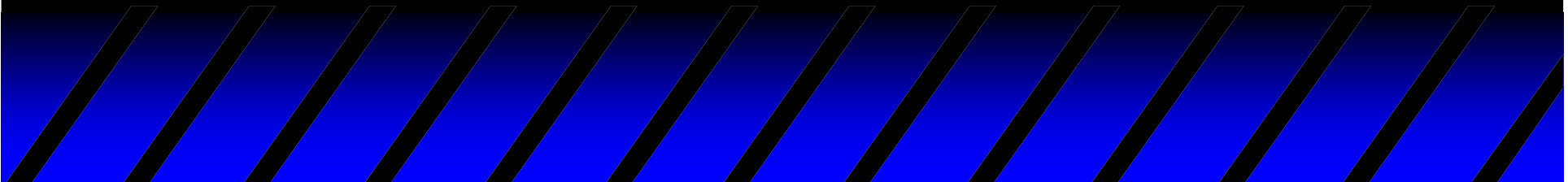
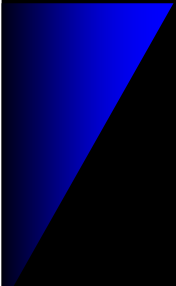


Microeconomics

Lecture 8



Externalities

- ◆ An **externality** is a cost or a benefit imposed upon someone by actions taken by others. The cost or benefit is thus generated externally to that somebody.
- ◆ An externally imposed benefit is a **positive externality**.
- ◆ An externally imposed cost is a **negative externality**.

Examples of Negative Externalities

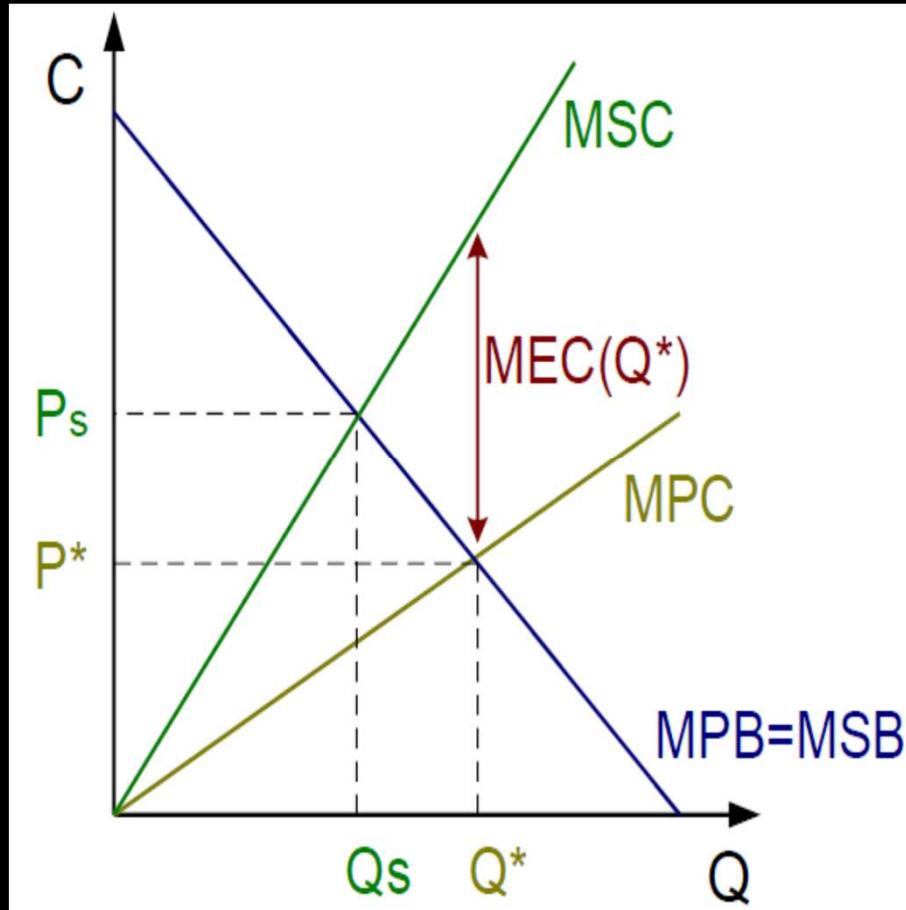
- ◆ **Air pollution.**
- ◆ **Water pollution.**
- ◆ **Loud parties next door.**
- ◆ **Traffic congestion.**
- ◆ **Second-hand cigarette smoke.**
- ◆ **Increased insurance premiums due to alcohol or tobacco consumption.**

Examples of Positive Externalities

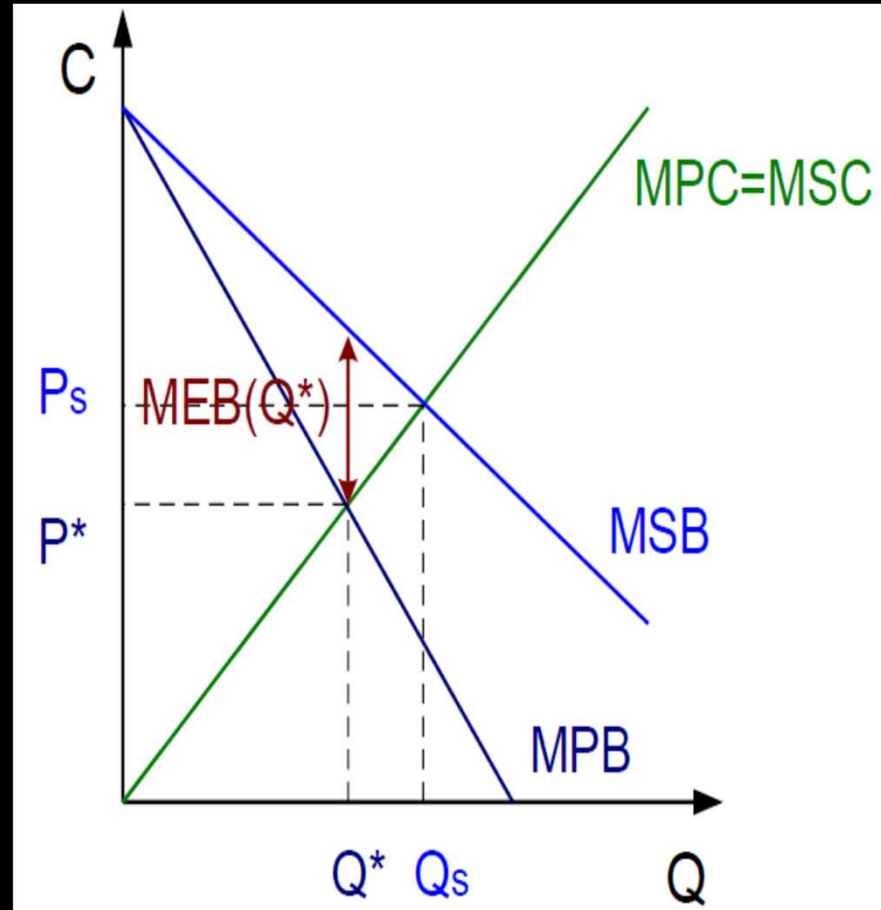
- ◆ **A well-maintained property next door that raises the market value of your property.**
- ◆ **A pleasant cologne or scent worn by the person seated next to you.**
- ◆ **Improved driving habits that reduce accident risks.**
- ◆ **A scientific advance.**

Externalities

costs



benefits



$$\text{MEC} = \text{MSC} - \text{MPC}$$

$$\text{MEB} = \text{MSB} - \text{MPB}$$

Externalities and Efficiency

- ◆ Crucially, an externality impacts a **third party**; i.e. somebody who is not a participant in the activity that produces the external cost or benefit.
- ◆ Externalities cause Pareto inefficiency; typically
 - too much scarce resource is allocated to an activity which causes a negative externality
 - too little resource is allocated to an activity which causes a positive externality.

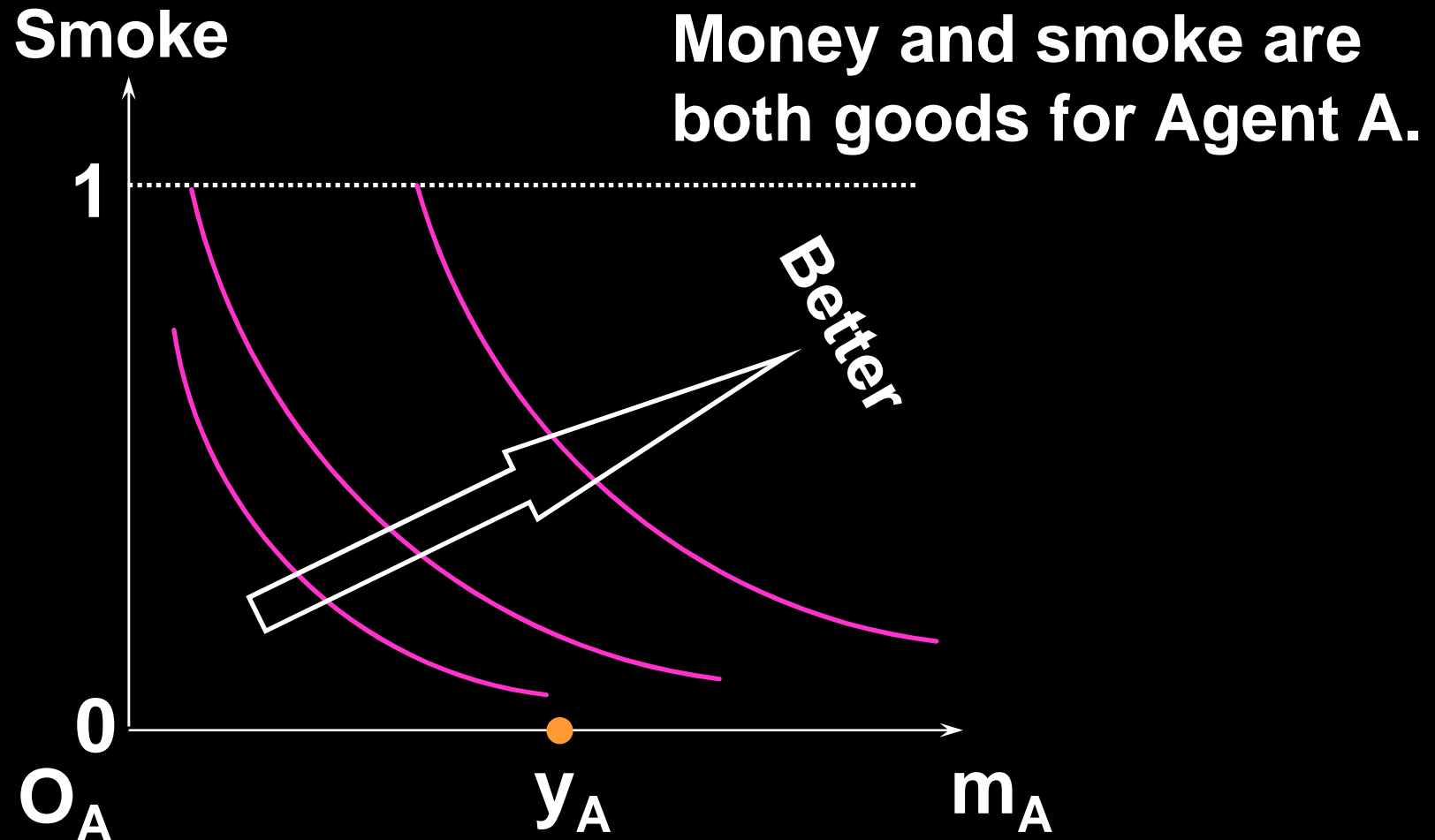
Inefficiency & Negative Externalities

- ◆ **Consider two agents, A and B, and two commodities, money and smoke.**
- ◆ **Both smoke and money are goods for Agent A.**
- ◆ **Money is a good and smoke is a bad for Agent B.**
- ◆ **Smoke is a purely public commodity.**

Inefficiency & Negative Externalities

- ◆ Agent A is endowed with $\$y_A$.
- ◆ Agent B is endowed with $\$y_B$.
- ◆ Smoke intensity is measured on a scale from 0 (no smoke) to 1 (maximum concentration).

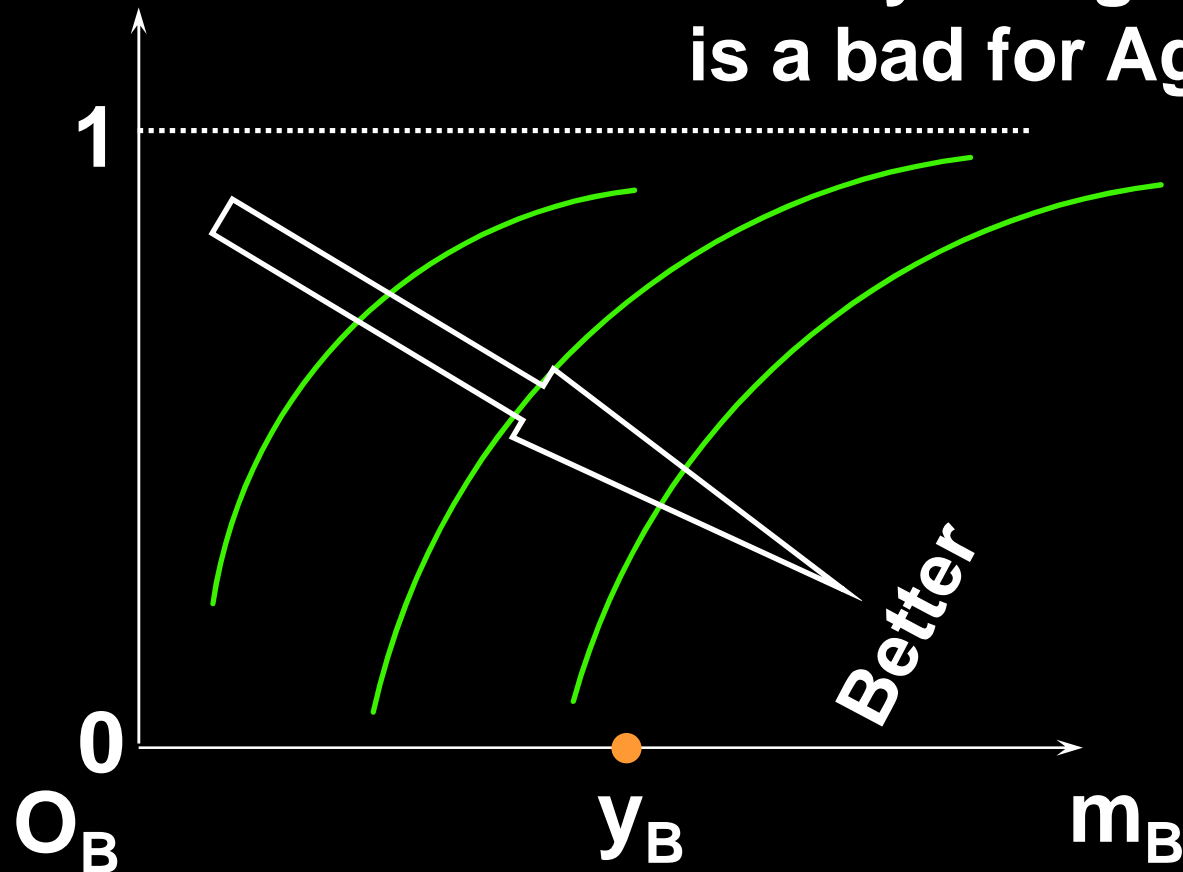
Inefficiency & Negative Externalities



Inefficiency & Negative Externalities

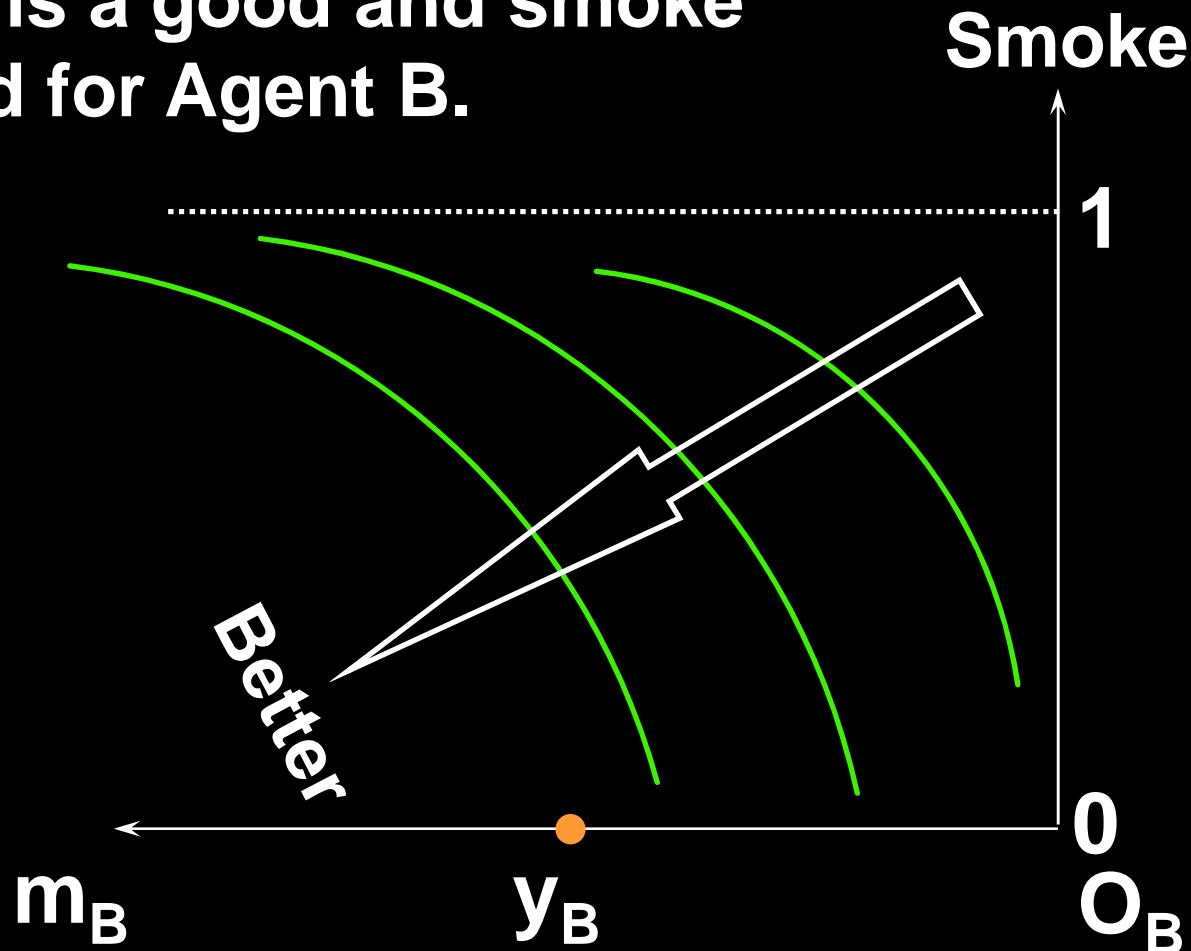
Smoke

Money is a good and smoke is a bad for Agent B.



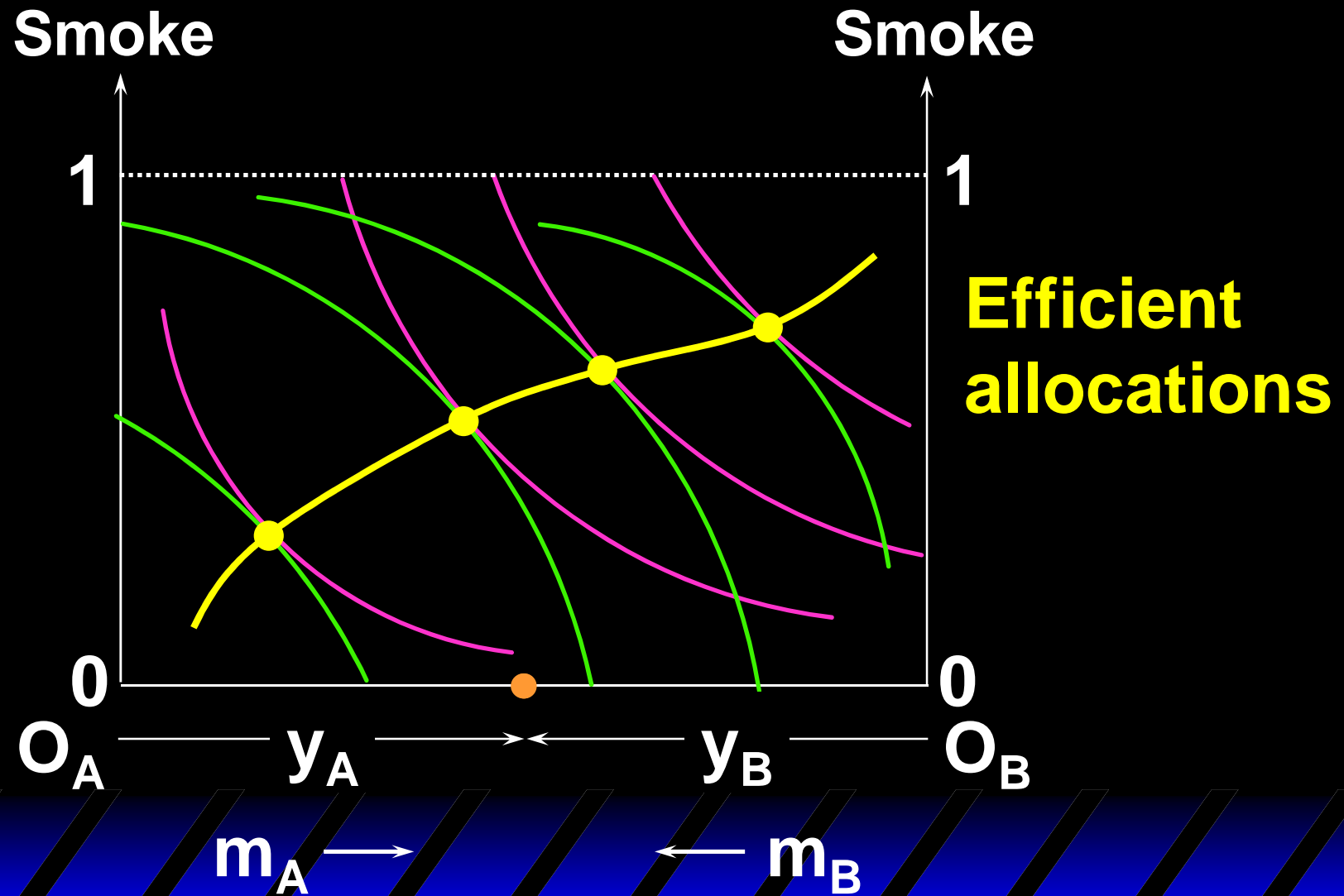
Inefficiency & Negative Externalities

Money is a good and smoke is a bad for Agent B.



◆ What are the efficient allocations of smoke and money?

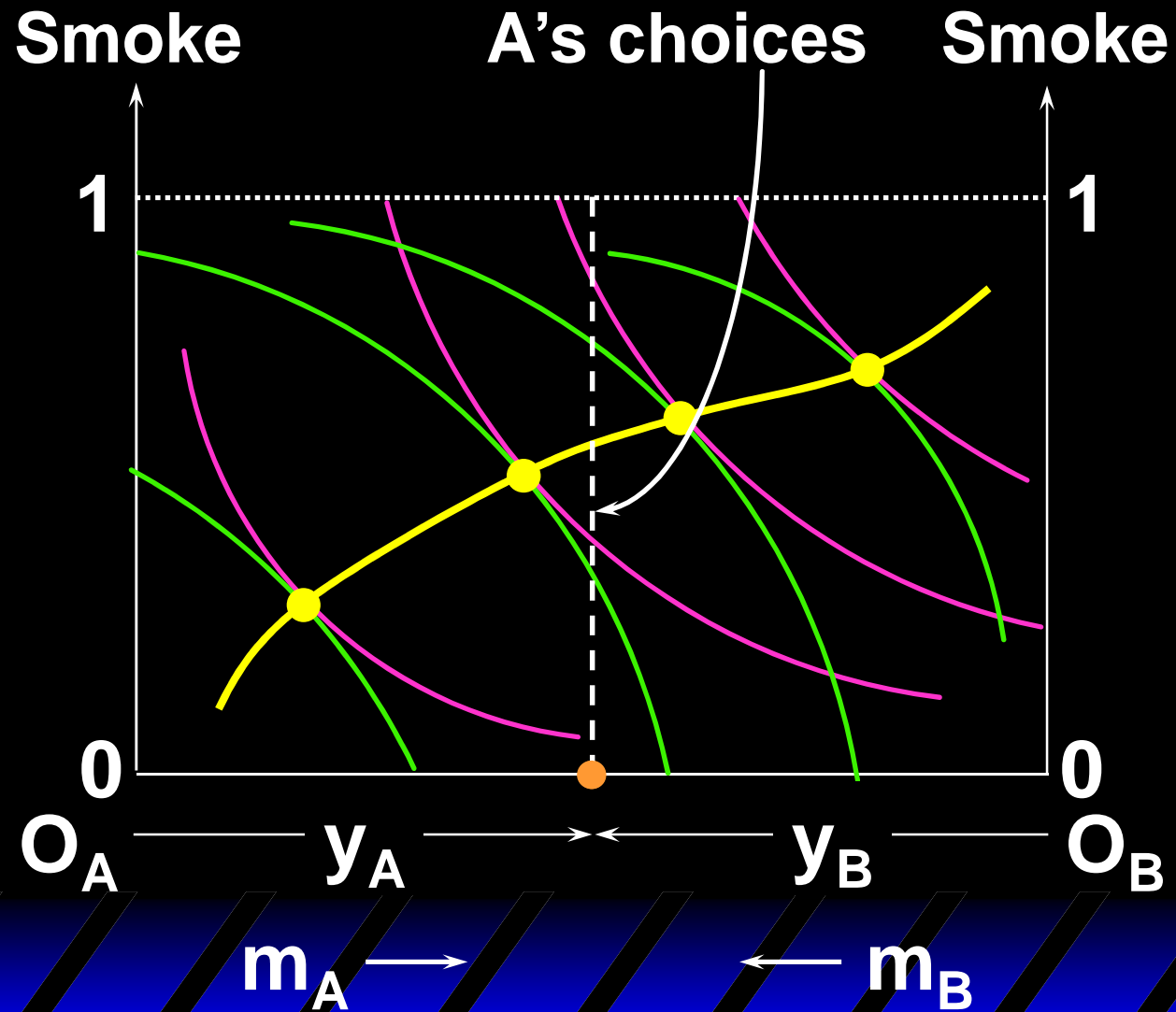
Inefficiency & Negative Externalities



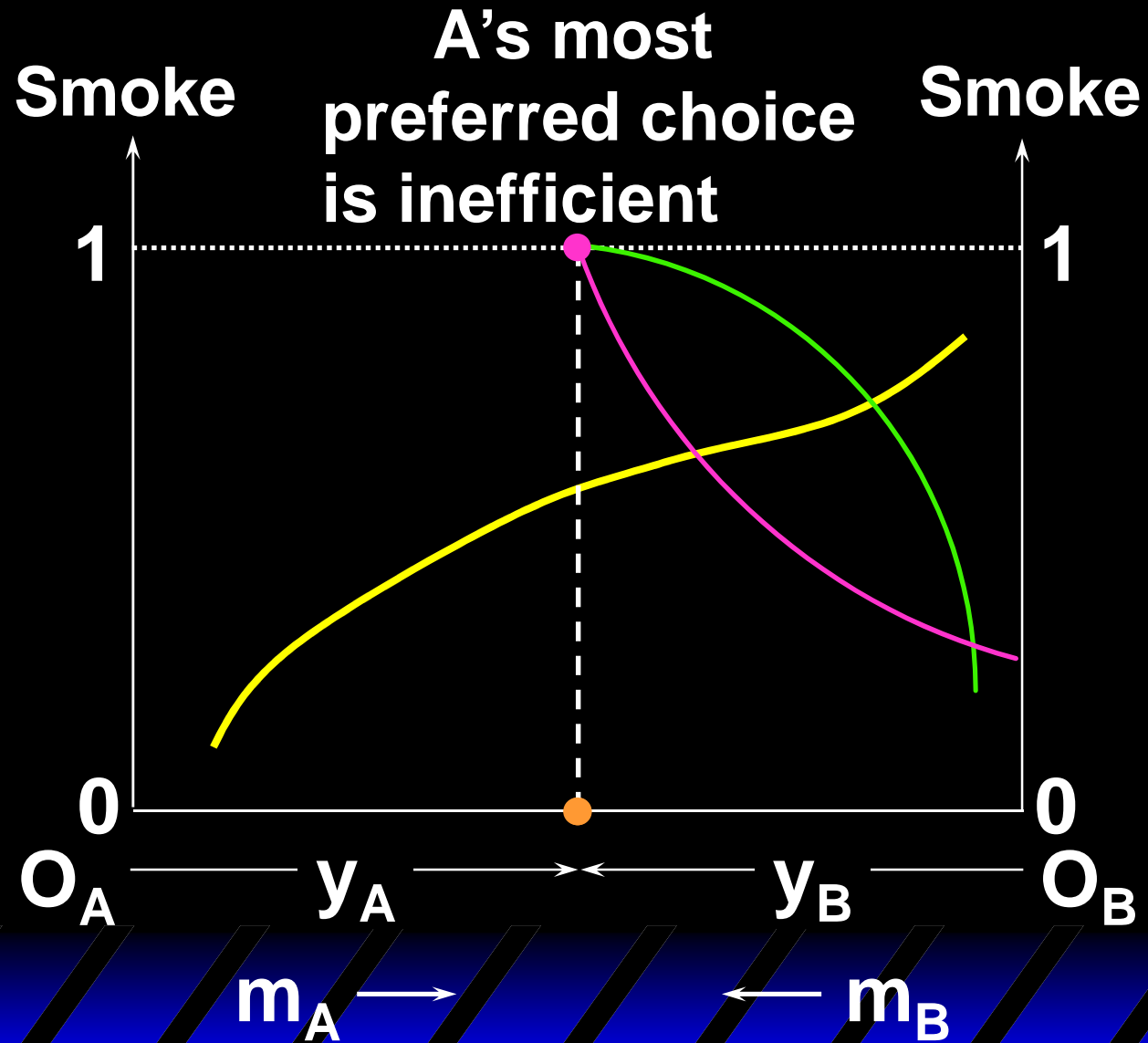
Inefficiency & Negative Externalities

- ◆ **Suppose there is no means by which money can be exchanged for changes in smoke level.**
- ◆ **What then is Agent A's most preferred allocation?**
- ◆ **Is this allocation efficient?**

Inefficiency & Negative Externalities



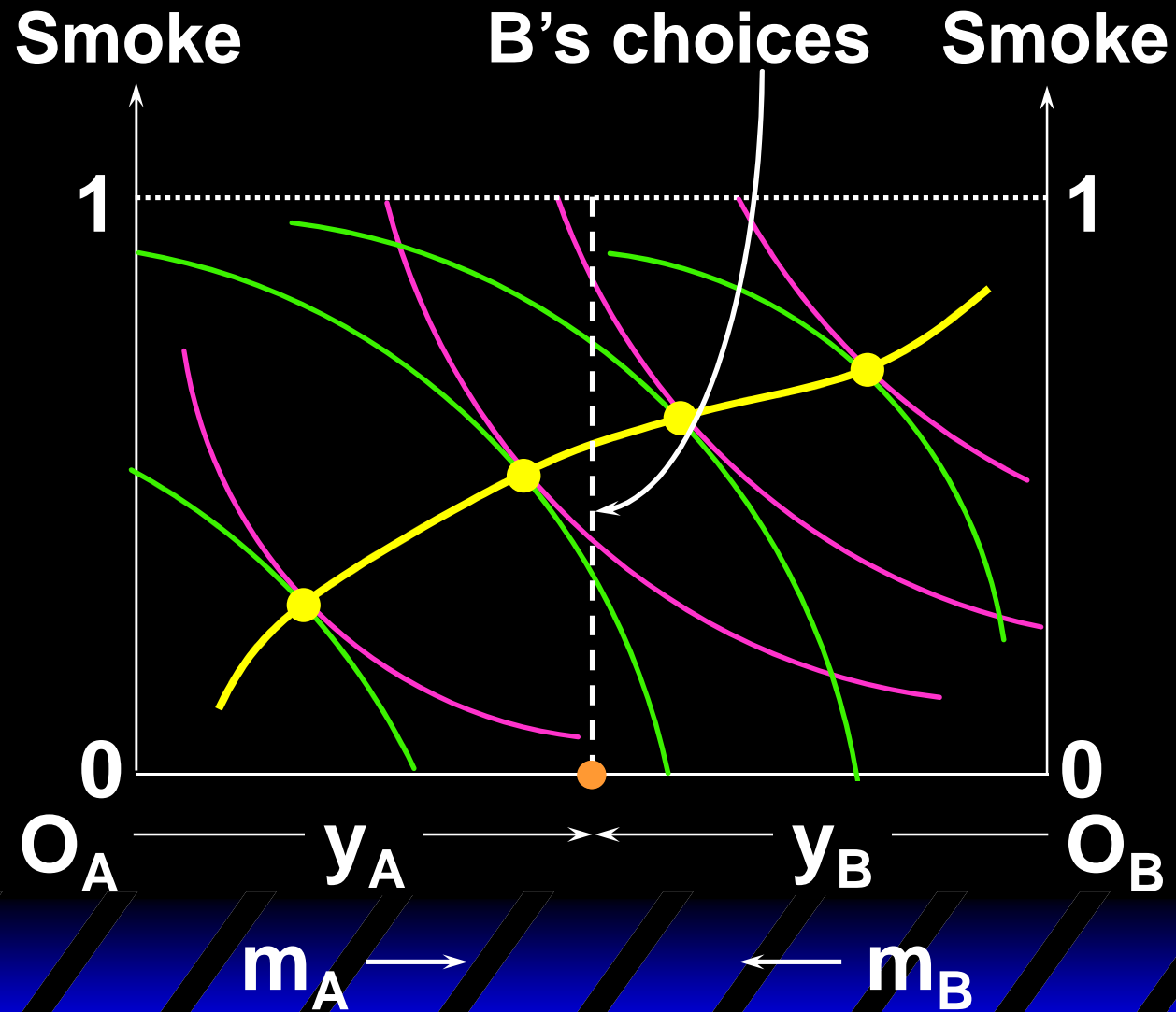
Inefficiency & Negative Externalities



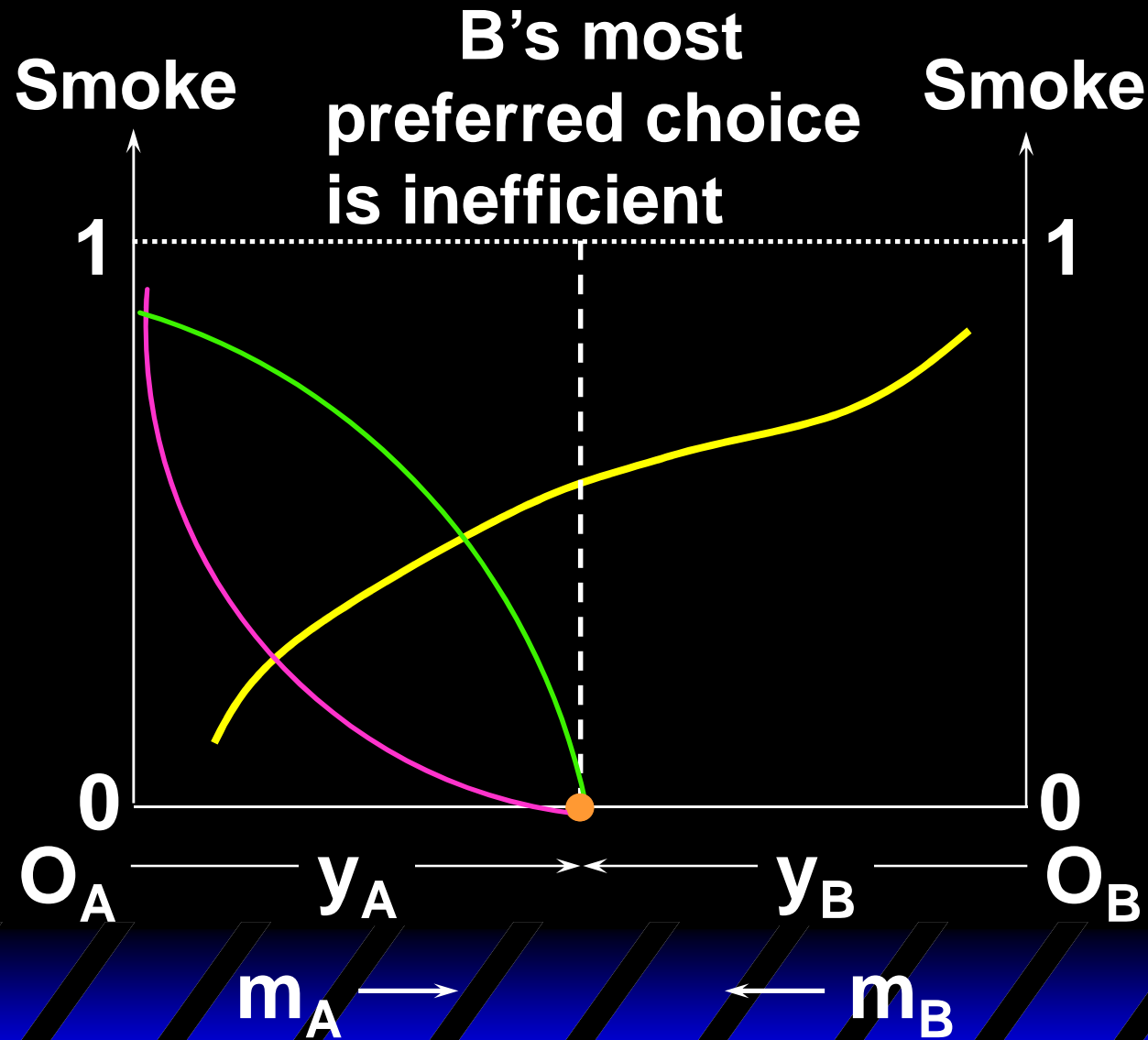
Inefficiency & Negative Externalities

- ◆ Continue to suppose there is no means by which money can be exchanged for changes in smoke level.
- ◆ What is Agent B's most preferred allocation?
- ◆ Is this allocation efficient?

Inefficiency & Negative Externalities



Inefficiency & Negative Externalities



Inefficiency & Negative Externalities

- ◆ So if A and B cannot trade money for changes in smoke intensity, then the outcome is inefficient.
- ◆ Either there is too much smoke (A's most preferred choice) or there is too little smoke (B's choice).

Pecuniary externalities

- ◆ They arise when factor or good prices change in the economy.
- ◆ This does not shift the production or utility function.
- ◆ They do not lead to erroneous market allocation in a purely competitive market.
- ◆ **They are not externalities.**