Positive and Negative Externalities

A-LEVEL & IB ECONOMICS

Lesson Structure

- Private, External and Social Costs/Benefits
- Externalities and Market Failure
  - Negative Production Externality
  - Negative Consumption Externality (not for Edexcel)
  - Positive Production Externality (not for Edexcel)
  - Positive Consumption Externality
- Government Intervention for Externalities
  - Taxes
  - Subsidies
  - Regulations

Oil Spills EVERYWHERE!

Qurious Education

GREENPEACE

STORY · Nature · #Oil

Oil is leaking all over the world

by Rebecca Field · 8 September 2020 | 0 Comments

National Geographic

Ten years later, BP oil spill continues to harm wildlife—especially dolphins

New Orleans, LouisianaOn April 20, 2010, an explosion at the BP Deepwater Horizon oil rig released over 130 million gallons of crude oil into ...

17 Apr 2020

BBC News

Why the Mauritius oil spill is so serious

The location of the Mauritian oil spill means the environmental consequences could be long-lasting.

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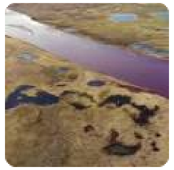
Sky News

Russia declares state of emergency after major Arctic Circle oil spill

Russia declares state of emergency after major Arctic Circle oil spill. Experts claim the water system will take "decades to recover" after 20,000 ...

4 Jun 2020



Reuters

Venezuela coast could take half a century to recover from oil spill, researcher says

Independent researchers and opposition lawmakers have said the spill likely originated from the El Palito oil refinery in nearby Carabobo state, ...

3 weeks ago

BBC News

Yemen: Decaying oil tanker in Red Sea threatens disaster

As well as devastating marine life in the Red Sea, an oil spill could destroy the livelihoods of people who depend on the area for fishing.

15 Jul 2020

This is still bad even though oil was very cheap earlier this year...

Oil Spills as an Externality

If the leakage is from an oil tanker, the producer will be the oil exploration company, and the consumer will be the oil refinery. However, many third parties are adversely affected in an oil spill (e.g. fishing & tourism industries, wildlife seers), which oil companies may not have to be responsible for.

A third party is defined as an individual or organisation that is not involved within the transaction of the good/service.

An externality occurs when consumption or production of a good has a positive or negative effect on 3rd parties.

Oil Spills as an Externality

This means the actual social cost of producing oil is much higher than the private cost of extraction for the oil exploration company. Hence, oil exploration companies tend to overproduce oil despite society may prefer for them to extract less, causing a negative production externality.

Marginal social cost (MSC) is the total cost society incurs from producing the next unit of the good. This includes the private cost of producing the oil.

Marginal private cost (MPC) is the cost a firm incurs from producing the next unit of the good. It is the cost of extracting the oil in this case.

Negative Production Externalities

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Some other types of negative externalities…

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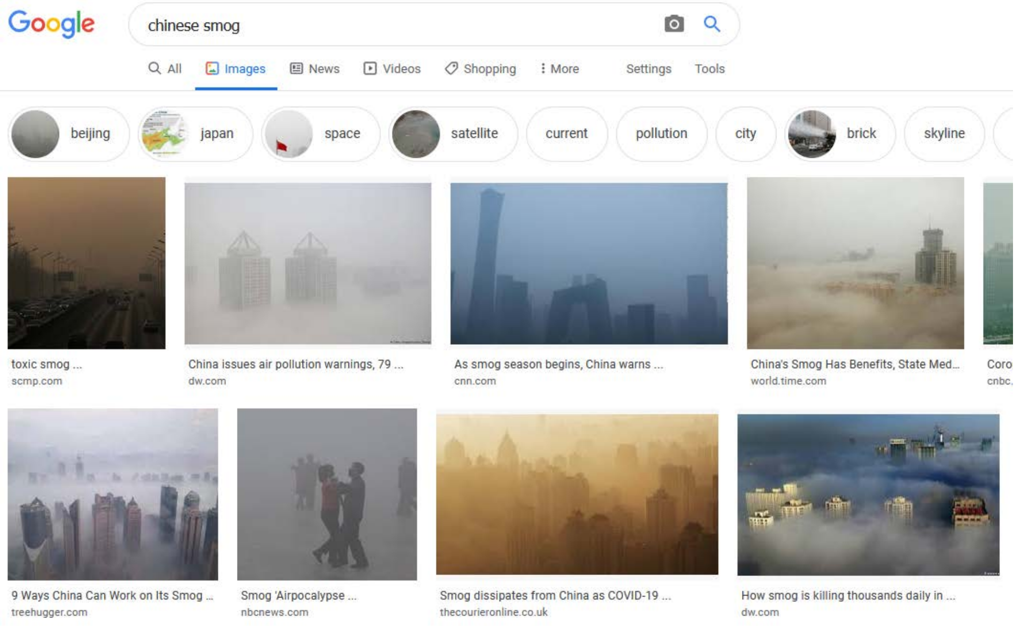
The Americas

Why Brazilian farmers are burning the rainforest — and why it's so hard for Bolsonaro to stop them

Pollutionwatch: air pollution in China falling, study shows

Annual deaths have dropped to 1990 levels after 2013 peak thanks to concerted action in key cities

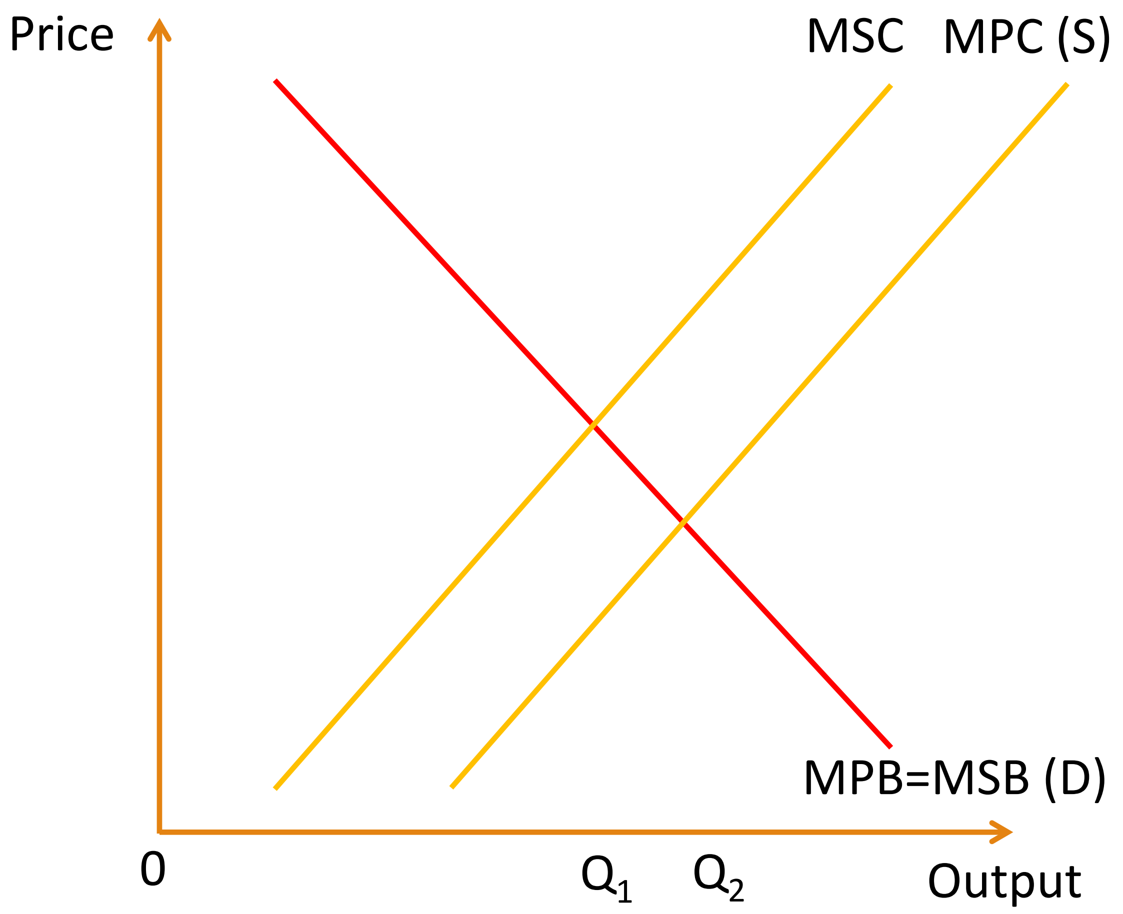
▲ A man and his child wear masks in Shanghai, China in 2013, when annual deaths from air polluti
peak. The rate has since come down because of concerted efforts to use less fossil fuels. Photogra



Negative Production Externalities

In a negative production externality, the firm incurs lower cost than society as they do not need to pay for external costs (e.g. environmental pollution). This is indicated by having MPC on the right of MSC (remember supply shifts to the right when cost is lower).

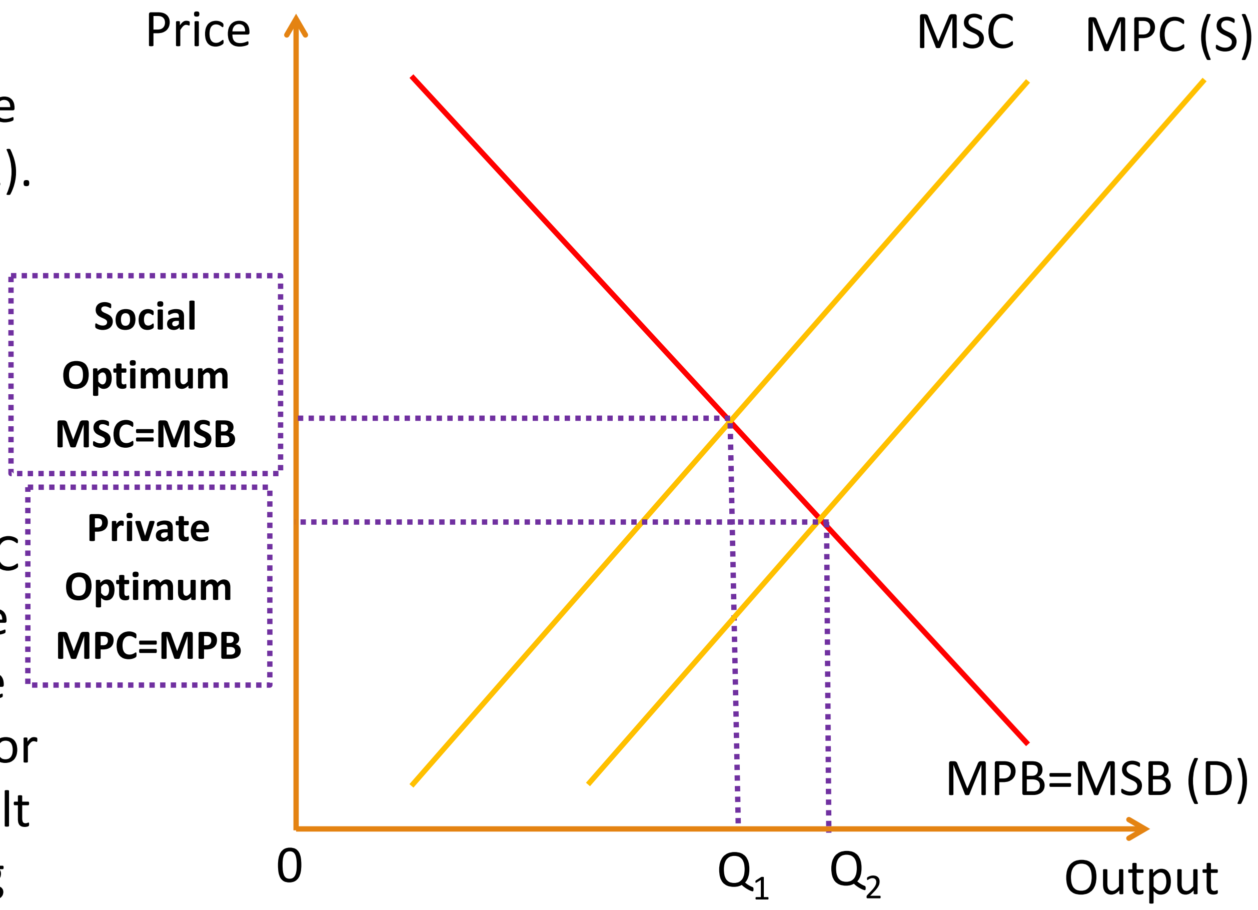
Benefits (demand) is not affected and will still be aligned, hence marginal social benefit (MSB) = marginal private benefit (MPB).



Negative Production Externalities

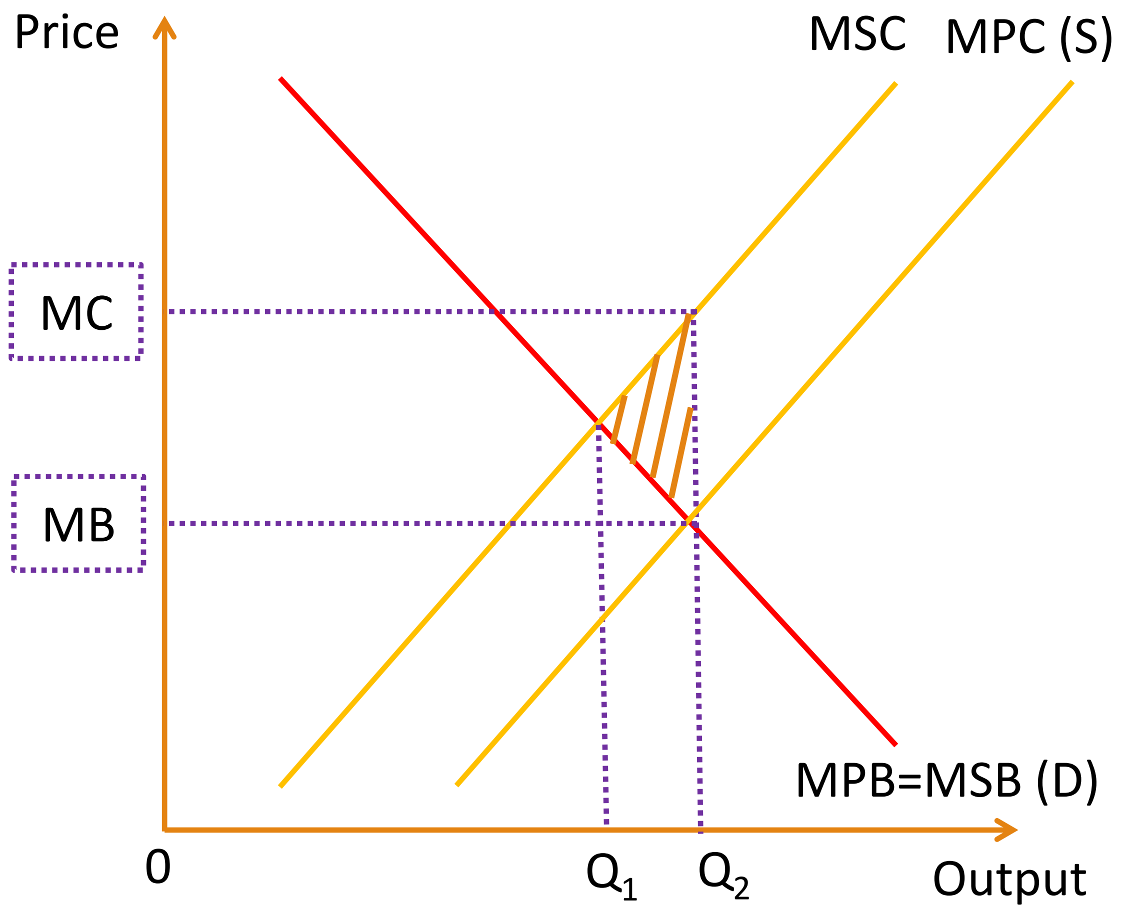
To optimise their total benefit, the firm will produce the quantity indicated at the private optimum where MPC=MPB (Q2). This is higher than the desired amount of output for society at Q1, where MSC=MSB.

Hence, the total benefit for society is not maximised as MSC is higher than MSB at Q2. In the oil spill example, this is because the firm does not need to pay for the negative consequences dealt to third parties when extracting (producing) oil.



Negative Production Externalities

As a result, there is a social welfare loss indicated by the shaded area, due to the over-production of oil in the society's perspective. Less oil should be produced as the social cost of producing one unit is currently higher than the social benefit received, meaning it is not allocative efficient.



Negative Production Externalities

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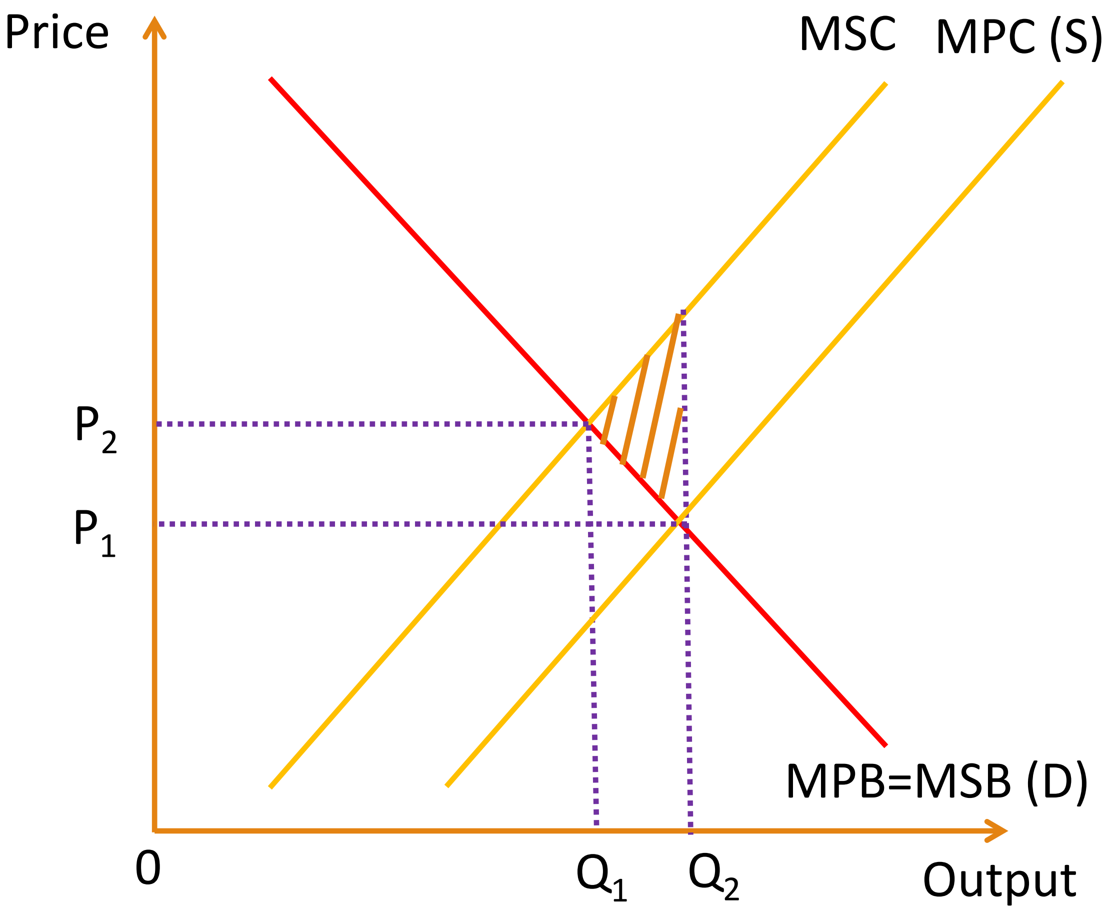

Does Social Media Create Externalities?

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Social media

Social media are interactive computer-mediated technologies that facilitate the creation or sharing of information, ideas, career interests and other forms of expression via virtual commun
networks. Wikipedia

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Employees spend over 32% of their time on social media daily for personal work: study

On an average of 2.35 hours are spent accessing social media at work every day according to a TeamLease World of Work Report

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Facebook Moves to Stop Election Misinformation

The social network said it would block new political ads in late October, among other measures, to reduce misinformation and interference.

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Teens spend nearly nine hours every day consuming media

Does Social Media Create Externalities?

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The manipulation of voting through the selling of social media ads, affecting social institutions and election legitimacy can be argued to be a negative production externality…

Yet, the consumption of social media can also be regarded as a negative consumption externality, given employees may be affecting the profits of their employers, which is a third party…

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Negative Consumption Externalities

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There is an overconsumption of social media as the individual derives a higher benefit from consuming the product than society. There is a negative effect incurred for employers (third parties), which employees do not have to pay for.

Hence, private benefits of consumption (MPB) is higher than social benefits (MSB) for social media consumption at work.


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Negative Consumption Externalities

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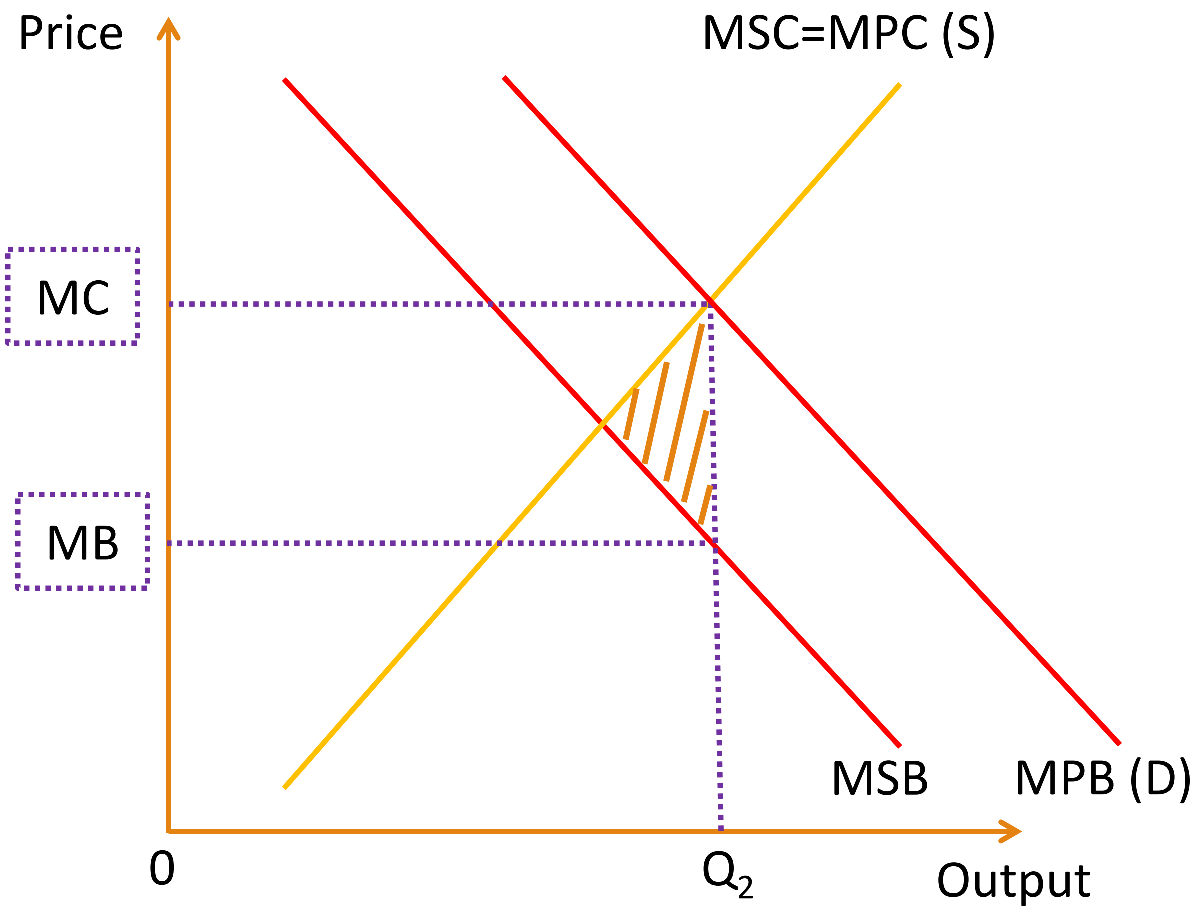
Costs are not affected and will still be aligned, hence marginal social cost (MSC) = marginal private cost (MPC).

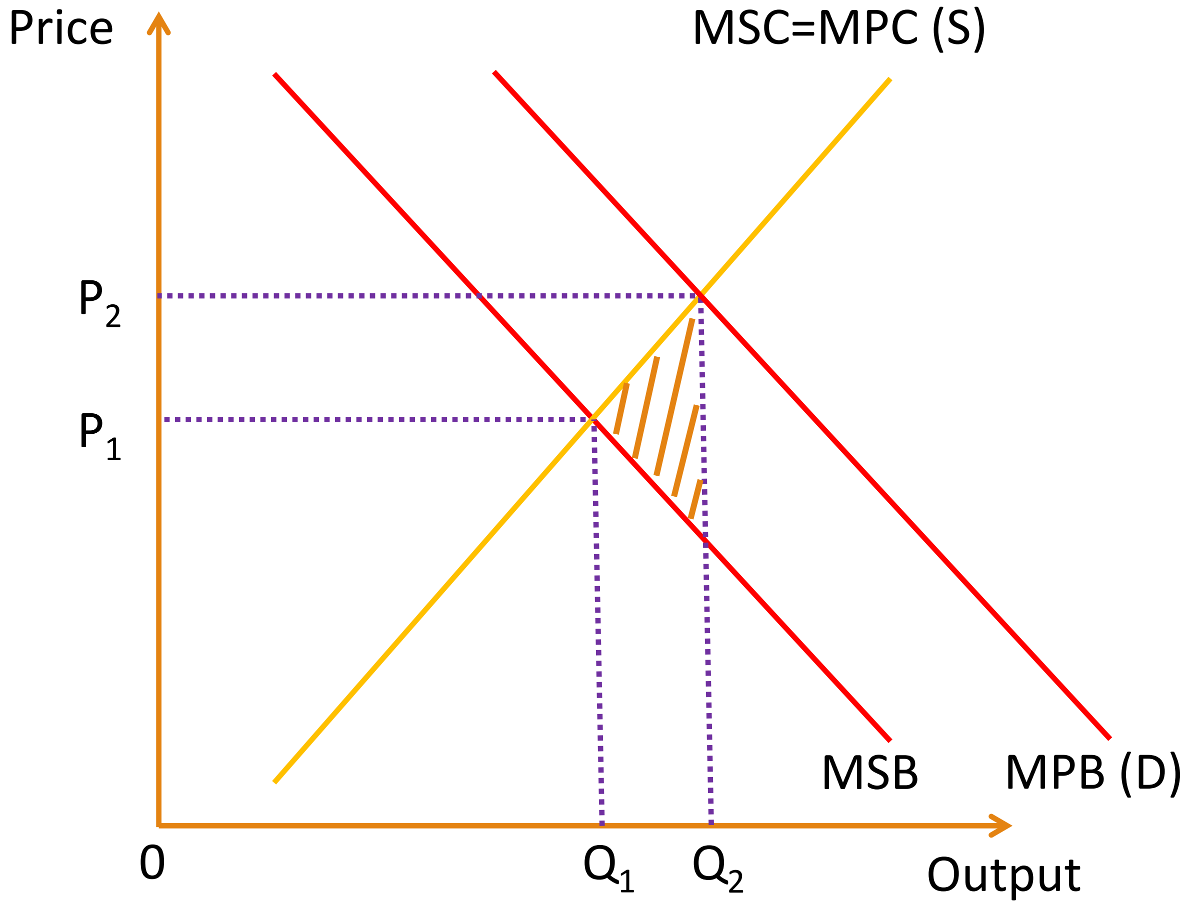
Finally, there is a social welfare loss indicated by the shaded area, as the market is over-allocating the amount of cigarettes in the market. The quantity being transacted (Q2) is higher than the market equilibrium quantity. This means it is not allocative efficient.



Negative Consumption Externalities

As shown in the diagram, the market is allocating quantity of cigarettes at Q_2, but not Q_E. This means it is not allocative efficient and caused the shaded welfare loss.

If it were allocative efficient, marginal social cost would equal marginal social benefit (MSC=MSB) with quantity at QE. This point is called the social optimum.



Typical Negative Consumption Externality

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New report reveals staggering cost to NHS of alcohol abuse

One in 10 people in a hospital bed are alcohol-dependent and one in five are harming themselves by drinking

▲ Hospitals are struggling to cope with the numbers of people whose heavy drinking is landing them in A&E. Photograph: Alamy

"One in 10 people in a hospital bed are alcohol-dependent and one in five are harming themselves by drinking"

"…the NHS estimates that the cost of treatment (for drinking habits) runs to £3.5bn a year"

"The NHS long-term plan will expand specialist alcohol care teams in hospitals across the country to tackle problem drinking and prevent 50,000 admissions over the next five years."

Demerit goods are defined as goods that detrimental and socially undesirable to us. They are usually over-consumed in society. Thus they generate negative consumption externalities.

Social Media is Just a Technology…

Some positive externalities of social media, when they produce advertising for companies?

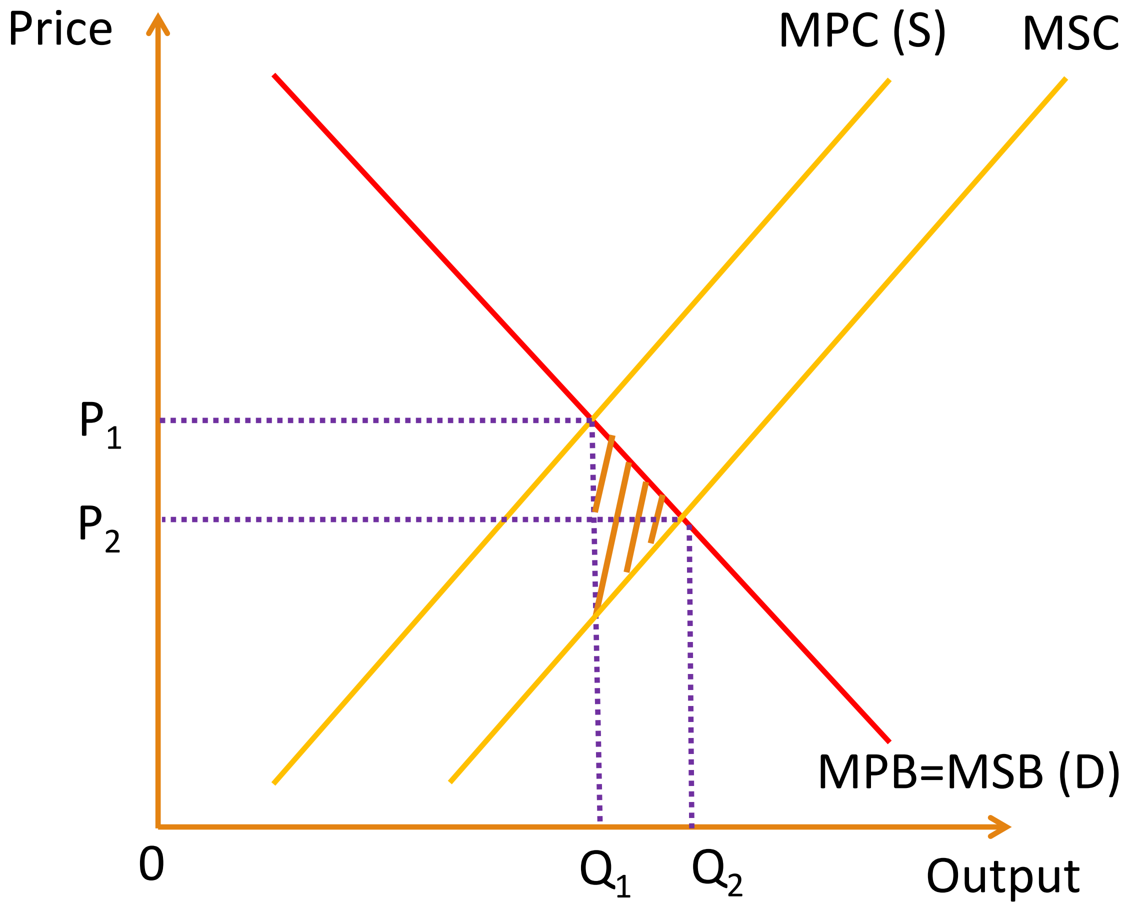
- Free calls/communication tool
- Free entertainment… especially in the comments section
- Free distribution of knowledge, skills and expertise

How do we even start to understand the social costs and benefits technology brings? The problem perhaps is that tech companies are still incentivised by its private costs/benefits to shareholders?

Positive Production Externalities

We can explain social media as a positive production externality given its merits of providing free services from the production of advertising space for brands.

Positive production externalities are comparatively harder to think about and relatively uncommon in exams…



Positive Consumption Externalities

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Coronavirus: Face coverings U-turn for England's secondary schools

By Sean Coughlan
BBC News family and education correspondent

26 August 2020

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Coronavirus pandemic


GETTY IMAGES

sky news

Coronavirus vaccine: 8,000 jumbo jets needed to transport doses globally, says IATA

Governments are told they must plan now for the "mission of a century" to ensure a vaccine reaches every corner of the globe.

The Telegraph

Coronavirus | News | Politics | Sport | Business | Money | Opinion | Tech | Life | Style | Travel | Culture

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Face masks could be giving people Covid-19 immunity, researchers suggest

Mask wearing might also be reducing the severity of the virus and ensuring that a greater proportion of new infections are asymptomatic

Positive Consumption Externalities

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Coronavirus pandemic

When you buy a mask, you are benefiting others by reducing the risk of getting them infected. As a result you are benefiting a third party, and of course saving the NHS money and capacity!

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Positive Consumption Externalities

Electric bike and scooter sales boom spurs Halfords back to growth

Sales more than triple on e-bikes and scooters as comm public transport

▲ UK consumers bought 2.5m bikes last year, with many more repairing old bikes kept in sheds and gardens. Photograph: Guy Bell/Alamy Stock Photo

BUSINESS NEWS SEPTEMBER 8, 2020 / 7:24 AM / UPDATED 4 DAYS AGO

UK retailer Halfords buoyed by pandemic cycling boom

By Reuters Staff 3 MIN READ

LONDON (Reuters) - British retailer Halfords HFD.L forecast on Tuesday a sharp rise in its first half profit as it benefited from a cycling boom during the coronavirus pandemic, but warned that growth would be slower in the next six months.

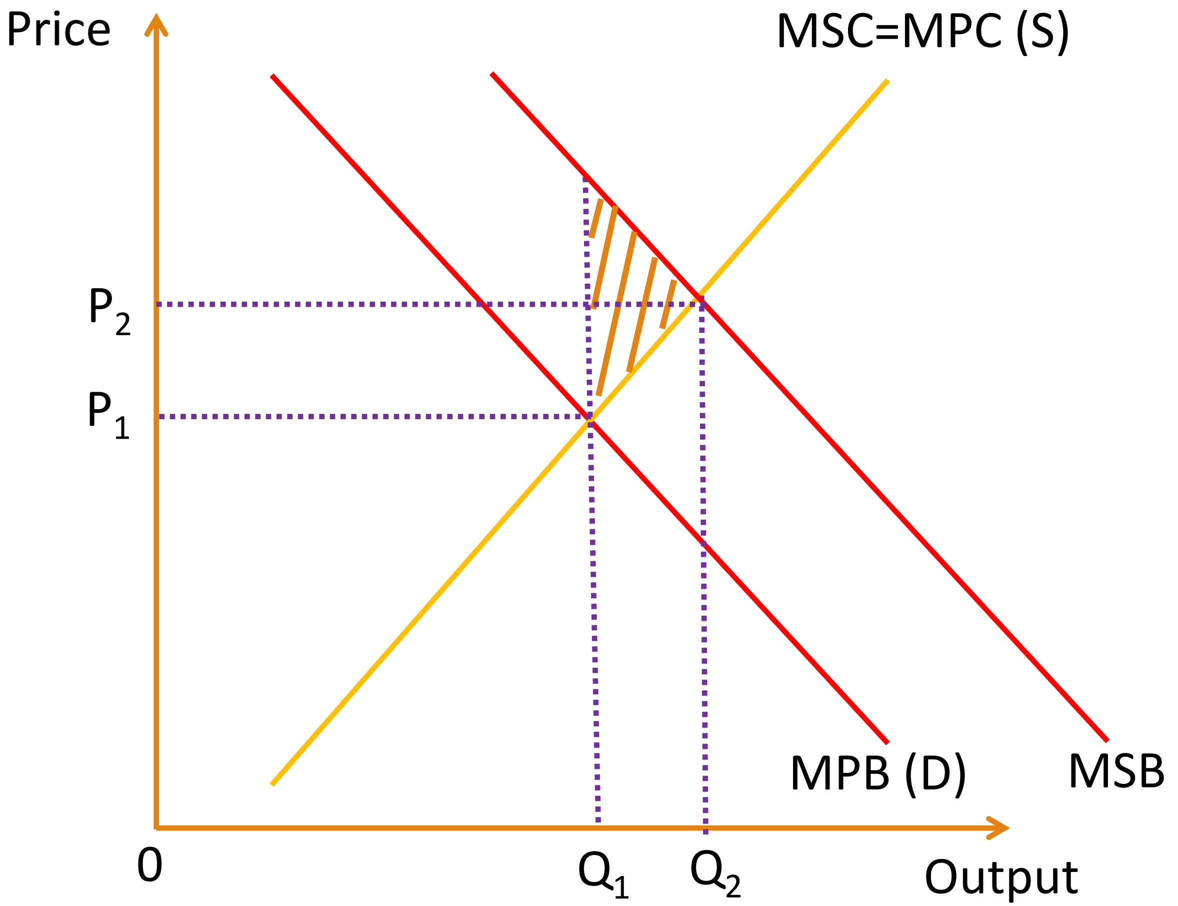
Merit goods are defined as goods that are beneficial and socially desirable to us. Hence they are usually under-consumed in society, generating positive externalities.

Positive Consumption Externalities

Qurious Education

In a positive consumption externality, consumption of the good will bring about positive effects on third parties. This means to maximise society's benefit, we need to consume the good more.

Currently, the good is being under-allocated and under-consumed in the market. The shaded area is the potential welfare gain if consumption increases from the original quantity (Q_1) to the social optimum (Q_2).



Externalities are Market Failures

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Why are externalities market failures?

Externalities prevent markets from operating at the social optimum point (where demand = supply), meaning they do not have allocative efficiency, thus leading to welfare or deadweight loss.

What has to be done when there's market failure?
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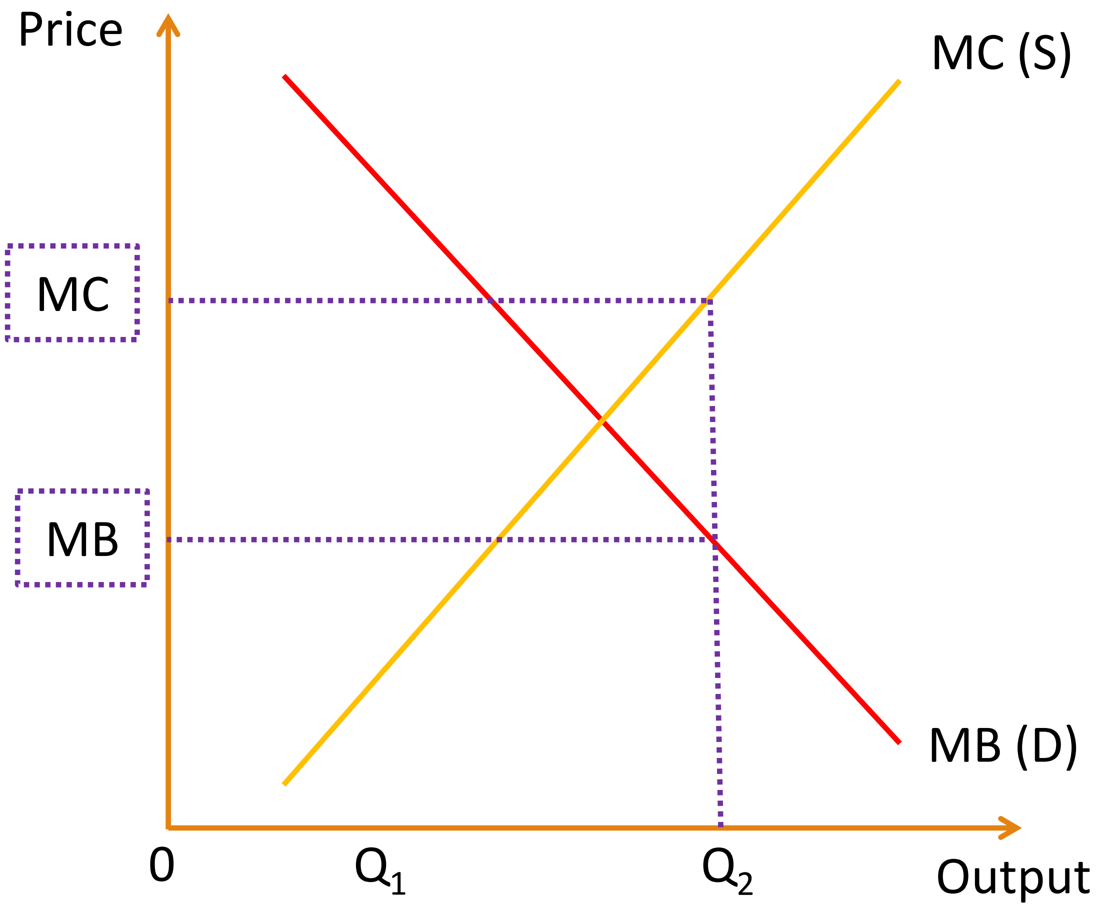

Tackling Negative Externalities

Qurious Education

What can the gov do?

- Regulation (and fines)

Regulatory bodies for specific industries can help monitor and fine companies if they generate negative externalities and try to avoid the cost. In this example, BEIS investigated BP… but spent £50K doing so resulting in government failure

- Legislation

Ban the demerit good, or pass laws punishing negative externality creators

Reuters

New Zealand moves to ban vaping ads, sales to minors

(Reuters) - New Zealand's government said on Sunday it will introduce laws banning all advertisements of e-cigarettes and the sale of such ...

22 Feb 2020

The New York Times

Vaping Links to Covid Risk Are Becoming Clear

"I have no doubt in saying that smoking and vaping could put people at increased risk of poor outcomes from Covid-19," said Dr. Stephanie ...

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Energy Voice

£50k spent on oil spill investigation that led to £7k fine for BP ...

The UK Government spent more than £50,000 investigating BP after ar seven times greater than the fine dished out to the ...

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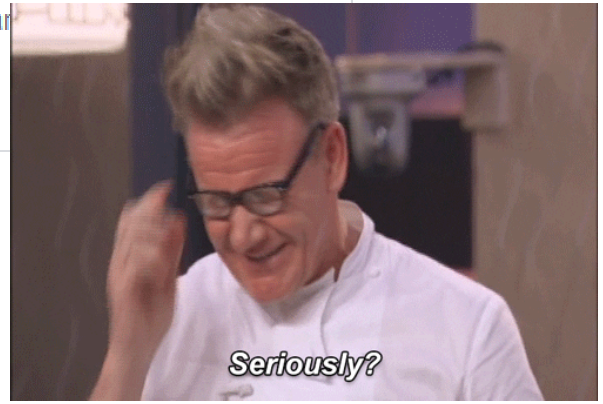


Taxing Negative Externalities

- Taxes

Taxes reduce the profits of suppliers, reducing production and shifting supply to the left. We can see market quantity reducing from Q_1 to Q_2, back to the socially optimum amount, hence clearing out the welfare loss. But how can the gov know the right amount of tax?

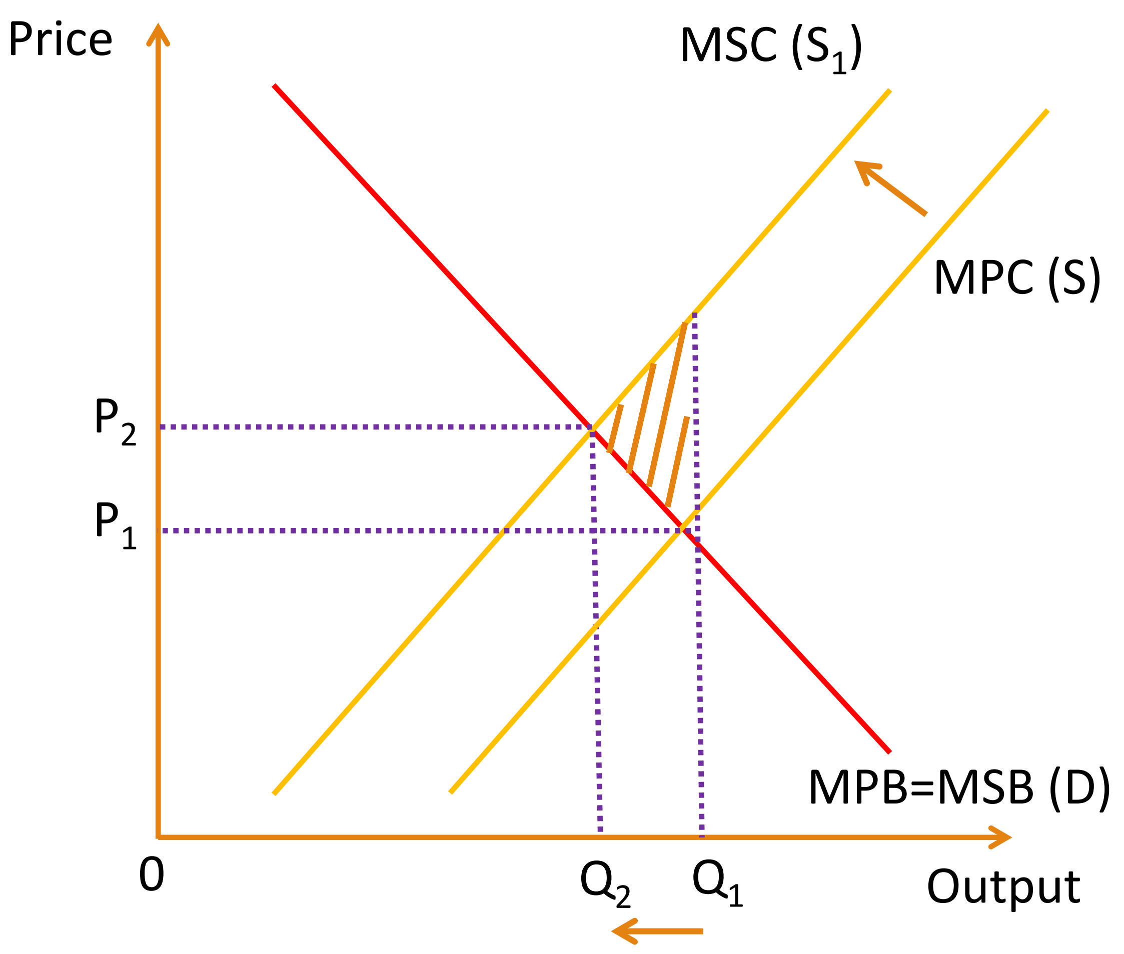
- Minimum Price

Similar to taxes, min price can reduce market quantity back to the socially optimum amount when implemented at price P_2

- Advertising/Education

Gov can sponsor campaigns to educate consumers regarding detrimental effects of demerit goods – this aims to reduce demand to the point where quantity drops to Q2

Negative Production Externality Example



Tackling Positive Externalities

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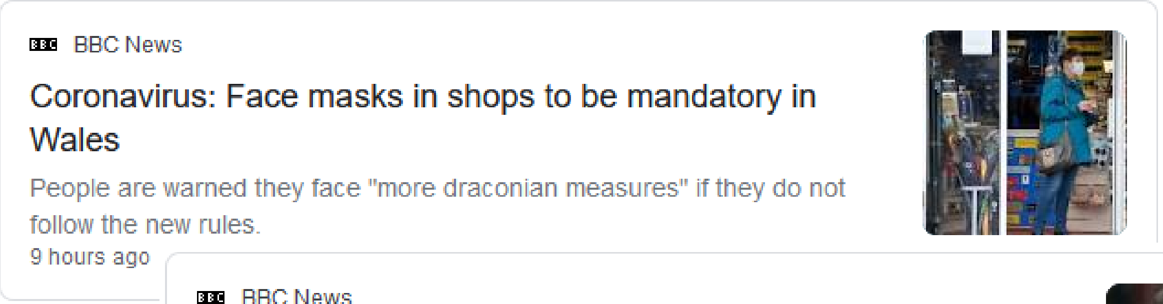
What can the gov do?

- Regulation & Legislation

You can be required by law to consume certain goods, making them mandatory, hence increasing quantity supplied in the market and solving the market failure… but how much should the government provide?

- Advertising/Education

Gov can sponsor campaigns to educate consumers regarding beneficial effects of merit goods, which would increase quantity demanded to reduce the negative consumption externality

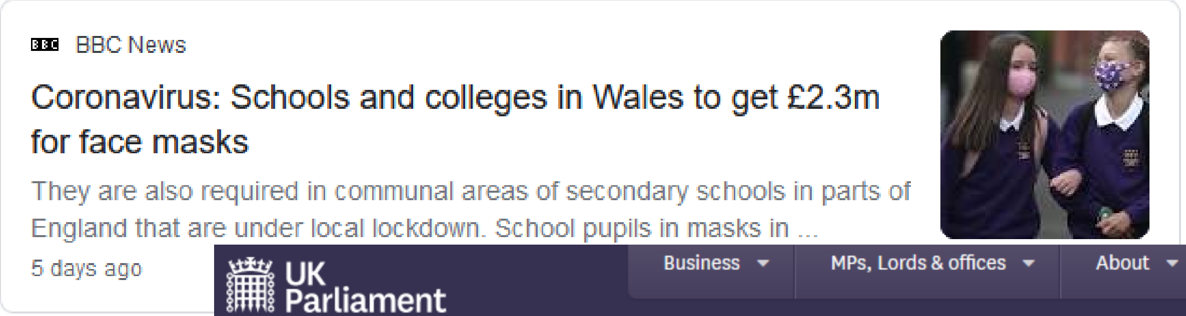


BBC News

Coronavirus: Face masks in shops to be mandatory in Wales

People are warned they face "more draconian measures" if they do not follow the new rules.

9 hours ago



BBC News

Coronavirus: Schools and colleges in Wales to get £2.3m for face masks

They are also required in communal areas of secondary schools in parts of England that are under local lockdown. School pupils in masks in ...

5 days ago

UK Parliament

Business MPs, Lords & offices About

UK Parliament

UK Parliament > About Parliament > ... > Living and Learning > Going to school > Overview > The 1870

The 1870 Education Act

School funding

National Education League

Matters began to move forward, however, in 1869 when the recently formed National Education League began its campaign for free, compulsory and non-religious education for all children.

Subsidizing Positive Externalities

Qurious Education

What can the gov do?

- Subsidies

Subsidies can help increase supply of the good, when the gov covers part of the production/consumption cost. This increases profits in the industry and shifts supply outwards. We can see market price decreasing, and an increase in quantity to the social optimum (Q_2), solving the market failure.

- Maximum Price

The gov can also set a price ceiling to force the price down to P_3, which will increase quantity consumed in the market, however how may this affect profits of supplier and sustainability of the industry?

Positive Consumption Externality Example