

Pollution market failure



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A tax on pollution is designed to confront a person or company causing pollution with the sum equivalent to the social costs they are imposing on others. Firms pay taxes on the income both in the legal sense that the company is an individual and in the economic sense that company is a tax on them. Taxation can be used to correct market failures.

Pollution are things that cause discomfort or harm to our environment, it can be in different form such as air, water, noise, heat. Things that causes pollution are called pollutant because they harm living organism, causing global warming which is when the temperature on the earth is getting hotter and climate change.

A pollution tax can promote productive efficiency when a firm produces where price is equal to marginal cost, Also when the firm produce at any given output at the lowest possible cost, given in this case that this is a perfect competitive market.

Externalities are spill over cost or benefit we can refer to external economies and diseconomies. Externalities can either be good or bad, when good is called benefit and bad cost. The benefit is when the society are affected beneficially they are said to be external benefits, while cost is when the society are affected adversely . It creates a divergence between private and social costs and benefit. All cost are incurred by the producers and all benefits are reaped by their customers. The costs are often clearer when specific government activities are considered rather than taking everything in one lump. Externalities in production are very important in the real world.

Pollution can be seen as an externalities. Taking a industry for example they throw their waste into the river and its smoke into the air. Apart from pollution been an externality, creation of a shopping mall increases traffic in the area causing discomfort to the people living in that area can also be seen as an externality. External cost of production is when the marginal social cost is greater than the marginal cost($MSC > MC$). The problem of external cost arises in a free- market economy because no one has legal ownership of the air or river.

Marginal cost (MC) is where the firm gets to produce its goods and services. It is the cost of the firm or private cost, this does not include the cost of pollution on the environment that the firm creates, these are external cost to the firm. We tax a firm that has external to make up to the society. marginal social cost(MSC) lies above the marginal cost(MC). Given $MSC > MC$, MSC is where the society wants the firm to produce , the vertical difference between the MSC and MC is the external cost which is referred to pollution that the firm emits in the environment causing discomfort to the society. The individual who live and work around where the waste has been deposited bears the cost arising from the industry.

At point Q1 the firm is profit-maximizing output, the society sees the external cost as an overproduction from the firms part . if the government required the firm to pay the external cost the firm would reduce its outputs to Q2 which is the level at which the society is comfortable with the level of production which is known as social optimum. At this point we can say the firm is attaining productive efficiency.

Price MSC MC= S

P D

External cost

0 Q2 Q1 Quantity

External benefits in production, the marginal social benefit is greater than the marginal cost, the benefits outweigh the cost. Given MC

The vertical difference between the MC and MSC is the external benefit.

Taking for example a forest where trees are planted and cut for different aspect of production, the externalities been caused here both the firm and society partakes in it.

MC= S MSC

P D

External benefit

0 Q1 Q2 Quantity

In the monopoly market, the firm makes abnormal profits. When the government wants to correct externalities. Here taxes can be used to regulate the behavior of monopolistic power because they get to determine prices or goods and services leading to abnormal profit in which they make. When the marginal social cost is greater than the marginal cost it leads the firm to external cost and this is where the government comes into to regulate. The tax lies between marginal social cost and marginal social cost,

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the firm maximize profit when P_1 at Q_1 , where the marginal cost is equal to marginal revenue. The tax been imposed will make the monopolist produce at level Q_2 making marginal revenue equal to marginal cost plus tax. At that point profit is maximized at a new price P_3 and output Q_3 . The firm is charged is charged a tax equal to the externalities, leading to social optimum where the marginal social cost is above the marginal social cost , the firm and society bears the burden of the cost in respect of the tax imposed on the firm by the government to correct abnormal profit monopolies do make.

seen as overproduction and the society satisfaction, these can be cause by low or shortage in the different factors of production. In the real world market do fail.

In conclusion, pollution tax would produce an efficient solution when a firm limits the amount of pollutants that business firms discharge into the environment, leading to creativity of the industrial system toward a cleaner environment by making the reduction of pollution a paying proposition.

B.

Taxes on alcohol tend to be progressive since the proportion on income spent on alcohol tends to rise with income of individual because of the satisfaction they get from consuming alcohol. Earlier said that taxes are use to to correct market failure, one of such is the deadweight loss that result to when taxes are imposed on goods and services. Compare to other countries alcohol is relatively highly taxed in UK, and drinking is responsive to price,

the satisfaction individuals get from consuming alcohol will make them spend more to derive more satisfaction.

Supposing a tax is been imposed by the Uk government on alcohol, the impact of the deadweight will be felt after the tax on alcohol has been imposed on both the consumer and the supplier. The deadweight loss is the both the lost of consumer surplus and producer surplus, which will be illustrated in the diagram below.

At the point when demand is equal to supply is when P_1 is at Q_1 . A tax on alcohol would make the supply curve shift upward given alcohol a new price causing prices to rise to P_2 and output falls at Q_2 . Suppliers increase the price of alcohol and the consumption on the consumers part will decrease because the tax affects both the supplier and consumer.

The areas affected by the the tax are areas 1, 2, 4 and 5, that is the total loss to the consumer. Areas 1, 3 and 4 is the consumer surplus with price at P_2 , consumer surplus falls to area 3 alone. At area 3 the consumers could buy at that level when P_1 was at Q_1 . Areas 2, 5 and 6 the firm receive total profit here before tax came about, which is the producer surplus. The deadweight loss is area 1 and 2 which is the net loss to the community.

The deadweight loss from the tax on consumers will felt in the first year, this will lead to demand been inelastic in the short run, the higher the price of alcohol, the consumption still remain the same. Individuals who spend larger proportion of their income on alcohol may be less sensitive to such price change at the first year period, because they do not feel the effect of the tax

on alcohol and still can afford to consume more even with the increase in price caused by the tax. P_1 is at P_2

Inelastic demand curve

In the short run supply is inelastic, just labour can be increased there is just a marginal difference in the supply of alcohol even though demand tends to increase supply remains inelastic.

In the fifth year, the long run demand and supply is elastic. consumers tend to find a substitute for alcohol, making the demand elastic and supply remains elastic, because the supplier can now change their factors of production

In conclusion, Taxation of alcohol is an effective way to reduce alcohol problems and the tax is also a good means to reduce consumption. the more elastic is demand, the less elastic is supply, so also the less elastic is demand the more elastic is supply.