

TOPIC 16: EXTERNALITIES & MARKET FAILURE

I. Market failure

- a. A *market failure* is when private decision-making fails to achieve an efficient allocation of scarce resources.
- b. Sometimes people think of market failure as when “the market fails to generate the result I want.”
 - i. Of course, such sloppy understanding is usually not so obvious. For example, some would call the existence of poor people or the sensationalism of the news a market failure, but they’re not.
 - ii. It’s tempting to call “food deserts” market failures, because locals say they want access to healthy food options, but nothing in their neighborhood’s available. The question then becomes: why don’t stores give people what they want? It turns out that stores aren’t in such neighborhoods largely due to high crime rates. Higher prices could compensate stores for thefts, but locals are unwilling to pay higher prices—why food deserts tend to be in poor neighborhoods. In other words, it’s efficient to *not* have grocery stores here. It’s too expensive to operate and not enough people are willing to pay for it.
- c. When do market failures happen? Asymmetric information and commons resources are a source of market failure, as are monopolies (which we’ll talk about later) and externalities (which we’ll talk about now).

II. Externalities

- a. An *externality* is a cost or benefit imposed on those who did not play a role in the decision making.
- b. A *positive externality* is a benefit imposed on others. Examples are people with good fashion sense, beautiful buildings, crop pollination from the bees on a honey farm, and some gains from technology.¹
 - i. Look back to the definition of externality: the word “imposed” is very important. It means that acts of charity are not positive externalities.
 - ii. Remember, an externality must be *external* to the participants of the transaction. That’s why it creates inefficiency: how much

¹ Economist William Nordhaus estimates that inventors and innovators only capture about 2-2.5% of the benefits of their innovations; the rest go to society.

is produced considers only some of the benefits of the good or service.

- iii. A home may have a front yard full of flowers. The homeowner maintains it because they like the flowers. Passerbys like the flowers, too; if the homeowner fully cared about strangers' enjoyment, their joy would be incorporated into the owner's decisions on how much to work on it to make it look nice. But folks typically don't care that much about strangers' opinions and there's a positive externality when the flowers bloom.
- iv. In contrast, Montgomery College cares a great deal what everyone thinks about its grounds. There's no positive externality to the flowers on campus; your joy is something the college considered when determining how many to plant and how well it's maintained.
- c. A *negative externality* is a cost imposed on others. Examples include people with bad fashion sense, ugly buildings, crying babies, and pollution.
- d. Because of how benefits and costs are distributed, activities with positive externalities are underused and those with negative externalities are overused, each creating deadweight loss.

III. Complications

- a. Is not creating a negative externality a kind of positive externality?
 - i. ***Sort of.*** Biking results in less pollution. Getting vaccinated prevents the spread of disease. These activities certainly benefit everyone, relatively speaking.
 - ii. What's tricky is that if people didn't bike, they might walk or not take the trip at all, so to call "biking" specifically a positive externality is strange. Declaring one specific way to reduce a negative externality as a positive externality is problematic when there are other ways to reduce the negative externality.
 - iii. Still, some people might have otherwise drove but the idea that biking is a positive externality is controversial because economists tend to focus on the direct effects of the activity, not the indirect effects. There's nothing inherent about biking that makes it good for strangers.
 - iv. You get weird consequences when you mix these two up. For example, the U.S. subsidized aviation fuel made from used cooking oil (instead of petroleum) to reduce their carbon footprint. As a result, used cooking oil became quite valuable on the international market, so valuable that Malaysians

produced palm oil, intentionally mislabeling it to sell as used cooking oil. In other words, the scheme incentivized the destruction of rainforest to make jet fuel. Whoops!

- v. Vaccinations are notably different—there really isn't another way to do what vaccinations accomplish and this function of disease reduction is a direct effect of the vaccine. It's the entire point of having the vaccine! There's thus a much stronger case that vaccines are a positive externality compared to biking.

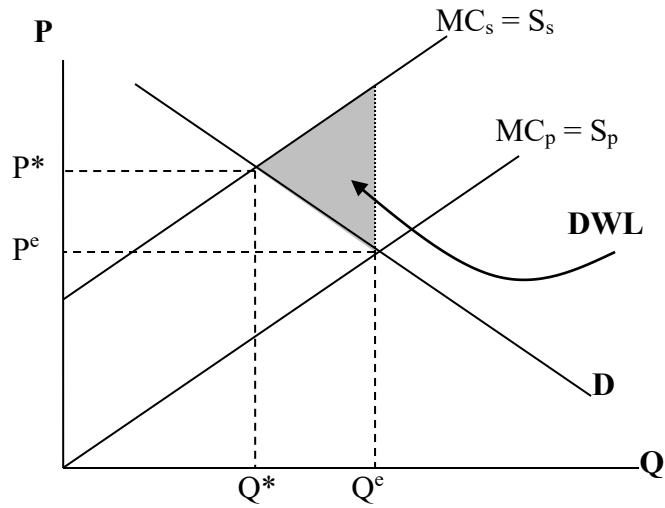
b. Is opening a rival store a negative externality?

- i. ***Not really.*** It's certainly true that new entrants hurt established businesses and existing workers. It might be tempting to scream "externality!" whenever someone "takes your job" or "steals your customers."
- ii. But economists draw a distinction between "technical" and "pecuniary" negative externalities. Technical externalities involve how much can be produced holding the input usage (as in the quantity, not the cost) constant. This has been our focus thus far. Pecuniary externalities relate to money—the wage the worker gets falls or the profit of the firm decreases.²
- iii. Unlike technical externalities, pecuniary externalities don't result in the misallocation of scarce resources. This is a critical point—the whole problem with externalities is that they create a market failure. But, without the ability to impose pecuniary losses on industry incumbents, the competitive process that leads to efficiency *would not work*.

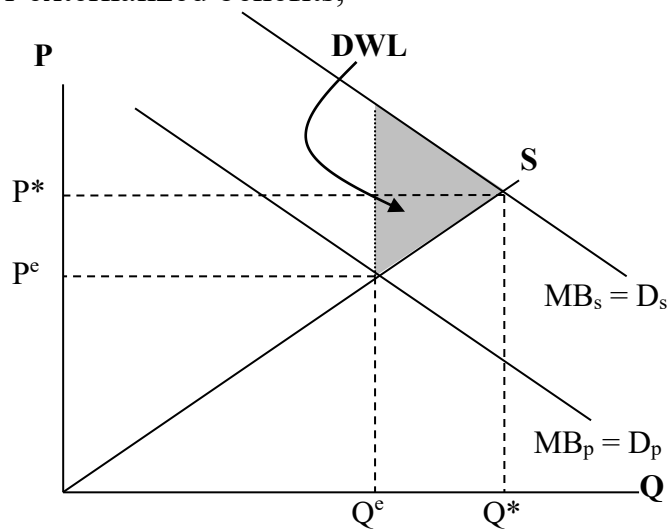
IV. Formalization

- a. For externalized costs,

² See Scitovsky (1954) and Holcombe and Sobel (2001) for more information.



- i. The DWL is there because we *are* producing when $MB < MC$.
- b. And for externalized benefits,



- i. The DWL is there because we *are not* producing when $MB > MC$.