

# **THE TRANSPORT ECONOMIST**

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# **Trans European Transport Networks Impacts and Assessment**

Professor Roger Vickerman  
Centre for European, Regional and Transport Economics, University of Kent

University College London  
23 February 2005

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Professor Vickerman first outlined the origins and development of TENS as an EU wide network of roads, rail tracks, airports, international sea ports, inland ports and traffic management systems introduced in EU Treaty of 1993 (Maastricht treaty) and subsequently expanded in the TENS guidelines adopted in 1996. The intention was to integrate national transport networks, thereby increasing European cohesion, linking the peripheral regions more closely with the centre and improving transport efficiency and safety.

The programme comprises fourteen priority “Essen” projects identified by EU Heads of State in 1994 and a further sixteen priority projects added in 2001 – 2003. Total cost was estimated (1996) at €400 billion with the projected size of the network in 2010 to be:

75,200 kilometres of roads

78,000 kilometres of railways

330 airports

270 international seaports

210 inland ports

Plus traffic management systems, user information and navigation services

Substantial progress has been made on flagship projects but only five of the original fourteen “Essen” projects will be complete by 2007 (table 1) and the rest will only be partly completed by 2010 (table 2). The horizon for the full programme is now 2020 and the programme was further enlarged from 2004 to include new EU countries and cope with increased trade and traffic.

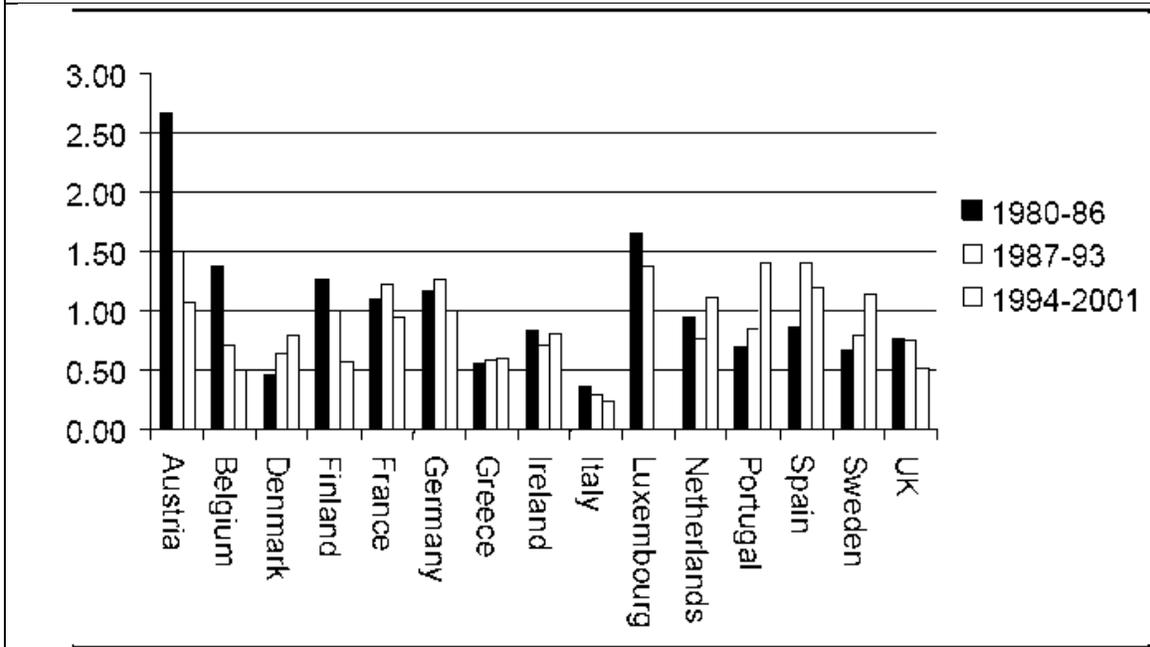
<b>Table 1: Projects finished by 2007</b>		
<b>Projects or sections of projects completed by 2007</b>		<b>Date of start of operation</b>
PP2	High Speed Train Paris-Brussels-Cologne-Amsterdam-London	2007
PP5	Betuwe line	2007
PP9	Rail line Cork-Dublin-Belfast-Stranraer	2001
PP10	Malpensa airport (finished)	2001
PP11	Oresund fixed link (finished)	2000

The current cost estimate is now €600 billion for the completed network by 2020 of which €225 is for the priority projects. Total Community funding 2000 – 2006 is about €23 billion in total plus approximately €7 billion per annum (in 2000) from EIB loan funding. In addition to EU funding and EIB loans, national funding, guaranteed loans, private sector funding and direct user contributions will be required.

<b>Table 2: Projects due to be finished by 2010</b>		
<b>Projects or partially completed by 2010</b>		<b>Date of start of operation</b>
PP1	Berlin – Verona	2009
PP3	Southern TGV (Spain)	2010
PP4	TGV East	2007
PP6	Lyon – Turin – Trieste (Turin – Venice section only)	2010
PP7	Greek motorways	2008
PP8	Multi-modal link Portugal/Spain – rest of Europe	2010
PP12	Nordic Triangle	2010
PP13	Ireland - UK – Benelux road link	2010
PP14	West Coast Mainline	2007

Figure 1 shows how transport investment as a percentage of GDP has fluctuated in the three time periods, 1980-86, 1987-93, 1994-2001 in the fifteen member states.

**Figure 1: Transport investment as a % of GDP**



Professor Vickerman outlined the issues to be covered in appraising what at first sight might appear to be an international network inspired by old fashioned Keynesianism or perhaps by the US Federal Highway Network. These include:

- The contribution to integration and cohesion
- Spill over issues (e.g. interoperability on railways etc)
- Objective improvements in accessibility, economic performance and welfare
- Investment vs. performance (capacity and congestion, sustainability, network management).

There is a need to balance local and international issues, bearing in mind that whilst the primary objective of the network as a whole is international, most of the traffic on it will be national and in fact local.

The methodology developed has taken account of new approaches, including land use transport interaction models, computable general equilibrium models and multi-criteria analysis as well as conventional appraisal summary tables.

The core econometric modelling under the ESPON 2.1.1 programme has been based on the first two approaches, using the SASI advanced LUTI model (Wegener) and the CGEurope spatially computable general equilibrium model (Bröcker). The SASI model forecasts changes in accessibility, leading to changes in production, population distribution and hence per capita GDP. The

CGEurope model evaluates changes in implicit transport costs leading to direct estimates of welfare effects, expressed as changes in the percentage of GDP. The latter is probably a more accurate measure, but only estimates comparative static effects whereas dynamic effects may well be very significant.

A network comprising over 1300 zones with a highly detailed national and regional transport network including available plans to 2020 has been developed and 11 prospective policy scenarios covering a range of infrastructure expansion programmes and pricing policies have been evaluated.

The results of these model runs were discussed on the basis of the aggregate effects for each model and also a series of fascinating regional maps showing the distribution of forecast changes. These are available to TEG members in .PDF form. The ESPON Reports may be found at: [www.espon.lu](http://www.espon.lu) .

Comparisons of the SASI forecasts of aggregate accessibility and cohesion effects show stronger positive cohesion effects for policies including all projects and all projects except cross border projects. Undertaking only cross border projects and reducing the price of rail transport gave weaker but positive effects. Increasing the price of road transport and introducing social marginal cost prices (SMCP) for transport gave weakly negative effects. The CGEurope model gave broadly similar aggregate trends across policies for the per capita absolute income effect and the welfare effect.

Zonal comparisons of GDP per capita (SASI) and welfare changes (CGEurope) forecast by the two models for the full TENS infrastructure project programme show that the absolute effects under both forecasts are small and the welfare changes show less variation than the per capita GDP figures. Both indicate greater improvements due to the investment on the periphery of the EU than at the core. The difference is that the higher GDP per capita improvements are concentrated primarily in the newer and poorer peripheral countries whereas the welfare improvement also occurs in the richer peripheral countries to the north-west (Republic of Ireland, Norway). The mixed policy combination of full TENS implementation and introducing SMCP is broadly neutral in the core, rather more negative in wealthy peripheral regions to the north west and more positive in the poorer peripheral regions.

He then turned to management issues, in particular vertical co-ordination and conflict with local policies. Top down policy is directed through financial links and fiscal controls, together with directives and regulations. These are to be implemented by member states, but are circumscribed by refraction of policy at lower levels and subsidiarity, the principle that management and policy direction should be at no higher a level than necessary. Private sector investment and management decisions also have an effect.

Current evidence is that amongst the earlier fifteen members, little use is made of TENS policies in formulating national priorities. The opposite is the case in Accession countries and non – EU countries (e.g. Switzerland) in key geographical locations.

Professor Vickerman then discussed ongoing policy conflicts. The vertical issues are those noted previously, together with the question as to who pays and when. Solving them will need vertical coordination from above coupled with better price and demand signalling from below.

The horizontal conflicts relate to issues such as transit traffic problems (e.g. in Austria) and the balance between competition and cohesion. At a more detailed level, efficient investment requires getting the appraisal methodology and analysis right and ensuring that the transport effect is integrated into the wider economy.

In summary, the key ongoing transport policy formation issues remain the level of investment and pricing, modal balance and sustainability. The policy issues can be summarised as:

- Subsidiarity and governance
- Vertical conflicts
  - Strategic policy and implementation
  - Policy refraction
  - Who pays and when
- Horizontal conflicts
  - Jurisdictional conflicts: transit traffic problems
  - Policy conflicts: competitiveness and cohesion
    - Conflicts in policy objectives
    - Conflicts between policy makers
- Infrastructure: investment and management
  - Getting the appraisal right
  - Integrating the transport effect in the wider economy
- TEN-T in overall Transport Policy
  - Investment and pricing
  - Modal balance
  - Sustainable transport
  - Joining up the pieces
- Transport policy in sustainable development policy
- Who pays, when and for what?
  - Accountability and transparency
  - Public and private sector consistency

Clearly, national systems need to be joined up if local transport efficiency is to be combined with greater cohesion. But the critical issues remains, who pays, when and for what? Addressing this will need a consistent appraisal framework.

### **Discussion**

From the floor, *Dr David van Rest* asked about the ability of the models to reflect the full range of socio-economic effects and in particular the possibility that higher accessibility might drag economic activities towards the core regions. The speaker said that as he had mentioned, multi – criteria analysis was also needed and these models could not convey all the effects of transport changes. And it must be remembered that the predicted quantitative effects across Europe were small compared with the overall level and growth in the national economies.

*Dick Dunmore* asked about the effects of private investment, for example in cars in the United Kingdom, which is leading to infrastructure congestion which cannot necessarily be overcome by additional investment. He also noted that in the past, European economic activity had been in the main close to coasts or waterways. Will the long term European structure be a north west – south east corridor surrounded by peripheral regions?

The speaker said that although the models showed that in general the effects of additional investment were more beneficial than higher pricing, road prices may need to rise as well.

The structure of continental economic development is a result of top down and bottom up effects of which connectivity is only one. TENS projects improve both local accessibility and regional accessibility to the periphery. The latter effect is mainly due to through infrastructure connections between national systems, e.g. motorways, bridges, airports and high speed rail links.

*Robert Cochrane* asked about the nature of rail infrastructure investment, which in some accession countries seemed unlikely to show benefits without rolling stock investment and better international links. Professor Vickerman said that road accessibility was much more important in its influence on the economic forecasts. The economic influence of rail development is also affected by interoperability issues.

*Stephen Bennett* noted that imposition of full rail interoperability – e.g. ERTS, could be so financially burdensome as to bankrupt the railways.

*Sarah Wixcey* said that project selection had been made on the basis of Community Interest – what does this mean? Professor Vickerman said that there is no single robust definition, but in the case of TENS it refers to projects with international spill over, where the benefits of cross border accessibility are likely to be high relative to local effects.

The Chairman Prof Mackett closed the meeting by thanking Prof Vickerman for a most interesting and informative presentation.

Report prepared by Robert Cochrane



# **Implementing the Rail Review Economic and Commercial Challenges**

Chris Bolt  
Office of Rail Regulation

University College London  
16 March 2005

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## **Introduction**

Last year's Rail Review proposed changes both in the way private rail companies work together - with Network Rail taking a coordinating role in planning and managing the use and development of the railway network - and in the regulatory framework. With these changes now being implemented, Chris Bolt described how the contractual and regulatory framework is being reviewed by the Office of Rail Regulation (ORR), and provided an appreciation of the economic and commercial issues it need to address. He considered what the industry can learn from previous writings on similar past problems.

The Rail Review highlighted a need for the application of serious economic analysis to decision making about the rail industry. The economic basis for current decision making did not appear to have advanced much over the last 10 years and in some economists' views had actually worsened.

## **Background to the Rail Review**

The White Paper characterised the railway industry as “an inefficient and dysfunctional organisation with a failure to control costs”. There was a perception from Government that it had lost control of the industry, despite the large amounts of public money being provided, and that the industry was lacking a clear forward strategy. The White Paper took the private delivery of services as a given.

It was worth remembering that at the time of the last Periodic Regulatory Review there had been no appraisal of strategic options for the industry - indeed no one could agree what such options might contain.

## **Outcome of the Review**

The Rail Review led to a number of key policy conclusions as outlined below.

*Government will set the strategy for the railways.*

This, however, begs a number of question, such as how the strategy is to be set, what level of detail such strategy should go into, and the manner in which the strategy is to be specified.

*Network Rail (NR) will be given clear responsibility for operating the network and for its performance.*

From 4<sup>th</sup> April 2005, the reporting on the performance of train operators transfers to NR.

*Track and train companies will work more closely together.*

The Government has talk of creating Virtually Vertically Integrated Companies (VIVICOs) to run the railway on a day-to-day basis. However, there is no clear indication of how within the existing contractual and regulatory framework such entities might operate.

*There will be an increased role for local decision makers.*

To some extent this has already happened in Scotland and the experience there has illustrated the many issues yet to be sorted out in order to implement a more decentralised approach. For example there are the well known problems of allocating common and joint costs. Similarly, giving TfL a greater responsibility for rail services in London requires a formal definition of their precise role and of their involvement in cross-boundary services.

*ORR will cover safety, performance and cost.*

This still leaves open the questions of how overall policy issues are to be decided in these areas and how potential conflicts between these issues are to be resolved.

*A better deal for freight will enable the industry and its customers to invest for the long term.*

This requires the longer term economic basis of rail freight, currently only paying their short run marginal costs, to be sorted out. Naturally enough, freight operators want to have long term access rights, but without the level of access charges actually going up to reflect the long run costs they might impose on the network.

Hence it can be seen that there are a number of issues arising from the conclusions of the Rail Review which remain to be sorted out. Interestingly the debate on the Railways Bill in the House of Lords, with the participation of knowledgeable members such as Lords Bradshaw and Berkeley, has been somewhat more informed than during its passage through the Commons.

### **White Paper Objectives for Regulation**

#### **The White Paper proposed that:**

*“Bringing regulation of all aspects of the rail industry - safety, reliability and efficiency - together under a single public regulator will streamline the regulatory system, reduce bureaucracy, and ensure that these issues are looked at as a whole, and not in isolation from one another.”*

Turning such aspirations into practice is going to be a challenge for all the parties. ORR is still at an early stage in working towards this objective. There can be no question of trading-off safety and economics. ORR will also have to ensure compliance with European Union directives on railway safety and regulatory issues.

#### **The White Paper also proposed that:**

*“ORR will help ensure that the railway provides value-for-money for both the fare-payer and the taxpayer, taking into account safety, performance and cost.”*

The difficult challenge for ORR is to align the objectives of the various private companies in order to deliver this requirement.

### **The Role of Government**

Government will be responsible for setting the strategy, in terms of the role of railways in the overall transport provision for the UK, specifying high level outputs for publicly funded services and ensuring value for money for taxpayers. It will also award rail franchises, monitor and enforce franchise agreements and, in respect of NR, will provide an indemnity for NR borrowing and enter into what is termed a ‘binding arrangement’ with NR.

From ORR’s perspective, it is to be hoped that the new Director General, Railways at the DfT will ensure that Government adopts more strategic approach to the specification of franchises, and indulge in less micro-management of franchise operators than has occurred recently.

The strategic issues in setting franchise requirements are far-reaching, involving resolution of significant conflicts and trade-offs; for example over utilisation of the two-track railway between Rugby and Birmingham. At present there is no agreed economic basis for determining how the relative claims of inter-city, local and freight services for capacity on this route are to be adjudged, nor how allocation of capacity on this route is likely to affect decisions on capacity allocation and on alternative or parallel routes.

### **Challenges facing ORR and Government**

The purpose of this paper is to illustrate rather than provide answers to the many challenges facing ORR and Government in implementing the conclusions of the Rail Review and the provisions of the Railways Bill when it comes into force.

How should an independent regulator approach the issue of providing advice and guidance to government? How should DfT balance setting railway strategy against its 'hands-on' role in letting franchises?

What form should the 'binding agreement' between NR and Government take and what aspects of railway provision should it cover? How should NR respond to ministerial requirements, which may be driven by short term political concerns, given its obligations under Access Agreements and its Licence Conditions? If wrongly handled, such potential conflicts could easily lead to confusion of objectives and hence economic inefficacies. Also, as a 'not for profit' company, how is NR to be incentivised?

How is the relationship between franchise operators and NR to be improved, given that the parties will continue have to comply with the Network Code and Track Access Agreements? Is this where the proposed VIVICOs will come in, and, if so, what form will they take?

Who will decide on future strategies for possessions and how will choices between many weekend possessions versus a continuous blockade be made? Given our present state of knowledge on the economics of different possession regimes, it is not always obvious what the trade-offs are.

Some major decisions on franchises are likely to be taken in the next few months which will have a major impact on railway services for years to come - for example the potential break-up of the Central Trains franchise. However, it is far from certain that we currently understand the economic impact on NR's financial position of such changes in the franchise arrangements. Decisions are also potentially being taken ahead of Route Utilisation Strategies and certainly ahead of a clear understanding by NR of its cost base and future expenditure profiles. There is a desperate need for a better economic understanding of how

choices of strategic options for franchise services will impact on medium term costs of the network.

NR has recently changed its contractual arrangements for maintenance. However, it is not clear that NR has sufficiently comprehensive accounting information on which to assess asset costs on a lifetime basis. This may be an area where railway economics has moved backwards compared with 10 years ago. More local decision making on provision of railway services demands there be better information on both long and short run costs, particularly in regard to infrastructure provision.

It is far from certain that anyone has an effective framework for defining the “public interest” element of rail services and for assessing trade-offs amongst the costs imposed on fare-paying passengers, taxpayers, freight users and others, such as local residents.

There is currently no single agreed measure for the “availability” of the network. As part of the PPP, London Underground has a measure of the “capability” of its network. Admittedly this is much simpler for a metro-type system, however the lack of an equivalent measure for the national rail system makes it very difficult to determine whether NR is delivering improved “capability” for the funds it is receiving.

As always with economic regulation, one needs to be able to measure outputs in order to set incentives and ensure that providers are delivering against targets.

### **Past Experience**

Having recently re-read a number of economic analyses of railway issues published over the last 20-30 years, including Stewart Joy’s book on the workings of the 1968 Act, one was struck by the recurring nature of many of these difficult issues. The current Railways Bill appeared to be trying to deliver the same form of transparent framework for railway funding that was part of the 1968 Act. Some of Stewart Joy’s comments and analysis, particularly on the problems in allocating joint and common costs, seem as relevant now as when written over 30 years ago. As Dr. Joy commented then the timescale for cost escapement in the industry is set more by the time it takes railway managers to appreciate that costs can be escaped than by any requirements for physical changes.

### **Discussion**

*Don Box* had been heartened by Chris Bolt’s talk and had found it refreshing to hear someone analyse the problems of the railway industry as a whole and not

simply address those issues affecting just one small part of it. The industry appeared to be lacking an overall corporate plan evaluated in economic terms. This could only happen if the industry adopted a common accounting system, since at present it seemed impossible to compare results between different franchises and across different sectors. He pleaded for getting rid of fixed allocations of infrastructure costs and for such costs to be treated on an avoidability basis. On the subject of “network capability”, he felt that passenger and tonne miles were more effective (and customer focussed) measurements than simply the number of train paths on a route, since the latter was partly influenced by the nature and mix of the trains themselves.

**Chris Bolt** felt that none of the issues Don had mentioned were insuperable. His approach was that in most of economics it was better to be approximately right rather than precisely wrong. Someone had commented to him that many of the difficult issues facing the industry could probably be solved by bringing together half a dozen retired BR accountants and planners, who had spent their working lives grappling with similar economic difficulties.

**Chris Castles** (*Independent Consultant*) wanted to know how Chris Bolt intended to approach his job given the current apparent lack of clear information and data on so many aspects of the industry and the seeming obfuscation by NR. Also, he wished to understand how Chris Bolt proposed to maintain his independence as an industry economic regulator at the same time as he would be advising government on railway strategy.

**Chris Bolt** saw the need to focus his attention on the medium term development of the railway network and hence to determine what were the key decisions likely to affect that development. The question he needed to ask himself was, “how can ORR improve decision making on those medium term issues and developments?” ORR recognised that they could not be the ultimate experts in every field of railway management and operations, however they did have some expertise and it was their role to encourage the industry to acquire the right resources to address the medium term critical issues.

On the second point **Chris Bolt** also saw ORR acting as independent technical experts, particularly in ensuring that the industry presents information in a common format. It would be for Ministers and other funders to make decisions. ORR’s role would be to present advice in as formal and transparent way as possible, and to ensure that the statutory and other requisite processes were adhered to. ORR also had a role in protecting private sector investment. For example, Ministers do not have the option of tearing up contracts, but may have an option of buying them out - this type of distinction was very important. Inevitably ORR will get some of the flack for difficult and unpopular decisions,

and information they present will be challenged; their essential defence would be in transparency.

**Peter Gordon** (*AEA Technology Rail*) wanted to know what was likely to be ORR's future attitude to open access operators, and what would be the impact of EU legislation in this area.

**Chris Bolt** felt that ORR's attitude was unlikely to change greatly. As now, ORR will need to address the technical and operational issues associated with open access bids and, in reaching a decision, take into account the economic effects on existing franchise operators, together with the escapability of costs for those franchise operators. He was clear that Government, in specifying the franchised services it required, did not have a role in deciding on open access operations over and above those services. Current UK non-compliance with certain EU Directives centred on the arrangements for CTRL and access to specific freight facilities. Overall, *Chris Bolt* saw the direction of EU legislation fitting well with the approach in the UK.

**David van Rest** (*Independent*) detected a pre-supposition in the talk that politicians would be prepared to take difficult decisions, which he thought did not accord with the historic evidence. What would be ORR's reaction if Ministers simply required the industry to provide the same outputs for, say, 10% less money than ORR felt was needed?

**Chris Bolt** explained the iterative process involving ORR and Government for decision making that the Railways Bill proposed to put in place. It was not unreasonable to expect that Ministers might try to fudge decisions. Again he emphasised that ORR's defence would be the transparency of their proffered advice and in the way which they conducted the process.

**Stephen Bennett** (*SRA*) felt that much of the future success of the industry depended on the credibility of Chris Bolt's leadership. In particular he highlighted how vast amounts of money were being provided to NR which that organisation was failing to spend. ORR's credibility depends on their ability to tackle this and similar issues.

**Chris Bolt** commented that next Monday ORR would be publishing the first edition of a Quarterly 'Network Rail Monitor' which sought to focus on such issues. The Review was open about ORR's current lack of understanding as to why NR is underspending; was it for acceptable reasons such as improved efficiency or planned slippage because the work was no longer required, or for unsatisfactory reasons like unplanned slippage and failure to deliver improvements to required timescales. The issues once again came back to the need for effective measurement of outputs.

**Lindsay McDougall** (*Jacobs Consultancy*) asked how ORR proposed to regulate Network Rail in the future, given its financial structure.

**Chris Bolt** noted that NR was rather an unusual company, in particular in not having a conventional set of shareholders to satisfy. Hence, it could develop in several ways. One option might be for it not to bother with shareholder issues and continue to borrow cheaply on the basis of government indemnities. Another might be for it to build up reserves equivalent to the equity value in a conventional company; this could then lead to it being sold at some stage. One issue might be for ORR to get NR to value its government indemnity and put this value in its accounts. Such an indemnity was not costless.

In view of the time the Chairman drew the meeting to a close at this point and asked those present to join with him in thanking Chris Bolt for a very frank and open discussion of the issues affecting ORR and the railway industry.

Report prepared by Gregory Marchant

# Light Rail is good for you!

Scott McIntosh  
Senior Consultant (Light Rail) Mott MacDonald

University College London  
27 April 2005

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Our new chairman, Robert Cochrane, introduced Scott McIntosh - an acknowledged authority and keen proponent of the case for light rail in an urban context. His purpose in addressing us is to advance the general case for light rail and in doing so put the recent bad press which certain light rail schemes had suffered together with some 'back pedalling' from Government, into proper perspective. Scott was filling this particular slot in the TEG programme at late notice but, as the next hour or so was to show, would give an appropriately combative address.

The speaker started by saying that his interest in trams, as the precursor of 'light transit' was of long-standing - since the age of 4, in fact. Since these early beginnings he had obtained direct experience of light transit schemes in both London and Manchester. Many cities had thought that the urban light transit concept was dying, and there had been comment in some parts of the technical press to support this. But this was not so, as 87 new tramway systems had come into operation since 1987 and there were a further 27 under construction and due for completion within the next two years. The largest of these schemes were to be found in the U.K., France and U.S.A., but all parts of the developed world were represented. Moreover, existing systems were being extended, for example the Westfield extension of the Midlands Metro in this country.

In spite of the bad experience of the Sheffield system it is now acknowledged that passengers generally favour light transit schemes 'Business' generally supports light transit schemes. To return to the Westfield extension, referred to above: the owners of the Merry Hill shopping development say that the extension of the Metro is crucial to the further development of Merry Hill. Light transit schemes must now be considered as serious contributors to sustainable urban growth and regeneration.

Results support a more optimistic view of light transit. The Croydon scheme is currently carrying 22m passengers, making an upgrade of the existing system a necessity in addition to the projected extensions. Experience of UK tram schemes indicates that about 20% of peak hour passengers now on trams

previously travelled by car and at weekends up to 50% of tram passengers. Compared with ‘buses, and the speaker did not wish to disparage the efforts of the ‘bus industry in dealing with the urban transport problem, light transit made superior proportionate gains in carryings and, most particularly, effected larger transfers from the motor car.

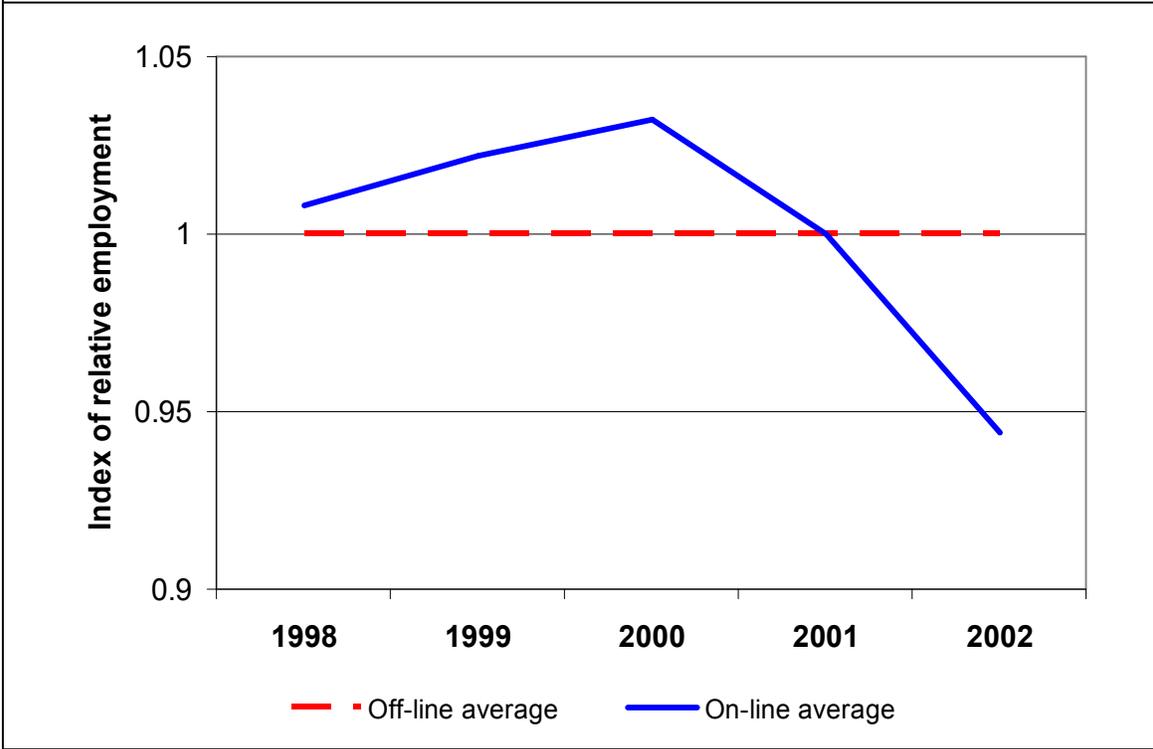
Further commenting on the Croydon scheme, the speaker remarked on the fact that traffic to and from Croydon car parks had decreased by 6% since light transit had appeared, resulting in the removal of an 800 place car-park! ‘Footfall’ in shops had increased by 11 % Croydon had achieved a 20% modal shift from the private car, which could be celebrated as a ‘choking-off of traffic when just the sane side of congestion’. Comparing traffic flows in Croydon and neighbouring Kingston between 1995 and 2000 suggests a net fall in the case of Croydon of 15% and little of no net change at Kingston.

	1995	1996	1997	1998	1999	2000
Croydon	-1%	-3%	+1%	+2%	-3%	-14%
Kingston	-2%	-1%	-2%	0	-1%	+2%

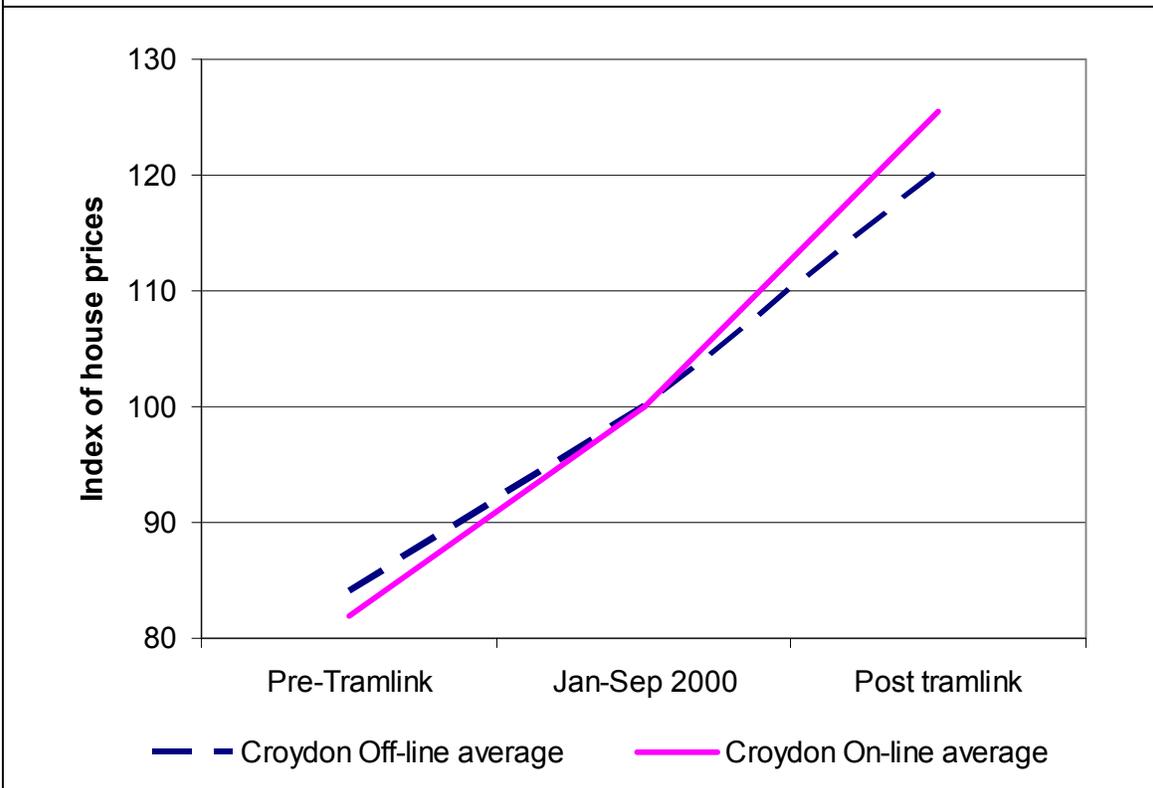
Source: Oscar Faber (2000)

In the wider scheme of things both the Croydon and Nottingham schemes had had a favourable impact on residential property prices - a doubling of house prices between 1999 and 2003. In the case of Tramlink (Croydon), wards now served by trams showed a significant reduction in unemployment rates (9.3% average reduction since Tramlink, but as much as 35% in the most deprived ward) as shown in figure 1. The ‘South London Partnership’ assessment claims a major impact on social benefit including independence to the mobility impaired, lower levels of unemployment along routes served compared with those areas not served and making it easier to employers to recruit staff and improve staff retention. Apparently, properties near Tramlink are highly sought after, and properties in Addiscombe, New Addington and others served by Tramlink have become ‘more marketable’, say local estate agents (see figure 2).

**Figure 1: Relative unemployment**



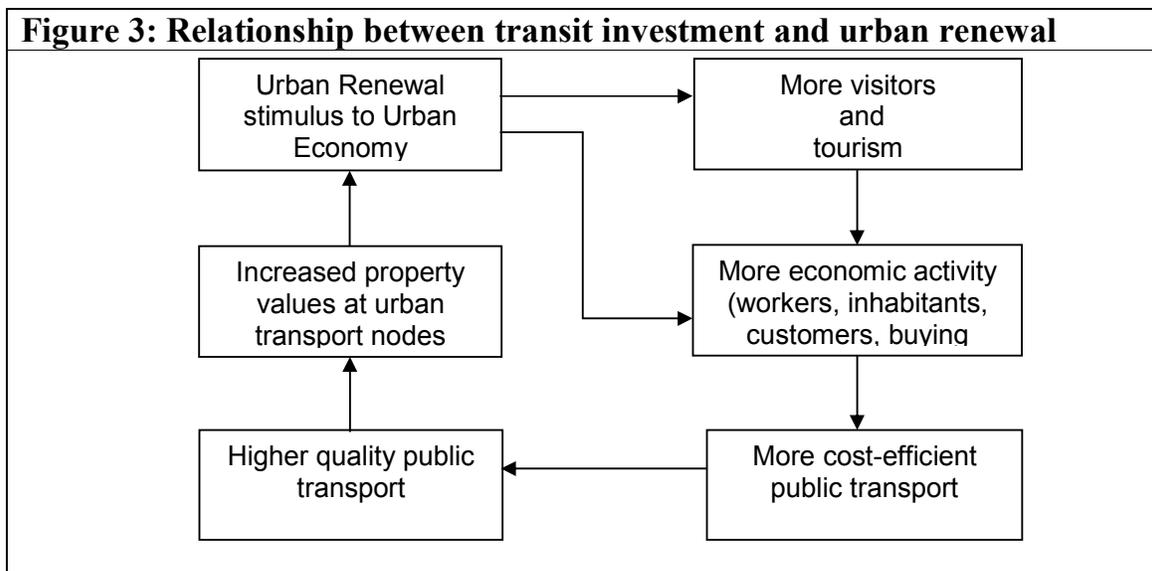
**Figure 2: Relative property prices**



Tramlink - this ‘boringly reliable’ transport system has had a favourable impact on both people and employers and was now top of the transport performance table.

Having summarily dealt with the notion that ‘light transit’ had no significant contribution to make to urban transport problems Scott went-on to talk about some of present procedural aspects of tram schemes which prejudiced the concept of light rail transit systems. But first some fundamental flaws in attitude which told against public transport in general and, therefore, against light rail in particular. First, public transport had to operate in an environment of comparatively little road traffic management. Secondly, in spite of many statements of ‘good intent’, there was little significant attempt at public transport integration in practice. A doctrinaire unquestioning belief in the benefits of ‘competition’ offered some theoretical support to this particular shortcoming.

In reality there was, he believed, a virtuous spiral whereby the continuing development of urban public transport promoted urban renewal and increased property values. Premus and de Koenig argued in *Metropolitan Public Transport the Key to Urban Vitality* (University of Delft, 1999) that urban renewal enhances economic activity, which provides the basis for improvements in public transport, which has the potential to impact positively on property prices, which then stimulates further renewal and regeneration in a virtuous spiral (see figure 3). Although one could break-in to this spiral at any point it should not be considered as self-generating. One had to take positive action at some point in the virtuous spiral.



The question of cost was uppermost in the minds of those whose job it was to evaluate comparative public transport schemes employing different technical methods. 'Bus lanes were much favoured because of their 'temporary' nature, that is, easy to put in and easy to take out. They therefore had the advantage over light transit as a 'solution' which produced some benefits in the short term, and at comparatively little extra cost, both 'first' cost and consequent maintenance. But, in UK experience, investment in quality 'bus services has been shown to deliver lower levels of modal shift from the car- typically 3-4%.

Then there was the guided 'bus solution. But the necessary guidance systems do not come cheap. The speaker claimed that a high quality guided 'bus system typically costs 80% of the cost of a comparable tram system. He gave as an example the cost of the Portland (USA) 'streetcar' system where a 7.8m city loop cost around \$1bn.

In the UK there were the problems associated with tortuous project development procedures. The sequence of events was typically as follows: first, the promoter develops a scheme and then bidders for the contract to build are short-listed. There follows assessment evaluations by the consortia involved, but all too often there emerge differences of opinion and a funding gap crisis. Manchester and South Hants schemes are illustrative of this process and the inevitable consequences of delay and ever inflating costs.

The result is a general loss of confidence both in the particular scheme under development and the 'light transit solution', in general. To make things worse changes in the evaluation process are brought-in as the scheme develops. This almost inevitably results in the erection of additional hurdles to the chances of obtaining a satisfactory result. The speaker gave as examples the introduction of an optimum risk bias of 66% and raising the Cost Benefit Ratio required from 1 to 1.5 - all without apparent theoretical justification. Overshadowing these problems is the Government bias toward 'quick-fix' solutions.

Other problems to be addressed during the evaluation process include the appropriate levels of risk to be applied to the many and varied categories of expense and income characteristic of such schemes, and the determination of who is to bear these risks. Long running schemes, both in development time and actual build time, raise questions of cost inflation. The introduction of changes after the final business case has been settled leads to requests for more evaluations and possibly a reiteration of the whole scheme. The poor availability of basic cost data on LRT schemes is a further hindrance to the successful development of new schemes. Result: more delay and more cost.

An outstanding difficulty is the scepticism attendant upon patronage and revenue outturn forecasts, largely based on experience of schemes of the recent

past. There appears to be, or has been, optimistic assumptions in forecasting. This may be due to an underlying favourable bias towards such schemes, or reliance on models, which are unsuitable for the particular scheme being evaluated.

‘Monetising’ social benefit is a big problem in that it is a major feature in any public transport evaluation. The impact of the problem is exaggerated in the UK as each scheme is evaluated separately and has to be justified separately. In France, Germany and the USA the practice is to evaluate a number of schemes, forming a ‘pipeline’ or ‘network’ as one.

Finally, there is the problem of bidders having to recover the costs of evaluating schemes which eventually they do not win, or which are abandoned.

### **Discussion**

Questions and comments were then invited from the audience.

*Wyn Jones* wondered where we should stop with schemes - DLR has plans for extensions; Croydon may take traffic from ‘heavy rail’.

Response: DLR performs extremely well and is a successful scheme; however the automatic operation makes it an expensive version of light rail, costing four times as much per route kilometre as a street system. Extensions are popular and further ones are in the pipeline, however journey times on Light Rail systems with frequent stops mean that total trip lengths of over 20-30 minutes are about the size limit for such systems. The journey time to Dagenham Dock from Canary Wharf is 20 minutes, so this probably represents the outer limit for DLR. So far as substituting for heavy rail is concerned there is the penalty of interchange to consider. Light rail will not extend as far as the old London tramway system. The capacity of light rail is possibly greater than the present system’s 2,000 passengers per hour.

*John Cartledge* asked if the National Audit Office has helped or hindered your cause?

Response: There are no problems intrinsic to the mode or its technology. It is ‘cack-handed’ government decisions which are the problem. It is necessary to change some of the appraisal ‘rules’ to give schemes a better chance.

*Robert Bayne* queried the passing of cost risk to operators when some infrastructure problems are relevant e.g. the problem of conflicts with utility requirements.

Response: Most LRT schemes had paid a significant sum of money to relocate utility apparatus, notwithstanding the New Roads and Streetworks Act saying that generally utilities will be left where they are found. Current rules mean that over 80% of the cost of this relocation is borne by the tramway promoter. This means that the utility is getting new-for-old at a fraction of the cost. The bluff of the utility companies should be challenged and tramway promoters should resist taking on a utilities relocation burden.

*Peter White* wished to query the house price effects quoted. There appeared to be ambiguous effects when contrasting trams with other modes. Have there been other forecasts?

Response: Both the Tramlink Impact study undertaken for TfL and the Buchanan study undertaken for the South London Partnership support the view that house prices have risen significantly more in Tramlink areas than elsewhere in the area.

*Gregory Marchant* asked if different socio-economic groups show a variation in modal shift?

Response: Yes. Regular car commuting is biased towards A, B, C1 classes. So the tramway offers significant benefits to these groups. So, does this imply a subsidy to the rich? It could be argued that it does. But social benefits, as a by-product, must also be considered and these show that LRT significantly widens the travel-to-work opportunities of poorer groups.

*Another person* enquired if business rates could be used to help with funding?

Response: Dedicated funding always helps. The French answer has been a payroll tax with direct subsidy to the operators. In the USA a sales tax is employed with capital being raised through hypothecated government bonds. The UK system is, of course, a centralised business rate.

*John Cartledge* mentioned the imbroglio of TFL when the public were not enthusiastic for the Uxbridge Road scheme.

Response: I do not believe that the development of the scheme and its presentation to the public has been adequately handled.

This concluded the session. The chairman asked the audience to show their appreciation of what had been a forthright exposition of the problems and advantages of light rail. And the audience duly responded, with enthusiasm.

Report by Don Box



# TEG NEWS

## A New Venue for our Meetings

From this September, TEG meetings will transfer to the Arup Head Office at 13 Fitzroy Street. A map showing the location of the Arup office is printed below:



**13 Fitzroy Street, London, W1T 4BQ**

**By underground railway:** Goodge Street (Northern line), Warren Street (Northern and Victoria lines), Great Portland Street (Circle, Hammersmith & City and Metropolitan lines) or Euston Square (Circle, Hammersmith & City, and Metropolitan lines).

**By bus:** 10, 24, 29, 73, 134, 390 stop on Tottenham Court Road

The TEG is very grateful to Arup for allowing us to use one of their rooms for

our meetings, which will have the same format as before. Please note that we are now starting the programme in September as we are not restricted to the academic year. The meetings will be at 5.30 for 6 pm and be on the fourth Wednesday of every month (except December) from September to June. The programme for September 2005 to June 2006 is printed on the inside front cover of the Journal.

## **Notice for Transport Statistics User Group**

### **20th Anniversary All Day Conference**

Wednesday 30 November

Royal Statistical Society, London

**Leading experts in the field will confront the problems facing transport statistics over the next 20 years and review the past 20 years.**

*Topics covered will include*

- *Policy Challenges Ahead,*
- *Technology Drivers,*
- *The Changing Needs for Transport Statistics,*
- *The Environmental Impacts of Transport and*
- *The International Dimension*

***Fuller details including booking arrangements to follow***