

Negative and Positive Externalities

AP Microeconomics | Unit 6 | MSC, MSB, and deadweight loss

1. A cost nobody at the table pays

Externality

A cost or a benefit that falls on a **third party**: someone who is neither the buyer nor the seller.

- **Negative** (pollution, noise): $MSC = MPC + \text{external cost}$
- **Positive** (vaccines, education): $MSB = MPB + \text{external benefit}$

MPC and MPB are the private curves: ordinary supply and demand.

2. Negative externality: too much

Example. Demand $P = 12 - Q$ (this is MPB and MSB), supply $P = Q$ (MPC). Each unit does \$4 of damage, so $MSC = Q + 4$: a curve **above** supply.

- Market: $12 - Q = Q$, so $Q = 6$, $P = \$6$.
- Socially optimal: $MSB = MSC$, $12 - Q = Q + 4$, so $Q = 4$.
- The market **overproduces**. $DWL = \frac{1}{2} \times 4 \times (6 - 4) = \$4$.

3. Positive externality: too little

Example. Supply $P = Q$ (MPC and MSC), demand $P = 10 - Q$ (MPB). Each unit gives \$4 of benefit to others, so $MSB = 14 - Q$: a curve **above** demand.

- Market: $10 - Q = Q$, so $Q = 5$, $P = \$5$.
- Socially optimal: $14 - Q = Q$, so $Q = 7$.
- The market **underproduces**. $DWL = \frac{1}{2} \times 4 \times (7 - 5) = \$4$.

4. One method for both graphs

Three steps

1. **Market quantity:** where the *private* curves cross ($MPB = MPC$).
2. **Optimal quantity:** where the *social* curves cross ($MSB = MSC$).
3. **Deadweight loss:** the triangle between those two quantities, pointing at the optimal one.

	negative externality	positive externality
extra curve	MSC above supply	MSB above demand
market output	too much	too little

Where students lose points

1. Finding the market quantity with a social curve: use supply and demand.
2. Putting the extra curve on the wrong side.
3. The triangle in the wrong place: it lies between the two quantities.
4. Reversing the result: negative means too much, positive means too little.
5. Unlabeled curves: write MPC, MSC, MPB, MSB.

Now practise it

Theory sticks once you use it. On **sad-academy.com** you'll find practice questions for this exact subtopic in the AP format, and an AI that grades your free-response answers against the scoring guidelines, the way an AP reader would.

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