

APPENDIX B: APPRAISAL AND EVALUATION

B-1 APPRAISAL OF THE LONDON SCHEME

The current scheme operating in London is very similar to one of the options adopted by the Road Charging Options for London (ROCOL) study group in 2000. As mentioned in that report, the aim of the ROCOL group was to study the (then) “present transport situation in London and the possible role of charging in meeting the policy objectives of the Mayor’s Transport Strategy for London”. This emphasizes the role of charging as a policy tool within a defined transportation strategy as outlined in Chapter 7.

Chapter 5 of that study report (GOL, 2000) provides a reasonably clear appraisal of the “core scenario” which involved a £5 licence charge (and a predictive £15 charge for HGVs) to drive within Central London between 06:00 to 20:00.

Table B-1 summarises the core impacts of the scheme.

Table B-1 ROCOL (GOL 2000) Sample Appraisal Result of Core Scenario

	£m / annum
Car benefits	
Journey time savings and reliability	50 to 85
Cost to car users	-160 to -200
Other costs	10 to 15
Commercial vehicle benefits	
Journey time savings and reliability	80 to 120
Cost to car users	-70 to -80
Other costs	10 to 15
Public Transport Benefits	
Bus journey times	5 to 10
Rail crowding	-1 to -2
Charging authority; transport operators, government	
Area license net revenues	-230 to -270
Net fare, parking revenues, fuel taxes	-45 to -50
Accident benefits	15 to 25
Total annual benefits	125 to 210
Annual Operating costs	30 to 50
Overall net benefits	95 to 180
Scheme implementation costs	30 to 50
Charging revenues	230 to 280
Penalty revenues	30 to 40
Scheme recurring costs	30 to 50
Net revenues	230 to 270

Source: GOL (2000)

In addition, as mentioned in Chapter 7, established methods adopt a combination of CBA as exemplified by the above Cost Benefit table as well as MCA approaches. Hence the report also examines the environmental (air quality), accessibility, employment and wider economic impacts of the charging and other potential tools (including work place parking levies) qualitatively.

B-2 EVALUATION OF IMPLEMENTED SCHEMES : LONDON

CBA should assist public debate and interpretation; in that regard, two independent studies are helpful if we can understand and consider the differences between them. In this section we give an example of the ex-post evaluation of the London scheme and summarise some of the issues surrounding the debate between Prud'homme and Bocajero (2005) and Mackie (2005) and Raux(2005) regarding the economic benefits from the scheme. Taken from Mackie (2005) and shown in Table B-2, we compare the evaluations of the London congestion charge carried out by Transport for London with that from Prud'homme and Bocajero.

Table B-2 Annual Costs and Benefits of London Congestion Charge Scheme (in millions € converted at £1 = €1.4)

Item Number	Item	TfL	Prud'homme and Bocajero
1	TfL Admin and other costs	7	
2	Scheme Operations	126	139
3	Additional Bus Cost	28	7
4	Charge payer's compliance costs	21	
5	Amortisation and interest	0	37
	Total Costs	182	183
	Time Savings:		
6	Business	105	} 68
7	Private	56	
8	Commercial Vehicles	28	
9	Bus Passengers	28	31
10	Reliability Benefits	14	
11	Reliability Benefits to bus users	14	5
12	Accident savings	21	
13	Disbenefits to transferred traffic	-28	
	Total Benefits	252	104
	Revenue	161	165
	Penalty Payments	70	
	Benefit Cost Ratio	1.4	0.6
	Revenue Cost Ratio	1.3	0.9

Source: Prud'homme and Bocajero (2005)

The following points arise from a comparison of TfL's analysis with PB.

- The values of time (for the time savings) assumed in PB was much lower than that assumed by TfL. In addition, if the traffic is differentiated as it is in Central London (i.e where the value of time differs widely between journey purpose) then it is not appropriate to use a single value of time for the conversion of all the time savings.
- Prud'homme and Bocajero did not consider safety and reliability benefits. In particular the latter can be substantial and contribute to as much as a third of the scheme (Small and Brownstone, 2005).
- Raux(2005) argues that there are clear difficulties associated with measuring the effect of reduced congestion and hence the magnitude of time savings and is clearly sensitive to the assumed pre charging and post charging speeds.
- The scheme's operation costs are very high and TfL's own analysis indicates that without the penalty payments of €70 m, the scheme will not break even (£182 > £161). This implies that there is nothing to distribute to improve the welfare of society through the toll regime.

B-3 EVALUATION OF IMPLEMENTED SCHEMES : STOCKHOLM

In addition to the work done on the London scheme, there has also been published papers on evaluations of the Stockholm scheme. In Table B-3 we compare the analysis of Prud'homme and Kopp (2006) and with that of Eliasson (2006)

Table B-3 Annual Costs and Benefits of Stockholm Scheme (in millions SEK)

Item Number	Item	Prud'homme and Kopp (2006)	Eliasson (2006)
1	Time gain for Car Users	+111	+496
2	Reliability gain for Car Users	0	+78
3	Losses for evicted car Users	-61	-68
4	Gain for mode/shifters	+12	0
5	Environmental/Safety Gains	+102	211
6	Toll Operating Cost	-240	-220
7	Public Transport Supply	-584	-64
8	Public Transport Congestion Costs	-222	
9	Reduced Fuel Tax Revenues		-53
10	Public Transport Revenues		+184
11	Marginal Cost of Public Funds	+122	+118
	Net Benefits	-768	+683

Source: Prud'homme and Kopp (2006)

The following points and questions can be raised from a comparison of these

- Eliasson's analysis assumes that a large proportion of time savings accrue to car users outside the congestion charging zone while PK only consider the time savings to users within the charging zone. This accounts for the main difference in Row 1
- The operating cost (item 6) is similar under both methods of analysis.
- The question of whether reliability benefits should be included is once again raised. The general consensus suggests that it should be; the problem is how it can be estimated and disentangled from other effects.
- Simultaneous with the implementation of the trial congestion charge in Stockholm, there was an increase in fuel duty of 5% applicable to the whole of Sweden as well. Therefore the question of causation is raised i.e. can we attribute external to zone time savings to the congestion charge or to the fuel duty? PK argue that traffic would have fallen by 5% based on increase in fuel duty alone while Eliasson's analysis suggests that there would be no (or at least limited) changes due to fuel duty.
- In item 7, Prud'homme and Kopp includes in the public transport costs the costs of additional suburban buses to the congestion charging scheme; Eliasson does not include them. Are there no Mohring effect benefits to existing uses? Are the costs of additional buses part of the assessment?
- The additional rail capacity costs under both analysis are very different. Prudhomme and Kopp argue that the overcrowding costs amount to 222 M SEK/ year (Item 8). Is it correct to apply the whole of the percentage change in standing to the whole of the rail/bus traffic for the whole of the in-vehicle time?