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## Transport and the Economy

Submission of evidence to the House of Commons Transport Select Committee

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## Summary in relation to three of the Committee's Questions

*Have the UK's economic conditions materially changed since the Eddington Transport Study, and if so, does this affect the relationship between transport spending and UK economic growth?*

The Eddington analysis showed that the attempt to reduce congestion by infrastructure improvements, but without road pricing, would be associated with deteriorating conditions not improving ones, due to the scale of traffic growth expected.

Apart from the immediate effects of the recession itself, there are some important revisions that need to be made to the Eddington analysis. These are (a) traffic growth trends, and their relationship with income growth, seem to be quite different from those which have underpinned most transport appraisals, and this substantially predates the recession; (b) the treatment of indirect tax in appraisals used in the period 2003-2009 (including implicitly by Eddington) has quite rightly been changed; (c) there is now much evidence on a wider set of transport alternatives, not only traditional infrastructure improvements. Taken together, there are in some ways *more* favourable possibilities in spite of financial stringency, and there are ways of getting better value for money even in the context of cuts.

*What type of transport spending should be prioritised, in the context of an overall spending reduction, in order best to support regional and national economic growth?*

By far the best value for money is currently coming from spending on 'smarter choices' (travel planning, car-reduction policies, telecommunications as alternatives to some travel, etc), local safety schemes, cycling schemes, and the best of local bus and some rail quality and reliability enhancements. There are also unrealised opportunities for high benefit new light rail systems in some places. Traditional road capacity schemes are now giving much lower estimated value for money.

Intention is not the same as outcome, and some transport interventions may have a perverse effect on economic efficiency, due to traffic trends where economic costs are not directly charged, and to the 'two-way road' problem.

*How should the balance between capital and revenue be altered?*

The problem is that the cheap, swift, high value for money, popular policies are often classified as 'revenue' (even when they save capital spending) whereas many of the expensive, slow, lower value for money, controversial projects are classified as 'capital' (even if they involve more revenue spending in the long run). This distorts decision-making. It is essential to have flexibility to move between capital and revenue, the same funding stringency applied to both, and/or a greater ingenuity in accepting re-classification.

## 1. The Eddington Report: reminding ourselves what the analysis really showed

As always with long and complex reports, the results can be mis-remembered. For a full picture it is necessary not only to look at its summary, but also the technical work, notably in the main report<sup>1</sup>, its important Volume 3<sup>2</sup>, and a technical annex with modelling results provided by the Department for Transport<sup>3</sup>.

It is true that the Eddington Report focussed on reducing congestion in urban areas, key inter-urban corridors, and key international gateways. However, this one sentence summary misses some very important parts of the underlying analysis. These showed that the attempt to meet these objectives by expanding infrastructure investment but without road pricing would not in fact lead to an improvement in congestion, but steadily worsening travel conditions. It 'made things worse more slowly' rather than 'making things better'.

Now that road pricing is off the political agenda, at least for a while (and perhaps ever?), this message becomes very salient. There is an argument about whether the effects of transport on the economy are in addition to the conventional assessed transport benefits especially time savings, or simply a re-expression of them, but in any case it is clear that if there are weak transport benefits, there is little driving source of wider economic benefits. People do not make investment and increase employment because they are convinced that things could be even worse, but because they see evidence that things will get better.

The evidence for such worsening conditions is seen in the DfT model results in the Annex.

### Table 1: DfT Modelling Results Showing Congestion Getting Worse, in the absence of road pricing, even with a very large road building programme

Table 5.1: Road build in Intervention Scenarios

England, Road Lane Km	2015	2025		
Scenario	'Baseline' Scenario	'Baseline' Scenario	Economically Justified, No Road Pricing	Economically Justified, With Road Pricing
HA Road Lane kms - additional to 2003	1,590	3,500	4,850	2,300
HA Road Lane kms - change from 2015 Baseline		1,900	3,250	700
HA Road Lane kms - change from 2025 Baseline	-	-	1,350	-1,200
Traffic (Change from 2003)	22%	31%	32%	22%
Average Delay per vehicle km (Change from 2003)	25%	30%	28%	-37%

<sup>1</sup> Eddington R (2006) 'Transport's role in sustaining UK's Productivity and Competitiveness: The Case for Action'. Department for Transport, London

<sup>2</sup> [Volume 3 - Meeting the challenge: prioritising the most effective policies](http://collections.europarchive.org/tna/20070129122531/http://www.hm-treasury.gov.uk/media/39E/F8/eddingtonreview_vol3.0_011206.pdf)  
[http://collections.europarchive.org/tna/20070129122531/http://www.hm-treasury.gov.uk/media/39E/F8/eddingtonreview\\_vol3.0\\_011206.pdf](http://collections.europarchive.org/tna/20070129122531/http://www.hm-treasury.gov.uk/media/39E/F8/eddingtonreview_vol3.0_011206.pdf)

<sup>3</sup> Department for Transport (2006) Transport Demand to 2025 and the Economic Case for Road Pricing and Investment, DfT London December

In the last row there is the preferred measure of the severity of congestion. It is seen that with road pricing (and with the substantially reduced road programme that would then be implied) there is a significant net *improvement* in the level of congestion, measured as a 37% fall in the average delay: most of this effect is due to the pricing itself. However, in the without road pricing case, even with the very much larger road construction programme that would then, under the assumptions, be warranted, congestion actually gets worse, giving an increase of 28% in average delay.

This reinforces a widely observed phenomenon, namely that most or all road proposals, appraised assuming no road pricing, provide their benefits in the form of ‘slowing down the pace at which congestion gets worse’, as measured not against an observable starting point, or any actual experience of road user, but against a 60 year forecast sometimes called the ‘do-nothing’ option. Thus the appraisal will interpret this difference between the two forecasts as a benefit, but the road user will *experience* a progressive worsening of travel conditions. It is not sensible to expect that this will lead to wider economic benefits, except in a peculiarly negative sense.

## 2. Revising and updating the Eddington analysis

Having made this caveat, a good summary of the key results of the Eddington Report, expressed in terms of Benefit-Cost Ratios (BCRs), is provided by Dodgson (2009)<sup>4</sup> as shown in Table 2.

**Table 2 Dodgson’s (2009) Summary of Eddington Results**

<b>Sector</b>	<b>No. of projects</b>	<b>Ave BCR</b>
Highways Agency Schemes	93	4.66
Local Road Schemes	48	4.23
Local Public Transport Schemes	25	1.71
Rail Schemes	11	2.83
Light Rail Schemes	5	2.14
Walking and Cycling	2	13.55
<b>Total</b>	<b>184</b>	

At face value the results seemed to suggest that walking and cycling schemes gave the best value for money, then highway schemes, then public transport schemes. Policies such as smarter choices were not included as there was insufficient data available (or at least, known to the Eddington team) at that time.

<sup>4</sup> Dodgson J (2009) Rates of return on public spending on transport, RAC Foundation, London  
[http://www.racfoundation.org/assets/rac\\_foundation/content/downloadables/rates%20of%20return%20-%20dodgson%20-%20190609%20-%20report.pdf](http://www.racfoundation.org/assets/rac_foundation/content/downloadables/rates%20of%20return%20-%20dodgson%20-%20190609%20-%20report.pdf)

The most important departures from the Eddington assumptions that I would now suggest relate to (a) new interpretations of changing trends that were already happening, especially in relation to trends in traffic growth; (b) new appraisal rules adopted by the DfT especially in relation to indirect tax; and (c) the need for closer attention to those expenditures which appeared to score well, but for which the report had little data. All of these have a substantial effect on the Eddington conclusions.

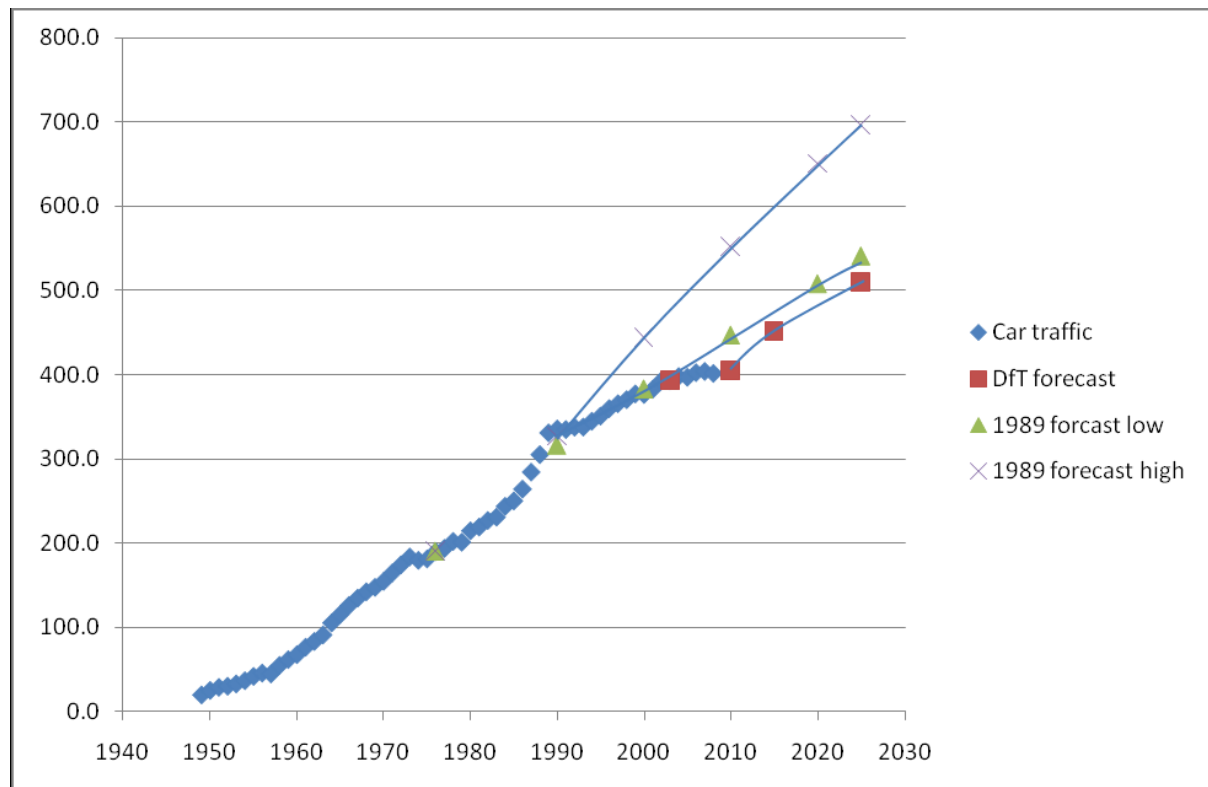
**(a) Traffic growth.**

The Eddington work followed the then DfT official assumptions about long term traffic growth which in some respects now seem implausible. This especially relates to a flattening (and some signs of reduction) in car use *preceding* the recession, perhaps going back as far as the early 1990s when there was an important shift, not noticed at the time, in the relationship between traffic growth and economic growth. Sometimes called ‘decoupling’, this meant that increasing incomes were associated with a declining, less than proportional growth in traffic, rather than the increasing, more than proportional relationship which had applied previously.

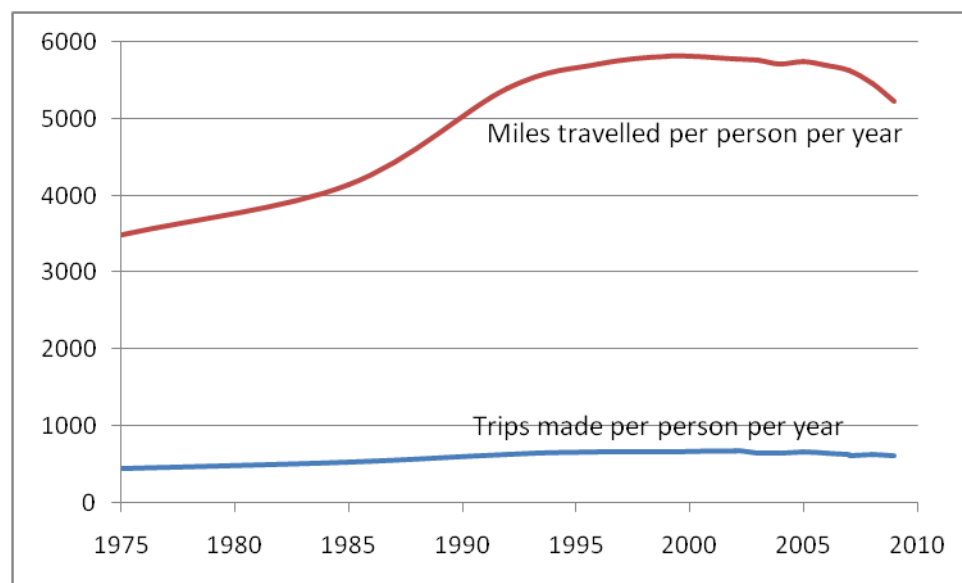
The consequence of the then Eddington assumptions (which are thought still to be the view of DfT officials) was that the long term trend in congestion was inexorably expected to be getting worse, even if an unaffordably large and politically untenable road construction programme were initiated. Only road pricing would bring about an actual improvement, but this itself was also deemed politically unacceptable. If these trends are softer, or go into reverse, then it is possible to make improvements in transport efficiency with less drastic and divisive policies, which in turn gives a more optimistic prospect. The research is not yet definitive, but recent discussions among researchers show this interpretation must be taken seriously, not dismissed out of hand.

All the infrastructure schemes appraised in the last two decades have been on the basis of assumptions about future traffic using, or based on, Department for Transport forecasts. These have typically been based on high and continuing rates of growth of car use, which increases expected future congestion and hence raises the estimated benefits of expanding road infrastructure, as well as putting downward pressure on the demand for non-car transport. However, since 1989 the actual growth in traffic has been very much less than forecast, and currently is actually reducing. (The latest year of data will reflect recessionary pressures, but the change in trend clearly started well before that). Figure 1 shows the long term trend in car traffic compared with the former and current DfT forecasts, and Figure 2 shows more detail on the recent period of car trips and distance travelled.

**Figure 1. Trend in car traffic since 1950, and DfT 1989 and 2007 forecasts**



**Figure 2. Car Trips and Car Distance Travelled, per person, 1975-2009**



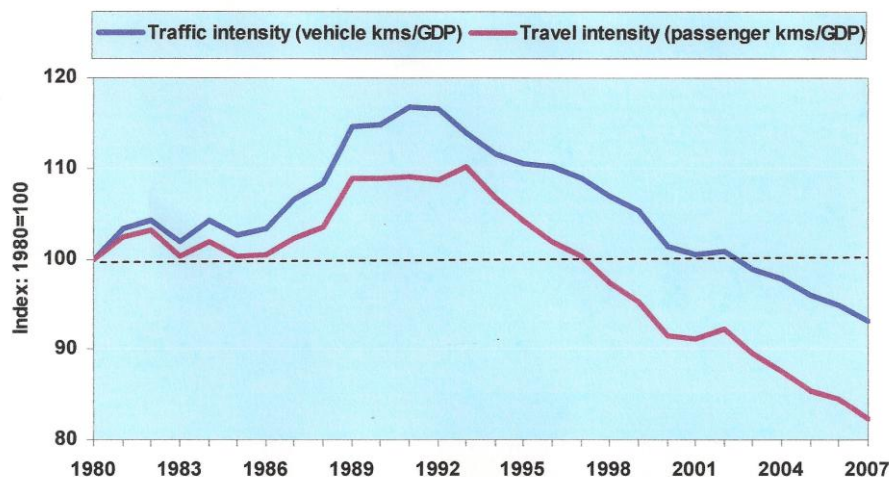
Source: Chained from DfT National Travel Surveys, 2010, 2004 and 2001

Nobody has yet fully explained this shift in trend, but it is obvious that the shift has predated the current recession by a considerable period. One very important indicator is ‘transport intensity’, which measures the association between traffic growth and economic growth. Generally speaking they tend to rise and fall together, to some extent (which does not of itself

prove a cause-and-effect relationship) but it is notable that this relationship has changed substantially over the last twenty years, as shown in figure 3 (numbered 1.2b in the original).

### Figure 3: 'Decoupling': A shift in the relationship between traffic and economic growth

Trend 1.2b – Road traffic and travel intensity: 1980 to 2007, Great Britain



Source: Department for Transport and Office for National Statistics

Thus until the early 1990s, economic growth was associated with high and increasing traffic growth. Since then, it has been associated with lower and decreasing traffic growth. This is indeed what policy would have intended, giving very favourable possibilities of economic growth without excessive congestion or environmental damage, and declared policies of both Conservative and Labour administrations have sought to achieve this. Indeed it is interesting that the time of a policy shift in relation to road building, environmental impacts, and traffic growth occurred in the period 1990-1994 (notably associated with Gummer, Portillo and Mawhinney) with a consistent development in 1997-8 (notably associated with Prescott), though it is not usually thought that their policies could have been powerful enough to result in such a marked shift on their own. However, whatever the reason, I would argue that the scale of car traffic growth implied by the earlier DfT forecasts, and used by Eddington, is no longer plausible. Given that assumed continuation of the earlier trends underpins all the road BCR calculations, it is necessary to reconsider this substantially. Whether the future is of continuing falls in car use, or a return to some stable or slightly increasing level, there is no evidence for such large growth as previously. The effect will unambiguously be to reduce the estimated value for money of road schemes compared with the Eddington calculations. .

The problem is how big to make the adjustment, since this would require redoing all the modelling and forecasting with new assumptions. However, some indication may be given from a different, but related, issue, which in fact had been recalculated for the Eddington appendices. This concerns what would happen if there were road pricing at some point in the future during the 60 year appraisal period of road schemes. (In this case we are using the road pricing results not as part of an argument about road pricing itself, but as the best available evidence about what effect a more favourable pattern of traffic would have on the value for money of infrastructure spending).

This is seen in model results from the Department for Transport annex to the Eddington Report, which I have reformatted for comparability, as shown in table 3.

**Table 3 Marginal Benefit-Cost Ratios for Road Building With and Without Road Pricing, according to the DfT's National Transport Model**

<b>Additional Lane Kilometres</b>	<b>Marginal BCR without road pricing</b>	<b>Additional Road Kilometres</b>	<b>Marginal BCR with road pricing</b>
		<b>350-550</b>	<b>1.5</b>
		<b>550-700</b>	<b>1.5</b>
		<b>700-850</b>	<b>1.1</b>
		<b>850-1150</b>	<b>1.0</b>
		<b>1150-1500</b>	<b>1.1</b>
<b>1450-2250</b>	<b>3.0</b>	<b>1500-2450</b>	<b>0.9</b>
<b>2250-2750</b>	<b>2.3</b>	<b>2450-3700</b>	<b>0.7</b>
<b>2750-3250</b>	<b>1.2</b>		
<b>3250-3350</b>	<b>0.7</b>		
<b>3350-4450</b>	<b>1.0</b>	<b>3700-4600</b>	<b>0.7</b>
<b>4450-5200</b>	<b>-0.1</b>		
<b>5200-6150</b>	<b>0.2</b>		

The results show that the incremental benefit of extra road construction declines the more one builds, both with and without road pricing. The reduced overall traffic level, and its relocation in less congested conditions, resulting from road pricing substantially reduces the estimated benefits obtainable from road building: the modelling suggested there would be an economic case for building 3250 lane kilometres by 2025 if road pricing is *not* implemented, but only 700 lane kilometres if it is, a reduction in the warranted road programme of nearly 80%. Comparing like with like, road pricing reduces the BCR of road spending substantially, eg by 70% in the roughly overlapping category 1450-2250 lane kilometres in the table (from a good BCR of 3 to an unacceptable BCR of 0.9, a reduction of two thirds. The reason for this is mainly that the problems of congestion which the road building had been intended to solve, would be largely already solved by more rational pricing, so that the extra benefit of building the roads is small compared with their cost.

Thus one of the indirect financial consequences of road pricing would be the saving of funds on unnecessary road building. (Since it also generates net revenue itself, there is a double whammy effect on public finances, a feature which may lead to a re-growth in policy interest



by Government in the future. Indeed it may be a triple whammy, since it would also be expected to reduce the need for at least some public transport revenue support, because of the more buoyant market conditions that would apply, and possibly increase the proportion of public transport infrastructure spending that would be profitably funded internally). For the time being however I assume that all the policy assessments are made on the assumption of **not** implementing road pricing, which is why the economic impacts can in some cases be perverse and unintended.

The mechanisms by which road pricing brings about a reduction in congestion are not the same as those by which a reduction in traffic growth for other reasons brings about a reduction in congestion, but the orders of magnitude of effect seem prima facie comparable. At the moment I assume that the scale of impact on benefits which would be available from road pricing is broadly similar to the scale that would be caused by other transport policies (eg a combination of smarter choices, public transport improvements, etc, though these would certainly be a more expensive way of achieving them), and that the scale of effects that would be brought about by spontaneous other changes in trend are capped at the same level, though in principle of course they could be greater. Thus the reduction in BCR on road schemes due to road pricing is used provisionally as a measure of the effect of other sources of reduced traffic growth.

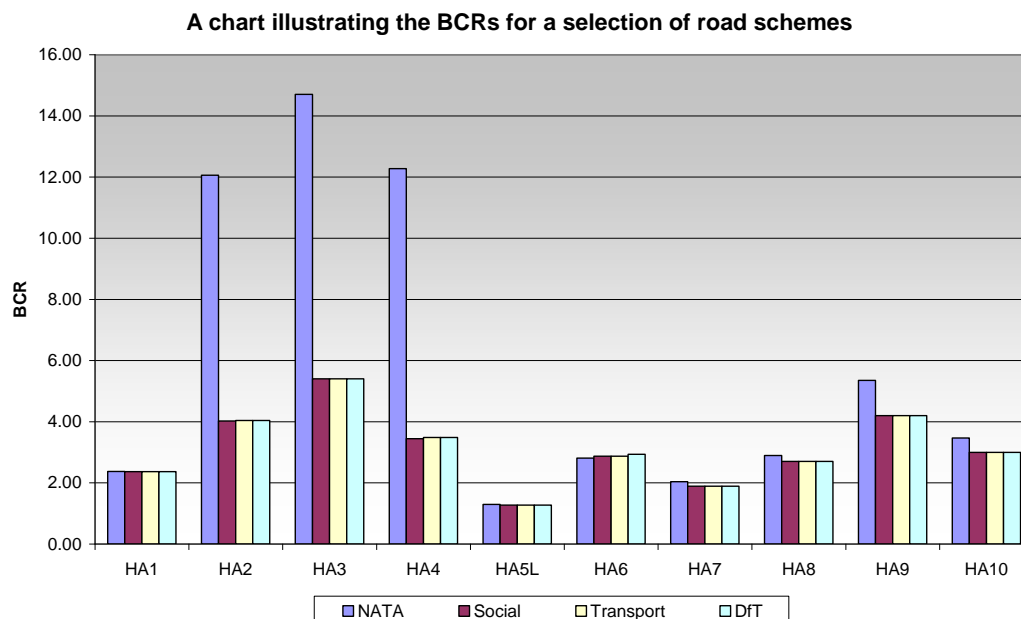
### **(b) Indirect Tax**

In the period 2003 to 2009 the DfT used a rather non-standard method of social cost benefit analysis, such that the indirect tax consequences of a project were included as benefits or costs. For example, if a road scheme induced traffic which generated more fuel tax revenue, the extra revenue was treated as a reduction of the cost of the scheme. This approach became increasingly criticised as it appeared to be biased towards roads schemes and against public transport and especially against those where traffic reduction was actually intended as a policy objective. It appeared to build in an incentive to public stakeholders to adopt policies which were in direct conflict with objectives of efficiency and environmental protection. In 2009 DfT decided (rightly, in my view) that this approach was not going to be continued, and from 2010 new schemes are being assessed using a different approach, in which tax effects – though clearly of course important in themselves – are not confused with the ratio of benefits to costs of the scheme itself.

The DfT<sup>5</sup> retrospectively reworked 10 Highways Agency schemes, as shown in Figure 4.

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<sup>5</sup> O'Sullivan P and Smith S (2009) So you thought you understood value for money? GES Conference July, DfT



The now abandoned approach is violet in the figures, labelled ‘NATA’. In 8 of the 10 cases the BCR given under the former NATA approach (in violet) is higher than any other criterion, and in three of these cases the difference is very substantial indeed, a BCR of the order of 12-15 in cases where the three other methods all give BCRs of the order of 3-5. This result is reinforced by work by Buchan (2009), who carried out an analysis of a small number of specific schemes, including some whose BCR will be better under the new approach. His results<sup>6</sup> are shown in Table 4, (numbered 1 in the original).

Table 1: Summary of comparative results under different NATA assumptions

	Benefit Cost Ratio (BCR) under original appraisal model	BCR under revised appraisal model	BCR under appraisal model with further reforms
Tram Merseytram	1.97	2.07	2.85*
Cycle Grand Union Canal Cycle Path	38.4	75.0	75.0
Road Improving the A14 between Ellington and Fen Ditton	10.83	6.69	1.3 – 3.25**
Bus Guided busway Cambridge to St Ives	4.8	6.4	7.9**
Rail Freight Expansion of rail freight (Felkstone – Nuneaton)	5.25	10.4	10.4***

\* Based on moving to a 60 year appraisal. The Merseytram case study provides several examples of how small changes in the treatment of tax revenues has a strong impact on the benefits (see the main report, *Investing in Transport: Making the Change*)

\*\* Based on limited data

\*\*\* The carbon benefit of the rail freight scheme was already factored into the original analysis hence there is no change

The direction and order of magnitude of change for road schemes is broadly consistent with the DfT schemes reported above. In some other cases the change is in the opposite direction, notably the busway, rail freight scheme, to a lesser extent Merseytram, and very substantially for the Cycle scheme where an already very large BCR (calculated by the DfT) is made

<sup>6</sup> Keith Buchan, cited in Cary R, Phillips R and Harwood J (2009) The right route: improving transport decision-making, Green Alliance, November. [http://www.green-alliance.org.uk/grea\\_p.aspx?id=4619](http://www.green-alliance.org.uk/grea_p.aspx?id=4619)

substantially greater. This is entirely in accordance with what one would expect. The biggest class of schemes affected are those whose indirect effect is to increase tax revenue, primarily by inducing more traffic. These are mainly the bigger road schemes. The new rules will reduce their BCRs, compared with the 2003-2009 rules which produced the data used by Eddington.

Other schemes which would be affected in the opposite direction are those whose indirect effect is to reduce tax revenue, primarily by reducing traffic, but potentially also by increasing fuel efficiency. This would include smarter choices, cycling and public transport improvements. The new rules would *increase* their BCRs compared with the 2003-2009 rules.

An adjustment to take account of tax changes can be made unambiguously in the case of most road schemes, since nearly all the available BCR results in recent years will have been made according to the now abandoned method. By inspection of the DfT and Buchan results, a cautious adjustment would be to reduce the BCRs of the apparently best-performing schemes by half, the next best by 20% and the next tranche by 5%. However, without inspecting the detailed studies individually it is not clear how much to increase the results for the opposite effect, since some of them ignored the DfT recommended procedure during this period (eg smarter choices), and others require a more detailed study to assess on a case by case basis (especially public transport improvements). Therefore the results are not formally amended, though this is likely to result in some degree of underestimate of the benefits of the latter, especially where the studies were done by DfT, or according to its recommendations.

### **3. What type of transport spending should be prioritised, in the context of an overall spending reduction, in order best to support regional and national economic growth?**

First, two caveats.

1. There is an argument about whether the contribution of transport to economic growth is *additional* to the economic value of effects measured in cost-benefit studies, or simply a *re-expression* of the same benefits. Eddington was mainly concerned with circumstances where an additional impact may be taken as additional benefit. The preceding SACTRA<sup>7</sup> study, 1999, had given more attention to the nature of the conditions for this ‘additionality’, and as a result argued that in cases where certain types of market imperfection exist (especially where transport decisions cause economic costs which are not charged for, and sometimes where transport-using firms are themselves subsidised or inefficient), the additional economic effects of transport improvements can be bad for the economy not good, by encouraging a greater volume of traffic which does not pay its way. But in any case, it is probably agreed that there will not be wider economic improvements unless there are narrower transport improvements (speed, reliability, cost, etc) to start with. Having good value for money in transport terms is a necessary (bit not sufficient) condition for good value for

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<sup>7</sup> SACTRA (1999) Transport and the Economy, Standing Advisory Committee on Trunk Road Appraisal, Department for Transport, London.

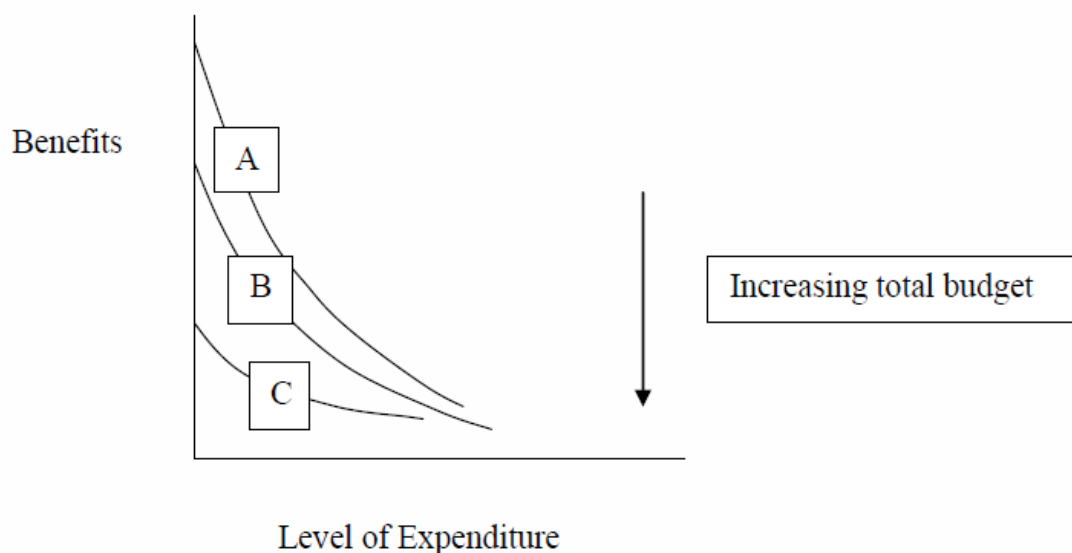
money in terms of economic impact. Therefore distinguishing between ‘transport getting better’ and ‘slowing down the pace at which transport gets worse’ is crucial.

2. Concerning regional effects, it must be remembered that transport impacts are geographically specific and do not necessarily benefit the intended area. Thus benefits known as ‘agglomeration’ mostly relate to for high income areas of intense economic activity such as town centres, whereas benefits known as ‘regeneration’ are mostly intended for areas of low incomes, perhaps unemployment, and less intense activity. Intended improvements can sometimes make things worse for these areas, due to the well known ‘two-way road’ problem, which is usually tactfully not mentioned. (See Appendix).

Having made these caveats, it is logical to start discussion of value for money by consideration of benefit cost ratios, as Eddington did. The Benefit-Cost Ratio (BCR) of a project is an estimate of its value made by comparing its real resource costs with a wide range of economically-valued benefits including effects on some or all of congestion, accidents, carbon, health, local environment, travel time, consumer satisfaction and wider effects on the economy which might be generated by these benefits. It is not a perfect measure, not coping well with strategic interactions of policies and projects or considerations of fairness and political acceptability, and in practice very many assumptions are built in which can have the effect of giving answers which are biased for or against certain types of projects.

The approach I use is similar in underpinning to Eddington’s, but with a somewhat different presentation. It is based on the idea that for each area of expenditure (road building, public transport improvements, smarter choices, etc) the benefits of properly judged spending increase as spending increases, but usually at a declining rate, so that that the best projects at the top of the list will have a bigger benefit and higher value for money than the marginal projects at the bottom of the list. This can be depicted as in figure 5, for the expenditure classes A, B, C etc.

**Figure 5. Incremental benefits from successive increases in spending**



It follows generally that the more is spent on a particular area, the lower the benefits. Although there is no presumption that decisions already made in the past will have been

optimised, in general it is likely that the more mature the field of application, the more of the very best projects will already have been identified and carried out, so a mature class of expenditure may well have lower BCRs than it used to have, and lower also than new emerging fields. This does not mean that the new is always better than the old, but does mean that it is more likely to have unexplored potential.

## Results

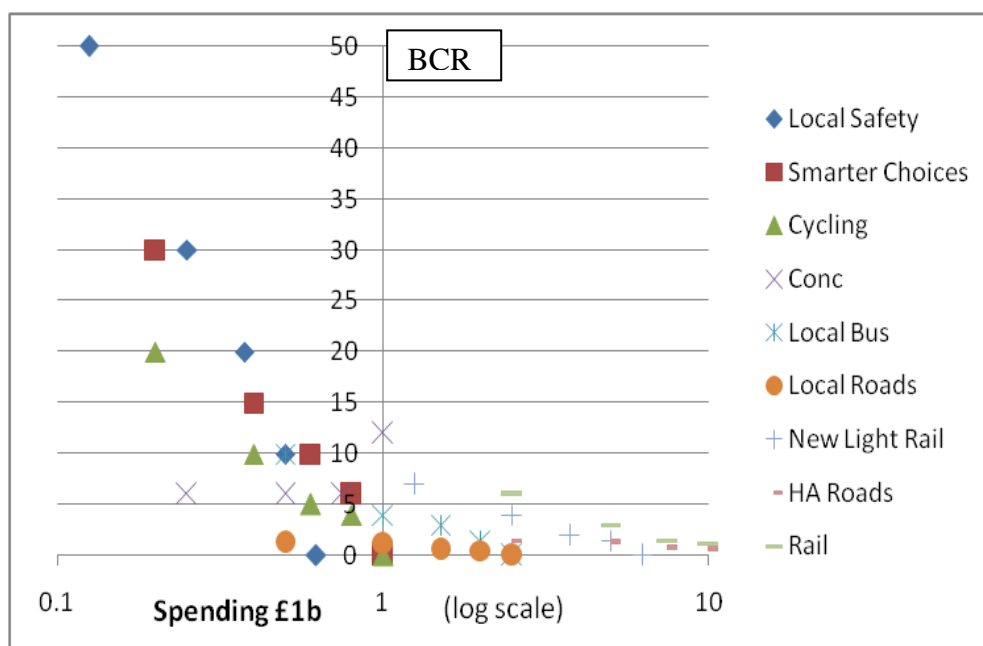
Table 5 and Figure 6 show the results<sup>8</sup>.

**Table 5: BCRs by Quartile of Expenditure in Nine Areas of Spending**

Exp £b	Local Safety	Smarter Choices	Cycling	Conc Bus Fares	Local Bus	Local Roads	New Light Rail	HA Roads	Rail
0.125	50								
0.2		30	20						
0.25	30			6					
0.375	20								
0.4		15	10						
0.5	10			6	10	1.3			
0.6		10	5						
0.625	0								
0.75				6					
0.8		6	4						
1		0	0	12	4	1.1			
1.25							7		
1.5					3	0.6			
2					1.5	0.5			
2.5					0	0	4	1.5	6
3.75							2		
5							1.5	1.25	3
6.25							0		
7.5								0.7	1.5
10								0.6	1.2
12.5								0	0

(Results after adjustment for traffic growth, indirect tax, and omitted elements)

<sup>8</sup> A longer report gives technical details of assumptions, sources and methods. I have provided a copy to the Committee Transport Specialist, and it may also be obtained by emailing me at [philineh@yahoo.com](mailto:philineh@yahoo.com)

**Figure 6 Value for Money Related to Expenditure**

A strong pattern is now emerging of which types of transport expenditure have the greatest value for money in terms of speeds, travel times, safety, and other economic costs such as health. In summary, by far the best returns come from smarter choices, local safety schemes, cycling schemes, and the best of local bus and some rail quality and reliability enhancements, together with new light rail systems in some places. Traditional road capacity schemes are now giving much lower estimated value for money than cited in Eddington, due (a) to a change (for the better) in the way that taxation is accounted for in the studies, and (b) the effects of lower traffic growth, whether due to road pricing, other policies, or to changing trends.

In current circumstances, it turns out that by far the best value for money is being gained from Group 1, consisting of low budget items, namely local safety schemes, smarter choices, and cycling schemes. The next in order of value for money is Group 2, including some cheap and some more expensive public transport improvements, namely the best local bus schemes, and the best new light rail and conventional rail schemes.

However, Group 3, consisting mainly of Highways Agency and Local Roads schemes, gives much poorer results (even for the best schemes) after allowing for the new approach to indirect tax, and if allowance is made for the damping effect on traffic growth either of road pricing, or of some combination of other policies with the same impact, or on changes in traffic trends due to other reasons.

Therefore the best overall value for money will be gained from *increasing* the expenditure on the first group, *protecting* the best projects in the second group, and *making savings* mostly from the worst projects in Group 2, and all except the very best in Group 3.

Although carbon considerations have played only a very small part in the calculations, the resulting pattern of recommended expenditures is very supportive of carbon objectives.

Road pricing is not itself included in the analysis: since it produces both revenue and net social benefit, it will inevitably count better as 'value for money' than any of the spending policies included. However, it is allowed for in testing the robustness of other policies: road pricing would (like reduced traffic growth for other reasons) reduce the value for money of road building. It could also increase the ability for public transport to fund its own improvements.

Concessionary fares spending similarly is not quite comparable, but it does seem to produce a good level of social and economic benefits.

Road maintenance, pedestrianisation of town centres, traffic calming (other than safety schemes) and traffic management are not yet included in the analysis. I believe it would be very worthwhile to do so.

The results are provisional, to test the feasibility of the method, availability of data, and robustness of the conclusions. Qualitatively they seem in line with common sense and strategic priorities, but the exact numbers would be influenced by detailed data which could be published by the DfT, and further more substantial analysis and remodelling.

It is interesting to note that a recent report by the industry lobby group London First<sup>9</sup> suggested that the wider economic benefit was the highest proportion of total benefit for urban public transport schemes, with interurban road schemes having a very much smaller effect.

### **How should the balance between capital and revenue be altered?**

The main problem is an artificially strict imposition of the distinction between capital and revenue spending especially in the case where well-judged revenue spending (such as on smarter choices) actually makes it possible to make larger savings in capital. In these cases, it is sometimes necessary to forego the saving, making less efficient use of funds, because of the implicitly 'higher' importance of capital. The problem would be solved by suitably ingenious redefinition, giving local authorities some flexibility, which they would like and which would give better value for money.

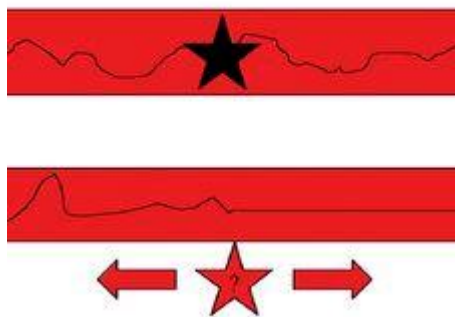
Many of the best expenditures traditionally are classed as 'revenue' expenditure rather than 'capital'. To get maximum benefit it is essential to have some form of interchangeability or trade-off such that (for example) revenue spending which saves a greater amount of capital spending can be counted under the rules for capital expenditure. Otherwise there is a serious danger that the best value projects will be wiped out while inferior spending is protected.

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<sup>9</sup> London First (2010) Greater Returns Transport Priorities for Economic Growth, London, June. The report also suggested that the wider economic benefit from transport spending in London was a greater proportion of total benefit than in other places.

## Appendix. The ‘Two-Way Road’ Problem

### The ‘two-way road’



Suppose road improvements are used with the intention of improving the balance of international trade (usually called ‘to help exports’) or to increase the economic efficiency of an area (usually discussed in terms of ‘attracting inward investment’), or giving access to jobs over a wider area. The problem is that such projects may instead have the opposite effect, ie increasing imports rather than exports, or encouraging outward investment, or giving improved job opportunities to people outside the area, etc. The SACTRA report ‘Transport and the Economy’ emphasized the importance of considering such unintended effects as well as the intended ones, and formal advice from the DfT reminds scheme promoters that they need to include such effects in their analyses, but in practice it is virtually never done. All the effects are assumed either to be positive, or negligible, never negative. (Hence the use of phrases like ‘wider economic benefits’ rather than ‘wider economic impacts’).

The classic case is as follows. Consider a long but rather simple country, with uniform density, which has a single rather poor quality road, running East-West. There is a single distribution company, considering where to locate. It may be proved (and is intuitively rather obvious) that the best place for it to locate is at the half-way point. Here it will get maximum access to the whole country with minimum transport costs. Now this half way point happens to be the boundary between two regions, who are competing for tax revenue, employment opportunities and the signs of economic progress. They are controlled by different political parties, and the party in the East decides to make a substantial improvement in its half of the road, straightening and widening it, to enable faster travel. This is intended to attract the distribution company over the border into its region. The administration in the West does nothing.

The directors of the company are in fact wondering about relocating because their lease is up for renewal. They now consider – with the new transport arrangements, where is the best place for them to locate? Should they move? And if they do, in which direction?

(As a student essay, I usually leave this question open, and it is offered to Committee members as an interesting thought exercise).