cleaner technologies