

# SHOULD A TRAFFIC CONGESTION CHARGE BE INTRODUCED IN DUBLIN?

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*In this essay, Stuart Patterson examines the theoretical basis for road congestion charges. Using the successful empirical example of the city of London, he attempts to determine the applicability of this model to Dublin city centre. He also considers the social, practical and political opposition to such a scheme and whether it would be feasible within the limitations of Dublin's present public transport system.*

## Introduction

*'The years have made me bitter, the gargle dims my brain,  
'cause Dublin keeps on changing, and nothing seems the same.  
The Pillar and the Met have gone,  
the Royale long since pulled down,  
As the great unyielding concrete, makes a city of my town.'*

'Dublin in the Rare Old Times', Pete St. John.

Although this paper's ultimate objective is to come to a conclusion as to whether or not a congestion charge would be an appropriate way to relieve Dublin's chronic traffic problems, the issues that emerge in this discussion could apply to any urban area that suffers from congestion. This paper will first look at the theoretical basis behind the idea of congestion charging. The impact such a charge would actually make can be seen when we look at other city's experiences, most notably in London. However it is also important to investigate why many cities have flirted with the concept of congestion charging but so few have implemented one. Is this due to the design and workings of the city or simply a lack of political conviction? This is a particularly important question to answer in a country not especially known for the latter.

## Theoretical basis

The theoretical basis for congestion charging lies in the fact that the act of driving a car imposes costs on other members of society. With respect to congestion in particular, Gwilliam and Mackie (1975: 149) state that 'individual road users fail to perceive the delay costs which they impose on others'. Along with Button (1993), they outline four instruments for controlling congestion:

1. Restrain the movement of traffic; for example, one-way systems and bus lanes.

2. Lower the cost of using uncongested facilities. In most cities this would involve subsidising the running of a public transport system.
3. Charge for parking in urban areas to encourage the use of other forms of transport.
4. Raise the cost of using congested facilities; road pricing.

The latter of these, the least used but potentially the most effective, takes from the wisdom of Pigou, who developed the concept of internalising externalities through taxes. In essence, when road space must be paid for, it will be used in the most economically efficient way. This is largely achieved by users either cancelling journeys or transferring to public transport. Barrett (1982: 178) explains that a bus 'is a low cost user of expensive road space but since there is no market for road space it is unable to use this advantage to its commercial benefit'.

However, there are a number of difficulties in applying this economic insight to real life. Based on the theory, an appropriate congestion charge would be calculated at marginal social cost. That is the extra cost imposed upon society, especially other road users, from the congestion caused by one extra vehicle on the road (Santos, 2004). The difficulty with this is that marginal social costs vary with the level of congestion already on the road, which in turn depends on the time of day and the route in question. Simply calculating marginal social cost is largely a guessing game as there are too many factors at play to put into a model. Thus the prospect of determining current and varying marginal social costs is completely impractical and costly (ibid.). At present, it is not cost effective to charge different prices for travelling along different routes in a town centre; although advances in satellite tracking systems that measure distances travelled by cars in congested areas may become an option in the future. All this implies that great simplifications need to be made in applying the theory of congestion charging to real life.

Santos (2004) examined the extent to which the theoretical benefits of marginal cost pricing could be retained using a more simplified cordon system. This system operates whereby motorists must pay a toll when passing through a cordon placed around town centres. Santos' study used a computer programme to simulate the introduction of a cordon toll in eight English towns. Notably she found that gains in efficiency from a cordon charge compared favourably with those of a hypothetical system of road pricing based on marginal social cost. A number of issues were also highlighted. It is both difficult to determine the optimal positioning of the cordon and the optimal price of the toll. If it is set too high, too many people will change route and cause congestion outside the charged area, while a low congestion charge will have little impact on people's behaviour. Trial and error is the only solution to this problem. Button (1993) argues that an optimal toll may not exist if demand functions for road space are not continuous.

The 1964 Smeed Report produced for the British Ministry of Transport was the first serious attempt by a national government at assessing the usefulness of road pricing to tackle the emerging problem of urban traffic congestion. At the time, it concluded that technological factors would make the costs of implementing road pricing prohibitive (Smeed, 1968). However, by 2003 this had changed.

### **Congestion Charging in London**

In 2003, London introduced a congestion charge of £5.00 for motorists driving within a designated area of the city centre between the hours of 7am and 7pm on weekdays. It used an automatic registration plate registration system with video cameras at every point of entry to the zone (Transport for London, 2007a). This was the first time a charge had been introduced with the sole purpose of fighting congestion. As such, it is an important case study for any city considering similar action.

The charge had quite a significant impact. A Transport for London Report (2007a) stated that traffic levels entering the zone in 2006 were 16% down on pre-charge levels. The number of charged vehicles had been reduced by 30%. As a result bus journeys per day had increased from under 90,000 to 116,000 in 2006. At the same time London underground journeys increased by only 1%, indicating that those served by it were already inclined to use it. It was found however that the main effect of the charge was upon traffic entering the city from 11am onwards, after the morning rush. This would indicate, as might have been expected, that those travelling for non-work purposes were more sensitive to the increased cost of driving in the city. There is evidence that the charge is likely to have caused only a once-off shift in motorist's preferences as an increase in the charge to £8.00 had little additional effect on traffic levels (Transport for London, 2007a).

### **Why is London the only city doing this?**

The economic theory has largely been backed up by the experience of London. So why have other British cities resisted implementing congestion charges in spite of pressure to the contrary from central government? (Swinford, 2007) Arguments centre upon the issues of equity and the authorities' accountability (Viegas, 2001).

Congestion charging has implications for the welfare of those who use the road system. The wealthy experience some gain in welfare by being able to purchase quicker travel, and the poorest gain as the buses they travel on encounter less congestion; but it is feared that those who are forced to substitute private driving for public transport will experience a welfare reduction (Button 1993). This can be addressed through some form of redistribution. However, the means by which this is done is controversial.

Theoretical examples do not overly concern themselves with how the tax revenue should be spent because the primary motivation is efficiency. However, in the real world, the way this money is spent is of great importance to the general public (Button 1993). This is illustrated by the fact that much of the media reporting on London's congestion charge has concerned itself with how much money has been channelled back into improvements in the public transport network (Swinford, 2007). Evans (1992) states that road pricing can create perverse incentives for enforcing authorities as they may depart from the goal of economic efficiency in setting prices and substitute a revenue target in its place.

By law all surplus revenue collected from the London congestion charge must be spent on improving alternative transport options. In 2006-2007 the revenue was distributed as follows:

Bus network improvements	82%
Road safety	4%
Walking & cycling programmes	2.5%
Road & bridge maintenance and upgrades	11%

**Table 1: Revenue Distribution**

**Source: Transport for London, 2007b.**

However, projected surpluses have fallen short of expectations due to higher than expected costs of running the system. In 2006-2007 the revenue collected by the charge amounted to £252.4 million; £130.1 million was spent running the system resulting in net revenue of £122.3 million (Transport for London, 2007b).

The standard of the public transport system in any city introducing congestion charging also needs to be addressed. If people have no real alternative to using their car they will feel exploited as they will have no other option but to pay the charge. In such a situation, congestion charging simply becomes a revenue-raising mechanism as little substitution of mode of transport can be made. This in turn militates against any reduction in congestion.

### **Congestion charging in Dublin?**

The main issues in introducing congestion charges to Dublin are: its feasibility; its potential to be effective; and the level of public acceptance needed if it is to survive the political process. Any zone created to introduce a system of congestion charging in Dublin would ideally mirror the boundary which has already been created by the ban on the unnecessary passage of heavy goods vehicles through the city centre. This zone effectively covers all land within the canal cordon along which the North and South Circular roads run. Currently Gardaí must patrol this area in order to enforce the ban on HGVs (Dublin City Council, 2007). If the kind of electronic systems used for congestion charging in London and the M50 motorway toll in Dublin were introduced for a congestion charge, a saving could be made on Garda resources as the cameras would now also catch infringing HGVs.

With regard to feasibility, it must be remembered that London's charge has proved an expensive one to implement, costing £161.7 million to install; and, as noted previously, around half of the revenue it generates is spent on running the system (Transport for London, 2007b). This raises the issue of whether Dublin is large enough to sustain such a system. According to the Dublin Transport Office (2007) around 70,000 vehicles, including 62,000 private cars, cross the canal cordon in the direction of Dublin between the hours of 7am and 10am every day. Given that around 120,000 cars enter the London zone during the twelve-hour charging period on any day in London, it seems likely that Dublin's traffic levels should be heavy enough to cover costs. It is clear that the costs involved should also be smaller than London's as Dublin's charging zone covers a smaller area (although a larger area in terms of the proportions of the respective two cities). There are also fewer entrance points that must be monitored by cameras, thus cutting down on the costs of installing the system.

The effectiveness of congestion charging in Dublin will depend on the willingness of its citizens to substitute travel by private car for travel by public transport. This in turn is reliant on the quality of alternatives available. A report by Deloitte (2009), recently presented to the Department of Transport, found that Dublin Bus was run inefficiently and that the organisation should be able to maintain the current level of services despite cutbacks in government spending. While London channels all of its congestion charge revenue back into public transport, the prospect of increasing Dublin Bus's level of subsidisation would be unpalatable and a poor use of the revenue. Without a good public transport system that can act as a substitute for private cars, any benefit from congestion charging will be smaller than it ought to be and will prove very unpopular among the public. A privatisation of bus routes, as has occurred in London, may provide bus services that respond to demand for public transport more effectively.

Another factor militating against Dubliners becoming less car-dependent is the manner in which Dublin is growing as a city. Wickham (2006) argues that the increased suburbanisation of Dublin and its sprawl into neighbouring counties entrenches Dublin's dependence on the car. Poor urban planning is at fault for this. In Helsinki, the population density is as low as it is in Dublin, but new housing, employment and retail facilities there have been planned to cluster around high capacity public transport links which otherwise would not be viable. In contrast, Dublin's development has encroached into swathes of rural areas with poor public transport links and a dependence on the M50 (originally planned as a by-pass route) to get from place to place. The operation of efficient public transport services may no longer be viable in many areas due to the manner of development. This has occurred in many American cities, most notably in Los Angeles.

The issue of accountability would be a live one in Dublin also. It is an important issue if the implementation of road pricing is to pass through local government unscathed. In fact, there have recently been discussions on the introduction of congestion charges in Dublin. The current Minister for Transport, Noel Dempsey, has indicated that they will be introduced in the near future (Taylor, 2009). It is notable that this has only become a feature of government policy at a point in time when the public finances are in dire straits. Road pricing should ultimately be seen as a way of replacing the current system of motoring taxation (road tax and fuel duty) with a system that does more to influence efficient behaviour (Gwilliam and Mackie, 1975). The government will have to be careful where and how it spends the revenue it receives from such a scheme.

## **Conclusion**

This paper has sought to identify the issues that must be considered by any urban area which seeks to introduce road pricing. Road pricing internalises the social cost of congestion and as a result, roads are used more efficiently and everyone can make welfare gains through time saved. Congestion charging has been shown to work in reality as well as in economists' models, helping to ease London's congestion and encouraging more to use public transport where available.

However, there are difficulties to be confronted with such a scheme. The potential for market failure in public transport systems decreases the likelihood of any charge being effective. Currently people have little option but to use their car, particularly in the greater Dublin area. There exist genuine public fears that welfare could decrease as a result of such a charge. It is also clear that the allocation of revenues from congestion charging needs to be transparent; in order to avoid public resentment it must not appear like a 'stealth tax' (as has been the case with the M50 toll).

If this transparency was achieved and some reform was to occur in the public transportation market, there exists no reason why congestion charging should not become a positive feature of life in Ireland's capital city.

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