

Part III

Imperfectly Competitive Markets

Imperfect vs. Perfect

Im-perfect = Perfect except that one or more of the following assumptions apply:

- Consumers/suppliers are **NOT** price-takers, or
- Goods are **NOT** homogeneous, or
- There **ARE** externalities, or
- Goods are **NOT** excludable and rival, or
- **Imperfect** (not full) information, or
- **NO** free entry and exit.

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So what happens?

Chapter 9: Externalities

Positive Consumption Externality

Meet Maia ☺

- Assume Maia likes perfume

→ Maia derives Marginal Benefit from wearing perfume



How much perfume should Maia wear?

$$MC_{Maia} (= P) = MB_{Maia}$$

- Assume Benji sitting next to Maia LOVES Maia's perfume (can't get enough!)

→ Benji derives External Marginal Benefit from Maia wearing perfume

How much perfume should Maia wear?

$$MC_{Maia} (= P) = MB_{Maia} + MB_{Benji}$$

POSITIVE CONSUMPTION EXTERNALITY

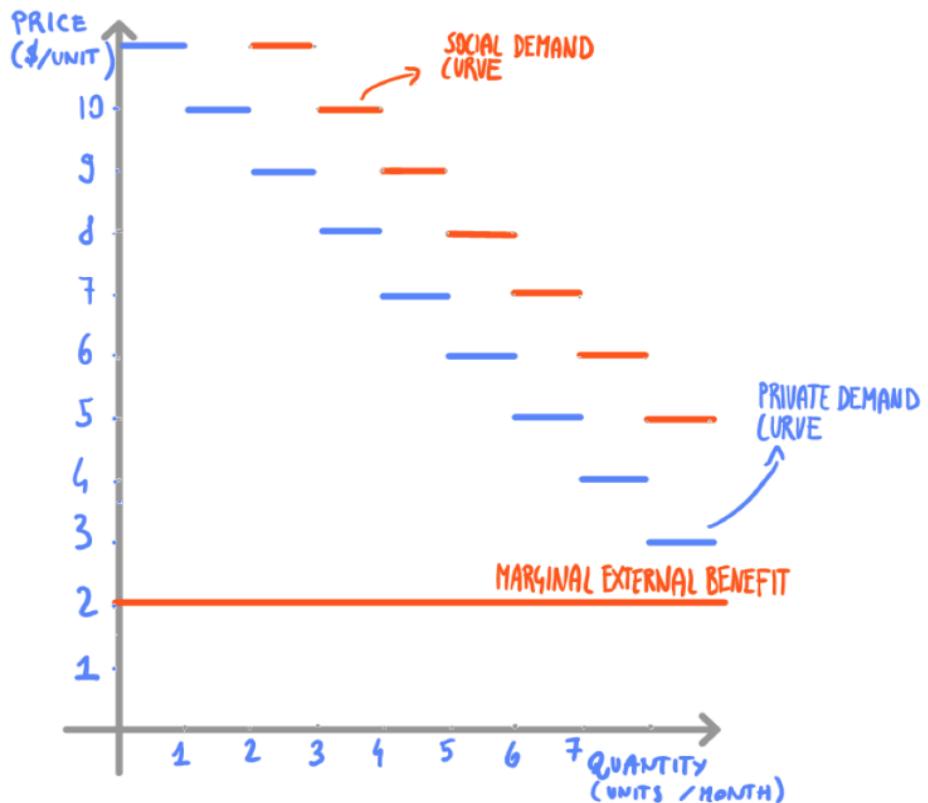
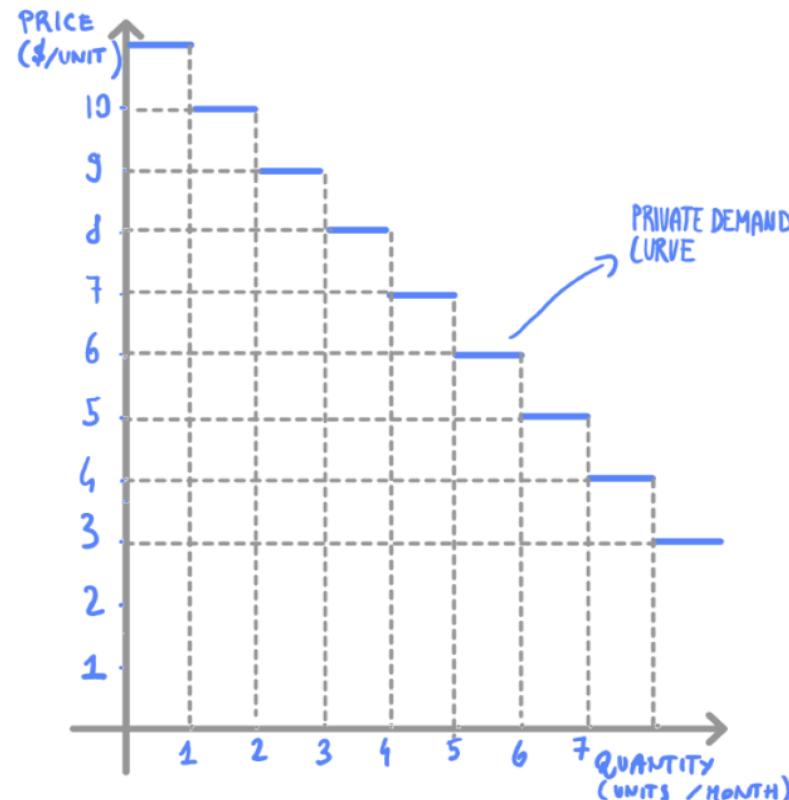
Positive Consumption Externality

Definition:

A **Positive Consumption Externality** represents a benefit accrued to someone who is not involved in the consumption of a given good.

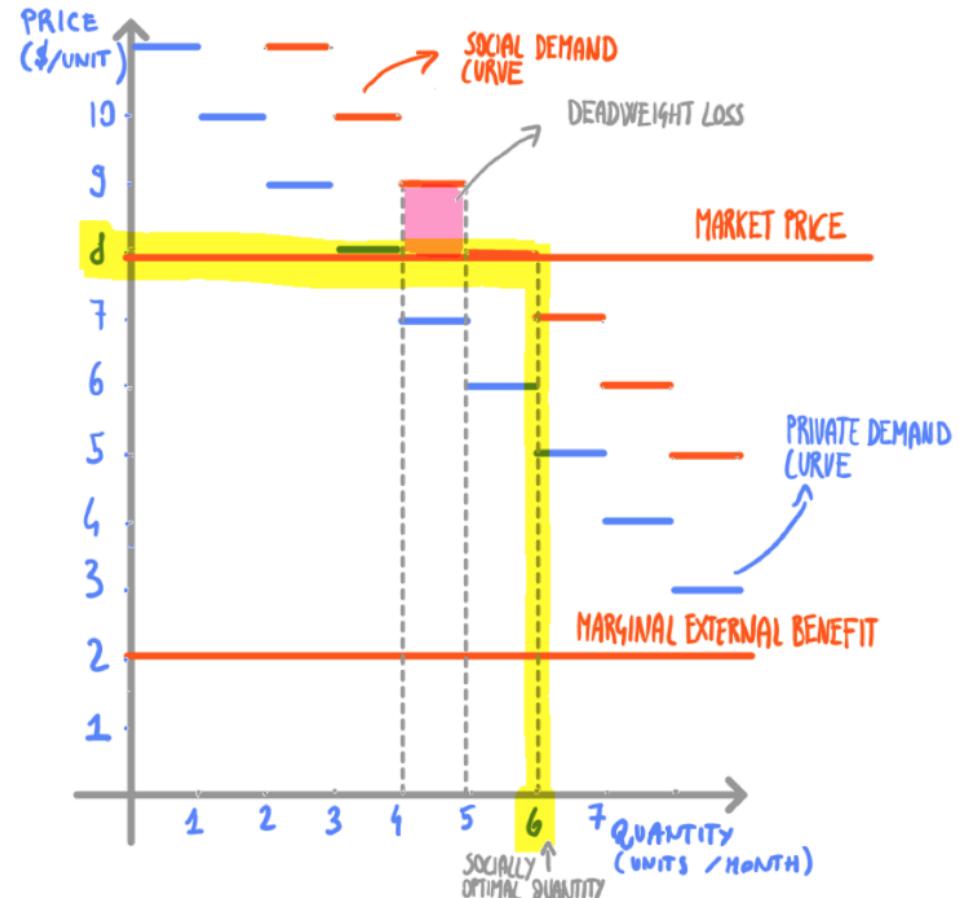
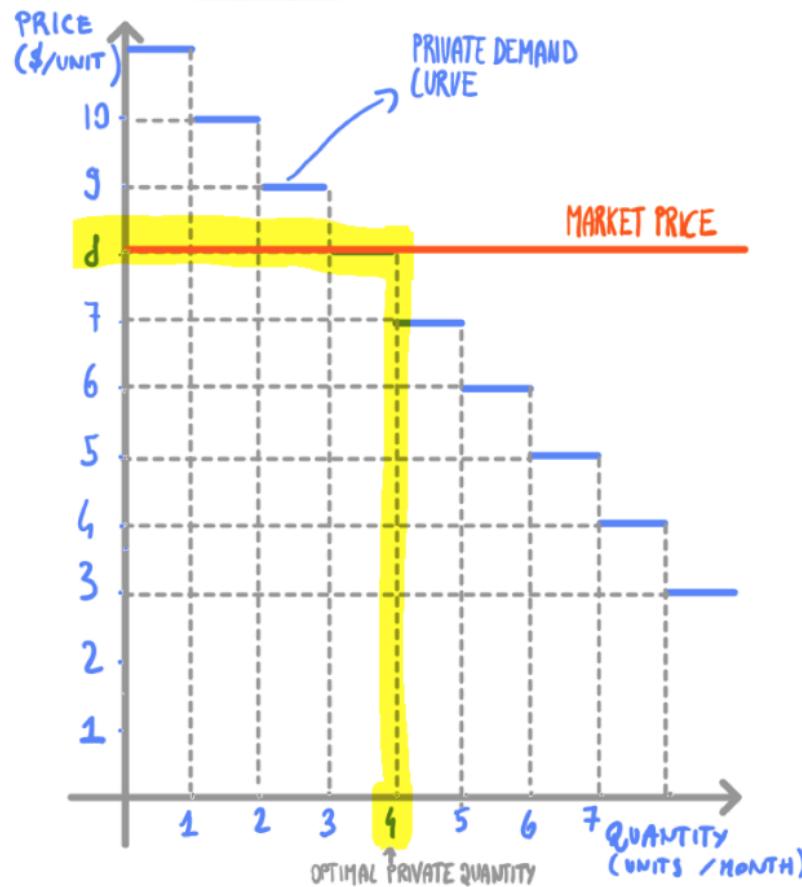
Positive Consumption Externality

Say External Marginal Benefit $MB_{ext} = \$2$



Positive Consumption Externality

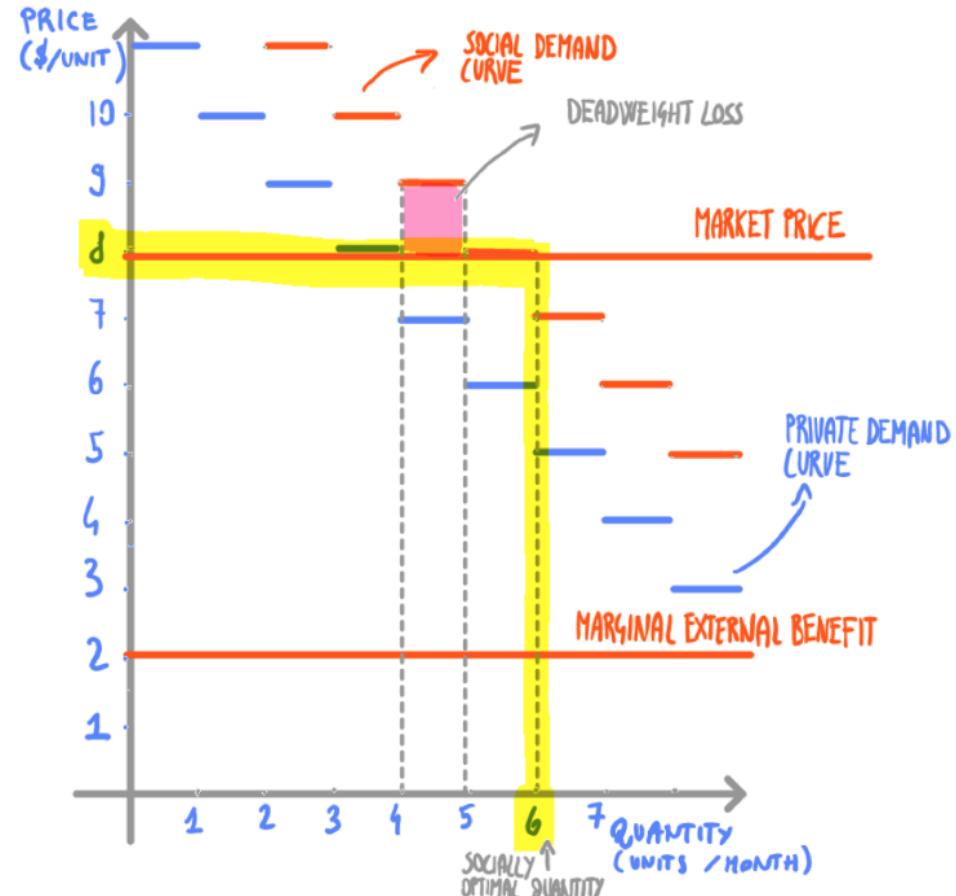
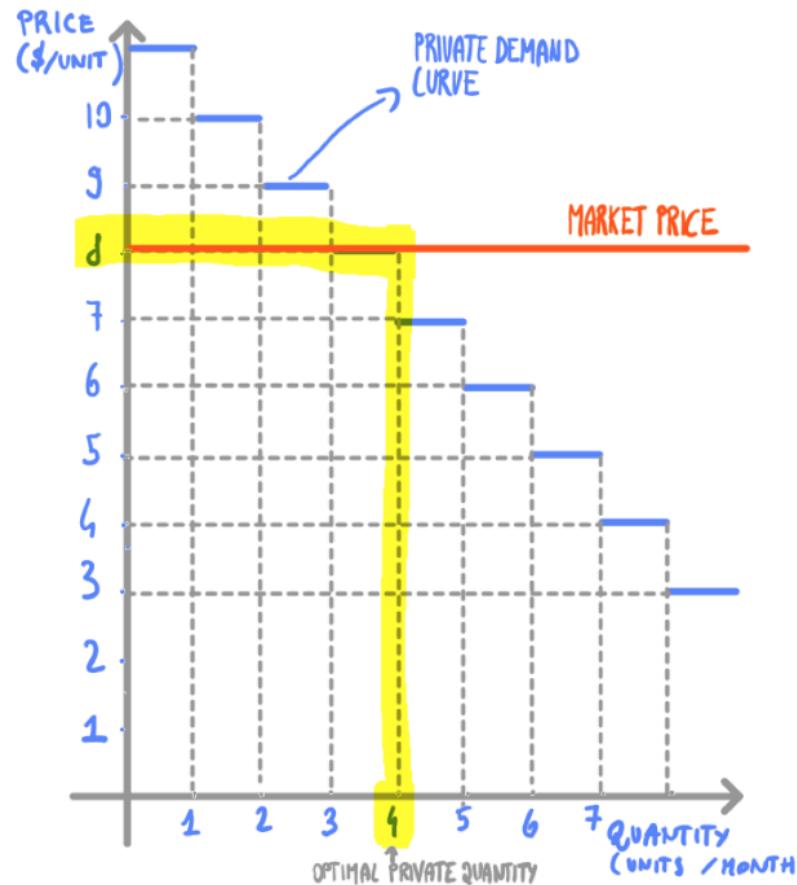
Say External Marginal Benefit = \$2, Price = \$8



$Q^*_{priv} = 4 \rightarrow MB_{social} = MB_{priv} + MB_{ext} = \$10 \rightarrow \text{doesn't MAX social surplus}$

Positive Consumption Externality

Say External Marginal Benefit = \$2, Price = \$8



How about $Q^*_{priv}=5 \rightarrow MB_{social}=\9 and $MC=\$8 \rightarrow \1 surplus for the 5th unit

How about $Q^*_{priv}=6 \rightarrow MB_{social}=\8 and $MC=\$8 \rightarrow$ Max social surplus!!!

Positive Consumption Externality

Making consumption decisions without accounting for their **external benefit** doesn't allow to max social surplus!

→ Deadweight Loss!!

- Private optimal consumption = 4 units
- Social optimal consumption = 6 units



Positive Consumption Externality

- Benji lets Maia know he likes the perfume
- Start **negotiating**:
 - Maia **offers** to consume 2 extra units (6 instead of 4) of perfume in exchange for Benji paying her \$2 per each extra unit
 - $MB_{priv - 5th\ unit} + Transfer_{Maia} = \$7 + \$2 > Price(\$8)$
 - $MB_{priv - 6th\ unit} + Transfer_{Maia} = \$6 + \$2 = Price(\$8)$ ✓
 - Benji **accepts** because the price Maia asks is exactly equal to the external benefit of consuming 2 more units

NO Government!! → Coase Theorem

Positive Consumption Externality

Coase theorem:

“If trade in an externality is possible and there are no transaction costs, bargaining will lead to an efficient outcome regardless of the initial allocation of property rights.”

Positive Consumption Externality

Some **examples**:

- *Fitness activities*
- *Vaccinations*
- *Bike to work*
- *Education*
- *Social networking*
- *Fire protection services*

Negative Production Externality

Meet Benji ☺

- Assume Benji sells hot-dogs
 - Benji incurs a Marginal Cost for producing hot-dogs
- How many hot-dogs should Benji produce?**
- $$MC_{\text{Benji}} = MB_{\text{Benji}} (= P)$$
- Assume Maia dislikes the pollution Benji produces
 - Maia incurs an External Marginal Cost from Benji's hot-dog production



How many hot-dogs should Benji produce?

$$MB_{\text{Benji}} (= P) = MC_{\text{Benji}} + MC_{\text{Maia}}$$

NEGATIVE PRODUCTION EXTERNALITY

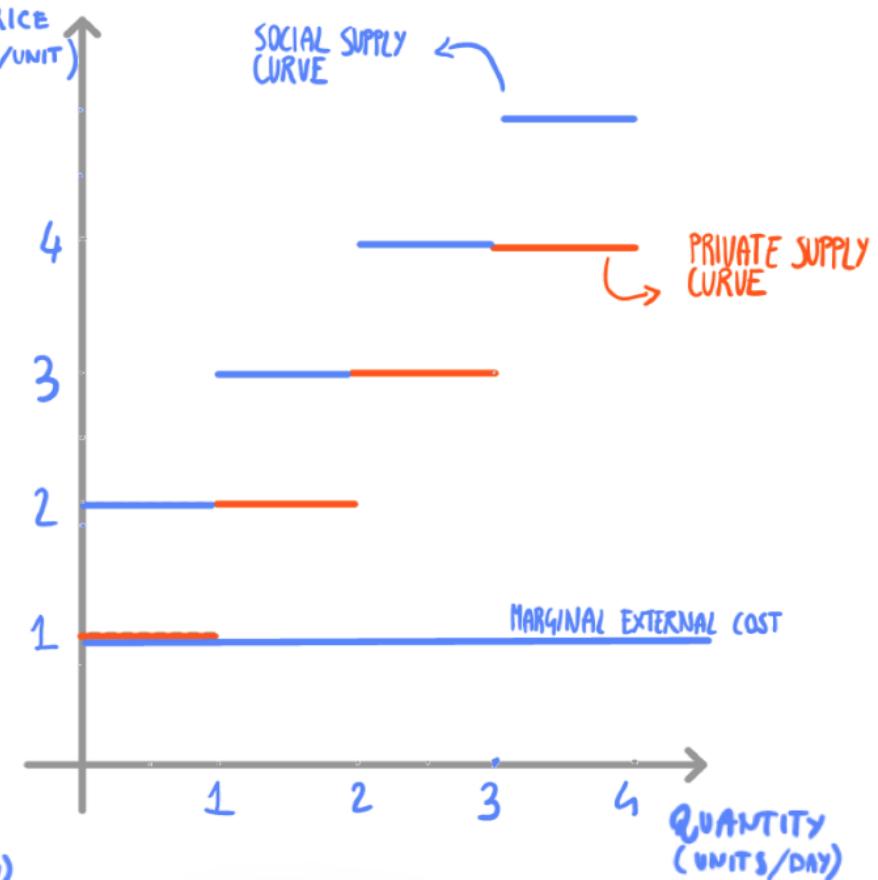
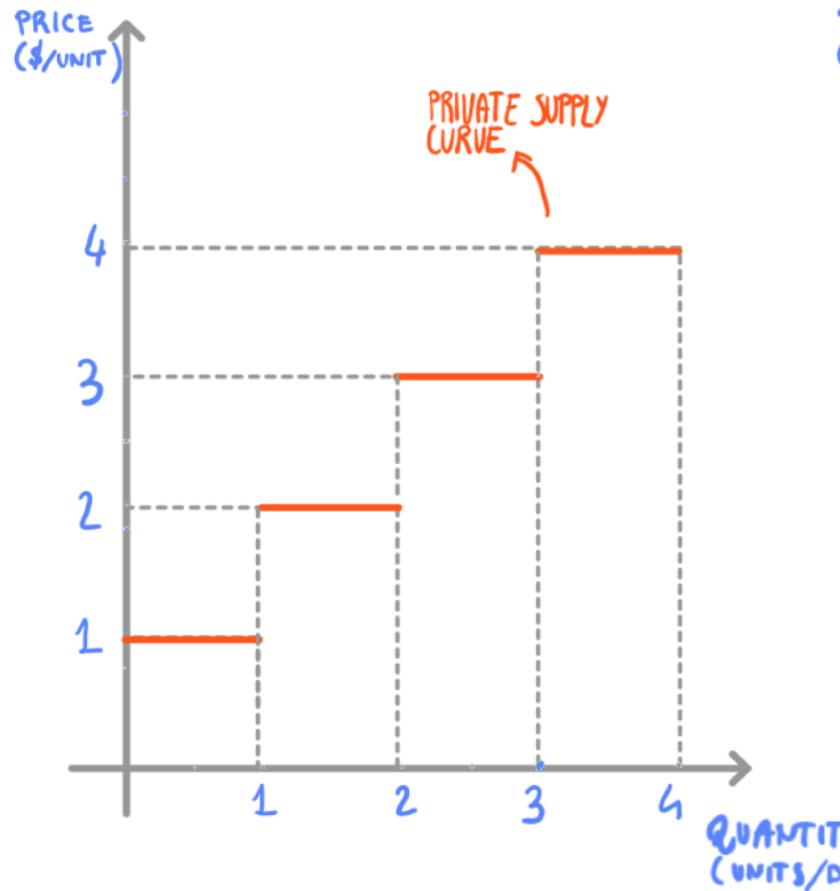
Negative Production Externality

Definition:

A **Negative Production Externality** represents a cost incurred by someone who is not involved in the production of a given good.

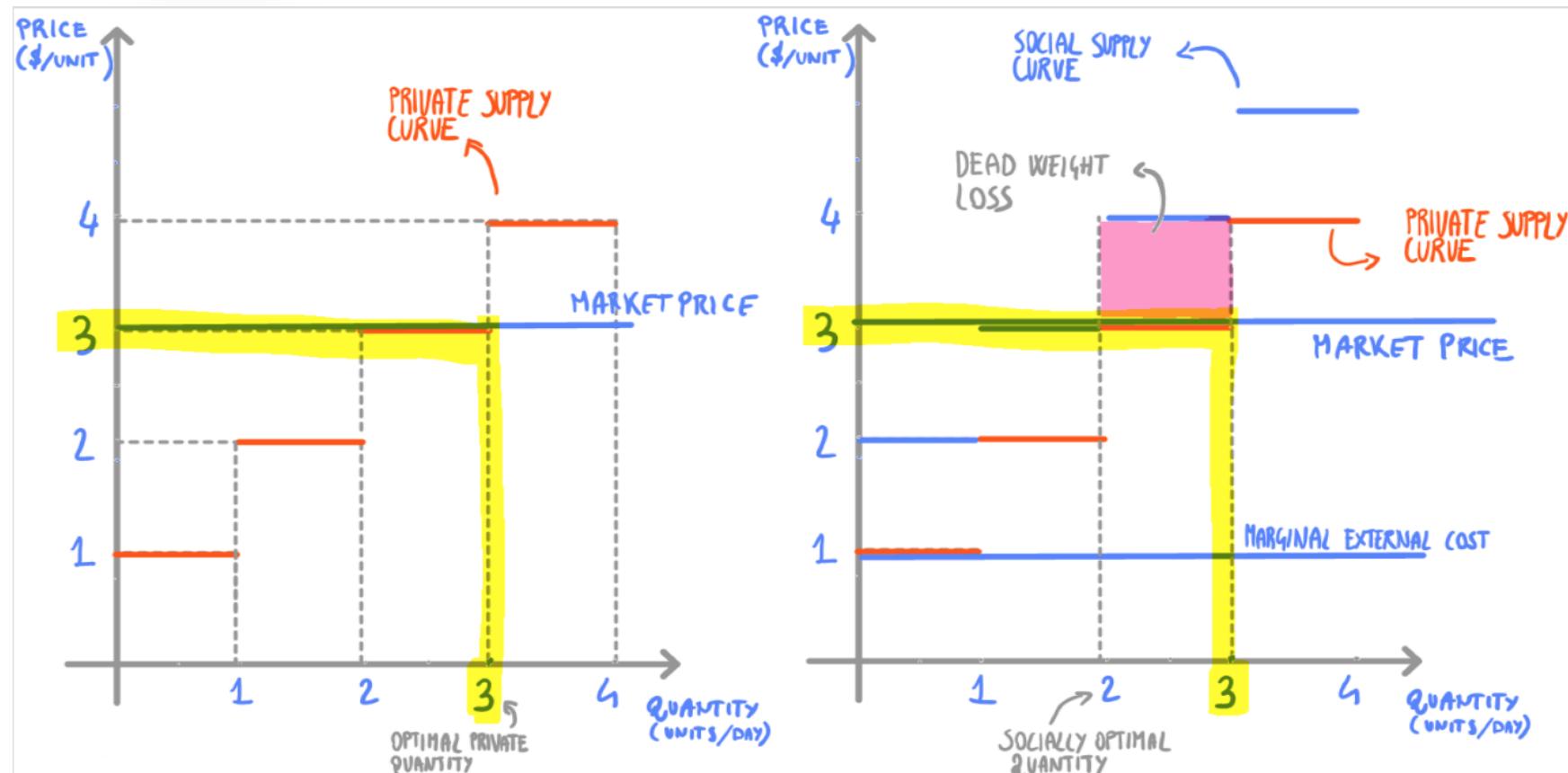
Negative Production Externality

Say External Marginal Cost $MC_{ext} = \$1$



Negative Production Externality

Say External Marginal Cost = \$1, Price = \$3



$Q^*_{priv} = 3 \rightarrow MC_{social} = MC_{priv} + MC_{ext} = \$4 \rightarrow \text{doesn't MAX social surplus } (MC_{social} = \$4)$

How about $Q^*_{priv} = 2? \rightarrow MC_{social} = \$3 \rightarrow \text{surplus is MAX! (no DWL)}$



Negative Production Externality

Making consumption decisions without accounting for their **external costs** doesn't allow to max social surplus!

→ Deadweight Loss!!

- Private optimal production = 3 units
- Social optimal production = 2 units



Negative Production Externality

- Maia lets Benji know she dislike the pollution
- Start **negotiating**:
 - Benji **offers** to decrease production by 1 unit (2 instead of 3) in exchange for Maia paying him \$1
 - Benji is strictly better off with this deal in place. The marginal benefit from the 3rd unit (\$3) minus the marginal cost (\$3) would have provided Benji with a surplus equal to \$0, which is lower than the transfer (\$1) he receives from Maia. So forgoing the 3rd unit in exchange for \$1 is a good deal for him!
 - Maia **accepts** because the price Benji asks is exactly equal to the external cost she has to incur for 1 extra hot-dog.



NO Government (again)!!

Negative Production Externality

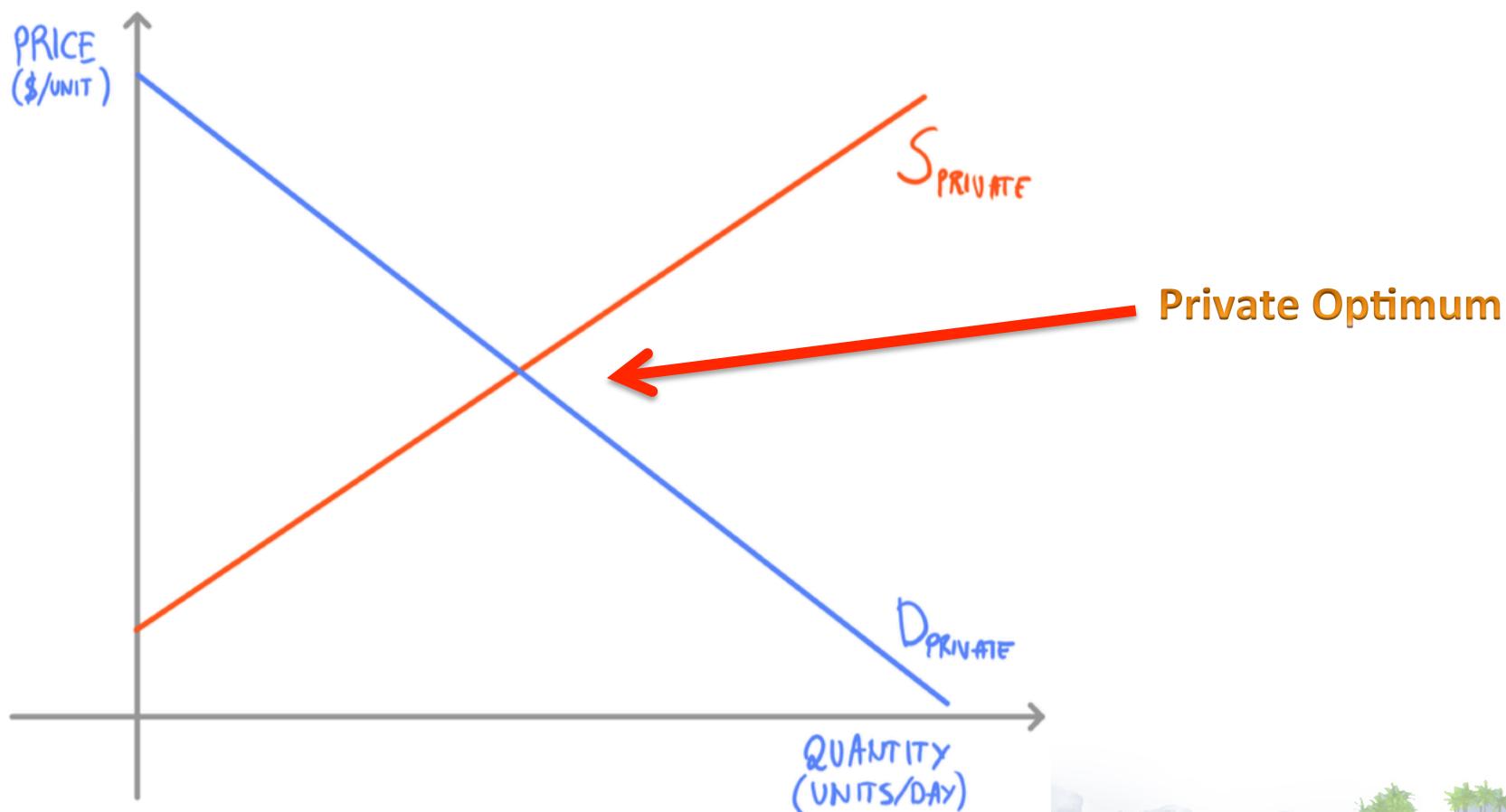
Some **examples**:

- *Harmful production activities (global warming)*
- *Excessive risk-taking*
- *Over-fishing*

Externalities in Large Markets

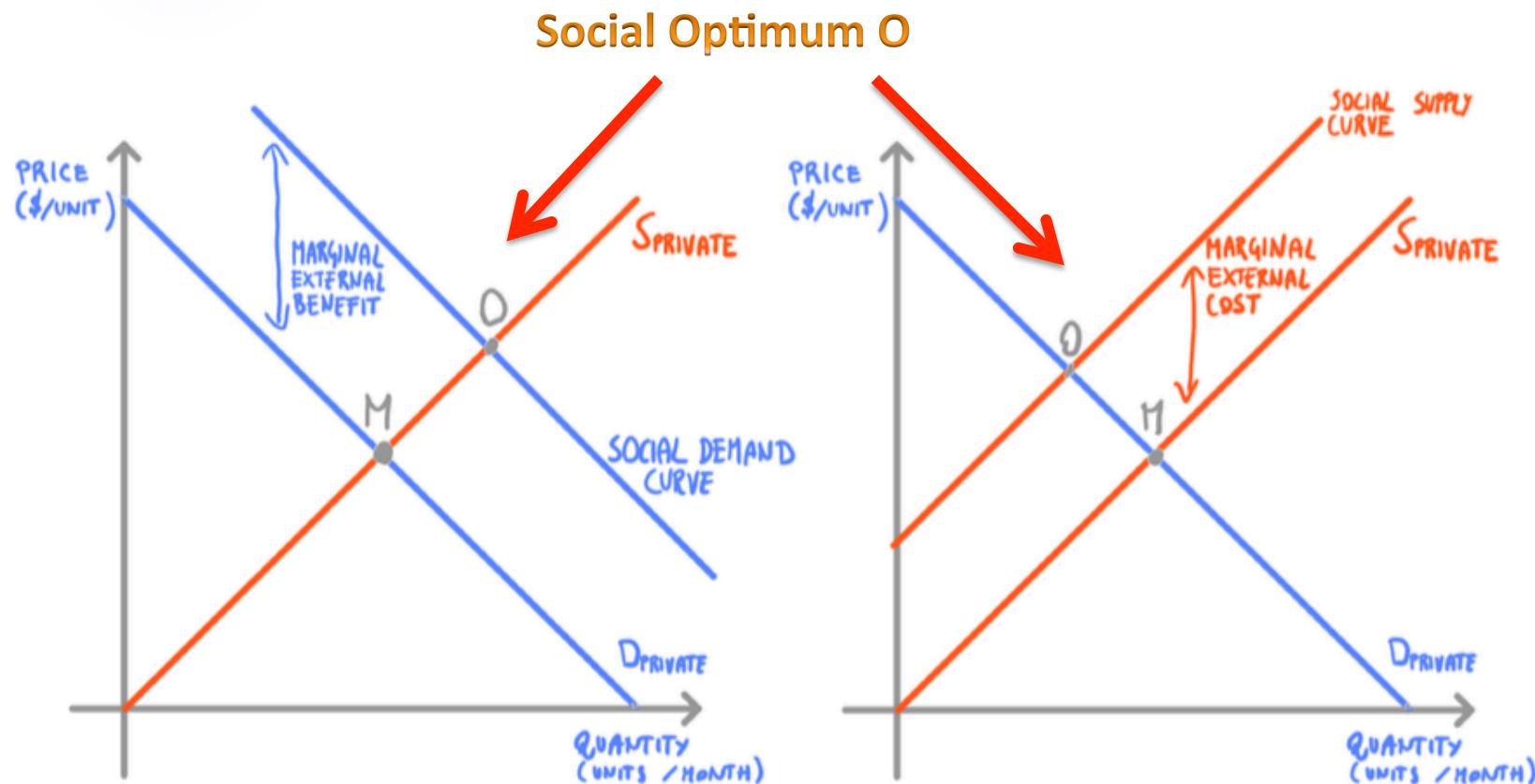
Many buyers & sellers

→ smooth *private* D & *private* S curves



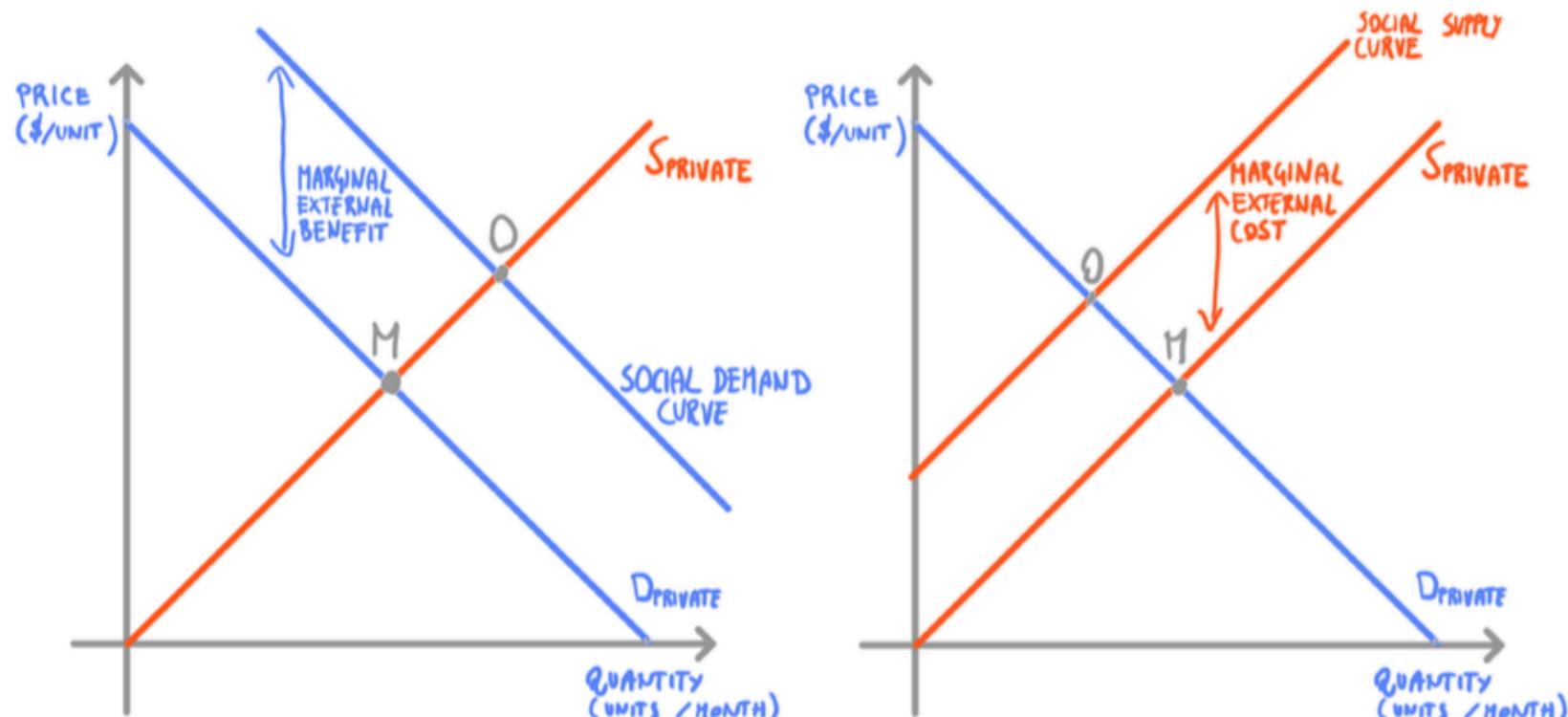
Externalities in Large Markets

Many buyers & sellers → smooth *private* D & *private* S curves
→ add externalities → smooth *social* D & *social* S curves



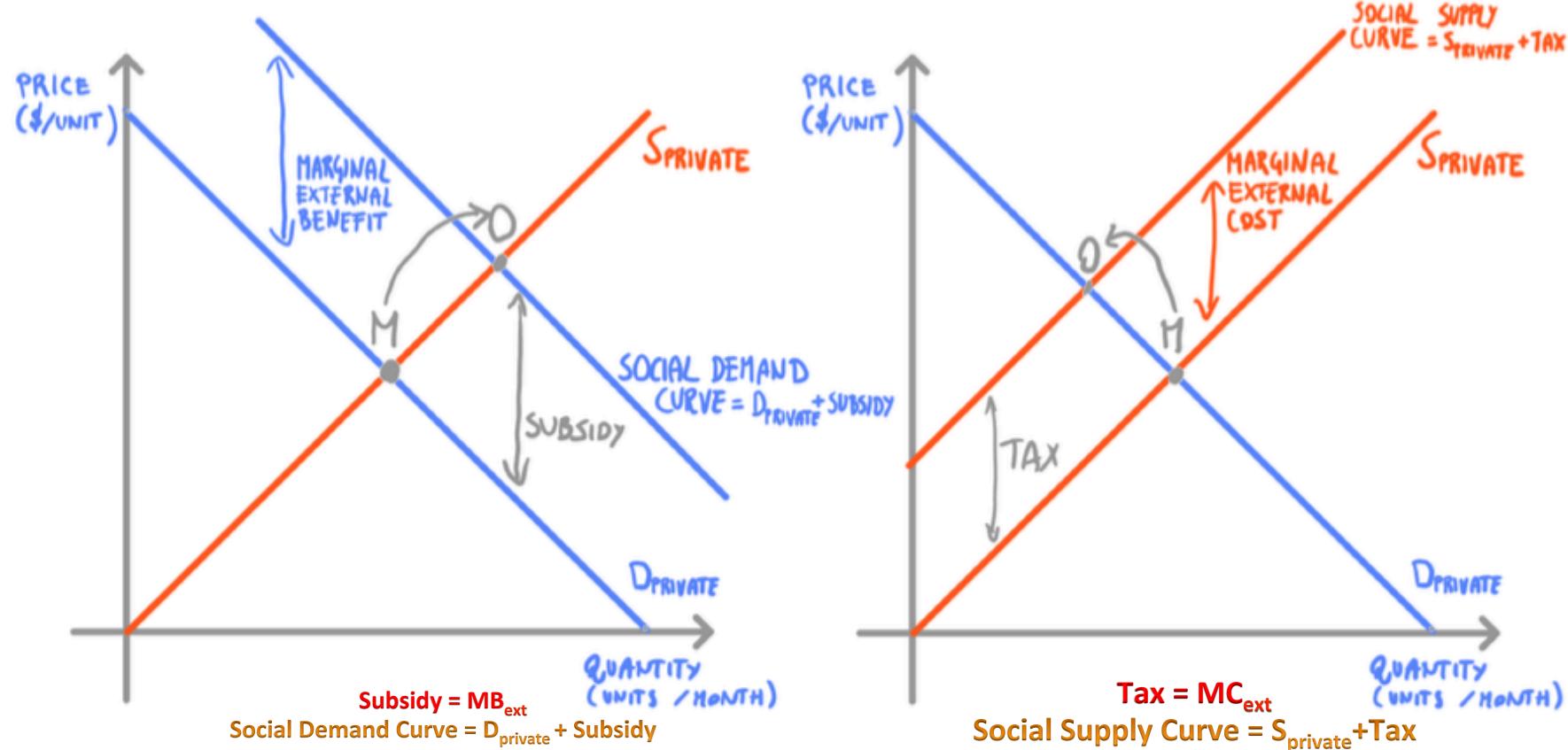
Coase conditions do not apply anymore!!!

Externalities in Large Markets



Coase conditions do not apply anymore (high transaction costs) → Government must intervene (subsidy or tax)!

Externalities in Large Markets



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Negative Consumption Externality

Definition:

A **Negative Consumption Externality** represents a cost incurred by someone who is not involved in the consumption of a given good.

Negative Consumption Externality

Some **examples**:

- *Smoking*
- *Alcohol abuse*
- *Driving*

Positive Production Externality

Definition:

A **Positive Production Externality** represents a benefit accrued to someone who is not involved in the production of a given good.

Positive Production Externality

Some **examples**:

- *Beneficial production activities*
- *New production technologies*
- *On-the-job training*