

Outline how this
congestion tax would
reduce traffic
congestion



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Road is a common resource and congested roads is an example of the tragedy of the commons. Because roads in most countries are free at the point of usage and there is little or no monetary incentive for motorists not to over-use them. This results in over usage of roads to the point where traffic collapses into a jam and there are heavy losses to traffic congestion. Traffic congestion results in market failure as it is a form negative externality that distorts the socially optimal workings of the free market. Market failure arises when the free market failed to allocate resources in a socially efficient manner and a negative externality is the cost that affects someone who is not directly involved in the over production or consumption of the good.

The negative externality in this case is the time wasted on road which poses inconvenience to motorist and also triggers a chain reaction, from pollution to lost man-hours (Goh, 2002) which can cost up to \$10 billion a year in Australia (Stanley 2011). The implementation of congestion tax would help to control this situation and this is illustrated below. In the free market, as motorists will only take into consideration of their private benefits, they will consume at the level where private benefit, which is also the social benefit equals to the private cost as shown in the diagram above at equilibrium E_0 with P_0 and Q_0 . However, the economically efficient level is at E_1 where social cost equals to social benefit.

Thus, there is a need for the government to impose the congestion tax to bring the Equilibrium back to its socially optimum level. The government should impose the congestion tax at P_1 and must be equal to the external cost of driving on road. This amount of tax imposed at P_1 will internalise the external cost and close the divergence between S_1 and S_2 . As a result, the

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supply curve will shift from S_1 to S_2 and the market equilibrium will move from E_0 to E_1 where the quantity of car trips is now at the economically efficient level, Q_1 . The cost of car trips will move from P_0 which does not reflect the cost of traffic congestion to P_1 , which does reflect the cost. Since car trips are now more expensive to motorists due to this congestion tax, they will cut down on their car trips and thus relieving the problem of traffic congestion in Perth.

This system has several advantages. This congestion tax which is shown by the blue area in the diagram above can increase the tax revenue for the Perth government and the government can use this amount for either transport or environmental improvements (Stanley 2011). The congestion tax also forces motorists to internalise the social cost of driving such as longer travelling time, pollution and accidents (Laura Blow 2003). It also increases social efficiency as social benefit is now equal to social cost and decreased car trips would result in decreased air and noise pollution as well.

Last but not least, this system also reduced the journey time of travelling. For instance, the congestion tax in London led to 30% improvement in travelling time (TCL 2007). However, it can be complicated to measure the cost of traffic congestion and impose the “right” amount to tax. For instance, if the tax is too high, low income earners who deemed driving to work as a necessity might be worse off as they now incur a higher cost of living.

This will then contribute to greater income disparity. Whereas if the tax is too low, it might not be efficient enough to bring the market equilibrium back to

the economically efficient level as monetary loss to motorists is at the bare minimum. There is also deadweight loss to the society when the congestion tax is imposed, as shown by the green area in the diagram above. Moreover, the increase in cost of car trips due to congestion tax will lead to a less than proportional fall in the quantity of car trips because the demand for driving into Perth is likely to be inelastic.

This is because most people would prefer the comfort and convenience of driving personal transport than taking public transport. The congestion tax therefore would not deter people from driving to work or school during peak hours such in the morning to a large extent because this is seen as a necessity to them. This is true especially for people living in the suburbs of Perth where public transport is highly inaccessible. Lastly, the implementation of the tax system can also be difficult. Compliance and administrative costs for the tax system can be quite high as well.

Due to these limitations of the congestion tax system, it is necessary to review other potentially viable alternatives that might be better solutions in controlling traffic congestion in Perth. Traffic congestion can be reduced by either increasing road capacity (supply) or by reducing traffic (demand). A good demand management option to reduce the number of cars on road is to have a quota license for cars in Perth, similar to the Certificate of Entitlement (COE) system used by Singapore (LTA 2013). One of the reasons why there is increased traffic congestion in Perth might be due to the fact that prices of cars are too low and people are getting more and more affluent. It can cost as low as \$2, 000 to own a second-hand car and \$20,

000 to own a brand new car in Perth. (Car Guide 2013) A diagram on how this system works is shown below.

Suppose that in order to drive on road now, the government would require motorists to purchase the car ownership permits. The quota is set by the government at Q_0 and the price of the permits is determined by the market. When demand for car permits increases, D_0 shifts to D_1 , the price will go up from P_0 to P_1 with the supply remaining unchanged. Therefore, as the price of permits gets higher, owning a car will become increasingly expensive and unaffordable.

This will deter people from owning a car and hence reducing the demand for cars. This means that there will be fewer cars on road and traffic congestion is therefore reduced. However, the downside is that this system is based on the ability to afford a car instead of who actually needs to use the car more. Therefore, it tends to favour the high income earners more than the low income earners.

On the supply side, the government can increase road capacity by building more roads, underground tunnels and highways. However, these constructions take time and can only be realised in the long run. Hence in the short run, a good option is to improve the public transport system in Perth. A good public transport system will encourage people to switch from their private transport to public transport. The government can achieve this by improving the level of comfort and convenience of public transport.

For example, Transperth can increase the frequencies of buses and trains during peak hours, provide new routes for buses so that public transport can <https://assignbuster.com/outline-how-this-congestion-tax-would-reduce-traffic-congestion/>

reach out to more areas. In terms of level of comfort, Transperth can upgrade the seats with better cushions and install “ mobile TVs” on buses and trains. These improvements will draw more people to take public transport and hence reducing traffic congestion. In conclusion, the use of congestion tax to reduce traffic congestion is highly effective as it forces motorists who use the road to internalise the external cost of driving. However, congestion tax has limitations and congestion tax alone is insufficient to combat traffic congestion if it does not tackle the root of the problem directly.

Therefore, it is important for the government to identify the cause of increased traffic congestion. For instance, setting a quota to cars allowed in Perth would combat increased traffic congestion directly if rising affluence is the cause. Meanwhile, the government should also use other measures to increase road capacity such as the improvement of public transport in the short run and expansion of current roads through building more roads, underground tunnels and highways in the long run. Thus, it is important for the government to adopt a combination of these measures to reduce traffic congestion since traffic congestion is related to both the demand and supply of roads.