Transport, Infrastructure and the Economy

Why new roads can harm the economy, local employment, and offer bad value to European tax payers

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T&E 00/6
December 2000
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Summary and Recommendations

Investing in transport infrastructure is frequently assumed to provide large-scale economic and employment benefits. So much so that large proportions of EU and national budgets set aside for regional assistance or economic regeneration are devoted to transport infrastructure. Empirical evidence to support this general assumption is, however, notable by its absence.

A recent overview by a panel of leading experts in this field has concluded that there are in fact no automatic economic or employment benefits from such spending on transport. The Standing Advisory Committee on Trunk Road Assessment (SACTRA) in the UK reviewed all the questions related to Transport and Economy. They found that benefits from transport projects may be limited, they may go to the already well off, or there may not even be any benefits. Yet decision makers, and the funding systems they have developed, continue to rely on the assumption that there are automatic benefits. The assumptions and prejudices held by Europe's decision makers are, in fact, incorrect.

There is great pressure currently to ensure that policy makers base their decisions on the application of sound science on issues from food safety to GMOs. It is, therefore, ironic that those responsible for the current system of regional development assistance and transport infrastructure financing still seem so unwilling to listen to the academics on this particular issue.

The fact is that the sound science on transport and the economy informs us of some basic relationships that run counter to current assumptions:

- There are no automatic economic or employment benefits from new transport projects, and some projects may be economically harmful;
- Even when a specific project produces economic benefits, the more economically deprived end of the link may still lose out economically;
- The link between transport growth and economic growth can be broken, and this is best achieved if charges are levied to correct market distortions e.g. internalisation of externalities;
- Cost benefit analysis as currently undertaken fails to elaborate the true economic impacts of schemes and wrongly assumes market perfection;
- A standard economic impact appraisal that includes a more comprehensive cost benefit assessment is a pre-requisite for any transport project and any that do not produce net social benefits should not proceed.

These conclusions can be applied to European policy making and would require the following changes:

- Firstly the SACTRA conclusion on the benefits from decoupling economic and transport growth mean that EU efforts to internalise external costs must be redoubled.
- The revision of the Trans-European transport Network guidelines should include the elaboration of a standard economic appraisal methodology which would then be applied to any extension of the network;
• An assessment of the value for money that the TENs are offering the European tax payer should be undertaken by those responsible for overseeing community expenditure – particularly the European Parliament’s Budgetary Control Committee;

• Future revision of the EU’s cohesion and structural funds should incorporate the standard economic appraisal developed under the revised TENs guidelines;

• The ISPA funds being allocated to TINA projects for expansion of the TENs under EU enlargement should also reflect the development of the standard economic appraisal to ensure that the TINA priorities serve the CEE economies and not the current EU15;

• IFIs funding transport infrastructure should incorporate into their lending decision making processes the standard economic appraisal if they are to serve the economic development of the countries to which they lend;

• The SACTRA conclusions should replace the inaccurate assumptions and false orthodoxy held by decision makers in all the countries of Europe and beyond.

Rejecting a thorough appraisal of infrastructure projects, especially on the value they offer to tax payers, will undermine the goals of European cohesion and integration. It will reinforce the image of the EU as unwilling to listen, and composed of an inefficient, wasteful and potentially corrupt civil service.

For the European project to get back on track the EU must deliver to its citizens participation, transparency, and appropriate economic assistance. This will not be achieved by merely building new transport infrastructure.
1. Introduction

The “European Project” owes a lot to the ideas and motivation of the then Commission President Jacques Delors. Towards the end of his tenure his drive towards greater federalism and European integration was threatened by an economic slow down. His response to this challenge was to devise the Trans European Networks, large scale publicly financed infrastructure projects that would “permit better, safer travel at lower cost, and thus an increase in trade, while reducing costs and distances and creating scope for other activities” [1]. The estimated budget for this scheme was to total €250 billion between 1994 and 2000, but this investment was thought to be “a key factor in the economic recovery of Europe” [2].

The logic behind the TENs was that the investments in new infrastructure would aid development of the single market, bring Europeans closer together, and stimulate economic growth as transport costs were lowered. This line of thought – more infrastructure equals greater efficiency, lower costs, and ultimately economic growth – has been the dominant view among policy makers since the war. Indeed not only the TENs, but also other EU policies and many Member State policies have been founded on this logic. However, academics who have studied this issue recently have questioned the accuracy of the assumptions underpinning this approach.

A thorough review of the evidence surrounding the debate on the relationship between transport, infrastructure and the economy was undertaken for the UK Government last year. This publication reviews the lessons that can be drawn from the resulting study both for the EU as a whole and for its Member States.

T&E has long argued that the decision making processes on infrastructure projects needed to be improved. T&E has asserted that the assumptions underpinning many projects may well be flawed. The European tax payer is being ill served twice over. Firstly because transport infrastructure may be a waste of large sums of public money if it is not providing the returns expected from it. And secondly because the well being of the European economy may not be served by growth strategies that deliver little of value, particularly in terms of employment. In addition to this disservice to the tax payer the environment is being damaged by these projects, contrary to the Amsterdam treaty objectives for the EU of improving the quality of the environment.

The sums involved in the TENs project are dramatically large, as Table 1 below indicates. In the period from 1993 to 1999 Transport TEN infrastructure investment amounted to at least €13.7 billion.

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Table 1 EU Investment on Transport Infrastructure and the TENs

<table>
<thead>
<tr>
<th>EU-15</th>
<th>Total</th>
<th>TEN-T</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000-06</td>
<td>95-99</td>
</tr>
<tr>
<td>TEN Budget</td>
<td>4.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Cohesion Fund</td>
<td>18.0</td>
<td>15.5(^a)</td>
</tr>
<tr>
<td>STRUCTURAL Funds(^b)</td>
<td>195.0</td>
<td>153.0(^b)</td>
</tr>
</tbody>
</table>

\(^a\) 93-99      \(^b\) 94-99

Notes: 1) 50% to TEN transport infrastructure  
2) Approx 2-3% to TEN transport infrastructure similar to period 1994-1999

These levels of expenditure are likely to increase in the future with the expansion of the network eastwards as accession states use the “Instrument for Structural Policies for Pre-Accession” (ISPA) funds. Much of this expenditure will be to complete the infrastructure identified by the “Transport Infrastructure Needs Assessment” (TINA) process as “needed”. Despite its title this Commission led initiative could more accurately be described as a listing of the infrastructure most desired by the transport departments of accession states, rather than an objective assessment of their needs.

1.1 Background

The Standing Advisory Committee on Trunk Road Assessment (SACTRA) was established to provide to the UK Minister of Transport advice on questions relating to road infrastructure. The committee consists of experts acknowledged to be leaders in their respective fields and is appointed by the government (for a full list of the SACTRA members see Annex 1). Their first report at the end of 1994 addressed the question of whether new roads created traffic growth, and if so, which roads did so and what the implications for traffic projections would be. They were one of the first government bodies to confirm the assertion presented by NGOs over a number of years that new roads generated new traffic. The widespread acceptance of this principle by the transport planning and decision making community, beyond those academics to have studied the issue, is in part a result of this first SACTRA report.

Their second report has addressed the economic aspects of transport, especially those of transport infrastructure. The report, simply titled *Transport and the Economy*, was published in August 1999. In it, the committee has reviewed the assumption that new transport infrastructure has an automatic economic and employment benefit in the same frank manner as it previously used to challenge assumptions on traffic projections. Their report could once again persuade infrastructure decision makers of the need to realign their assumptions and approaches with those of the conclusions of the academics to have studied these issues in depth. This shift has long been advocated by NGOs as necessary to improve decision making on infrastructure and enhance its rational basis.

This report serves two purposes:

1. to outline the content of the second SACTRA report on Transport and the Economy
2. a preliminary application of the contents and conclusions of this report to European decision making on transport infrastructure projects.

It must however be stressed that this report is in no sense attempting to act as a substitute for readers to the SACTRA report itself. Indeed the SACTRA authors stressed the need to read their report in full, and readers are urged to do just that if they wish to gain a full understanding of all of the report’s findings.

Notwithstanding these remarks this report is unique in attempting to apply the principal findings of the SACTRA report to European decision making processes. This is very much a preliminary application of the report’s findings in order to stimulate a debate that will enable production of a more comprehensive analysis at a later date.
2. Brief Résumé of the SACTRA Report

The SACTRA Report on Transport and the Economy addresses four main questions:

1. Do transport improvements lead to increased economic activity?
2. Is it possible to de-couple transport growth and economic growth?.
3. Are economic impacts fully captured in procedures for estimating transport infrastructure costs and benefits?
4. What should happen to review procedures as a result of the answers to the foregoing?

2.1. Do transport improvements lead to increased economic activity?

This question is answered basically with the statement “it depends”. The “it” depends on the particular circumstances of the transport linkage, the nature of the improvements made, and the nature and state of the economies in the regions at the ends of the improved transport link.

It is important here to emphasize that SACTRA was assessing the impact of transport improvements, rather than just new infrastructure projects. Improvements of course are not limited to new infrastructure projects so SACTRA defined improved transport as anything that lowered the generalised cost to the user. Improvements could therefore include new infrastructure, upgraded or repaired existing infrastructure, better management and operation of existing infrastructure and different financial management regimes.

Overall their conclusion is that there is no hard and fast rule that means that either economic activity in general or employment will be enhanced by transport improvements. They found evidence that in some instances there was a positive relationship, whereas in others there was a less positive, or even a negative one.

Obviously, improving a transport link makes it just as easy for people (or goods or investment) to leave as enter an area. This means that the economic beneficiaries of any transport scheme could be located in more prosperous areas, rather than in the economically deprived areas targeted by the scheme. This has come to be known as the ‘two way road’ argument. The obvious fact that traffic flows in both directions, and with it economic impacts, is something most decision makers have consistently ignored or neglected, however, with very serious consequences.

It is certainly the case that their findings support the arguments environmental NGOs have been making for a considerable period, namely that the assumptions used by many decision makers to assess the value of infrastructure projects are wrong. There are no automatic economic or employment benefits from transport improvements. Additionally, even when there are economic benefits overall, they may flow away from the intended area.
2.2. Is it possible to de-couple transport growth and economic growth?

The approach that the committee took to this question was to assess the potential of policy makers to influence the development of transport demand. If it is possible for decision makers to alter transport demand without a negative economic impact, then it would be possible to de-couple transport growth and economic growth.

They conclude that economic instruments offer the best potential to influence transport demand growth without adverse economic impacts due to the economic efficiency effects of such instruments. In fact these instruments are explicitly designed to improve the economic efficiency of transport rather then to damage the economy.

Therefore, they point out, not only is it possible to influence the growth of transport demand, but the instruments most likely to succeed in this are also likely to have a positive economic impact rather than a negative one. The conclusions of the report is that it is therefore possible to de-couple transport growth from economic growth.

2.3. Are economic impacts fully captured in procedures for estimating transport infrastructure costs and benefits?

At present the cost benefit analysis undertaken for transport infrastructure assessments is far from comprehensive. Assumptions that underpin the assessment of social costs and benefits rarely reflect reality.

For example the report highlights the fact that market distortions significantly undermine current assessment methodologies because the assessments incorrectly assume conditions of perfect competition. Market distortions include labour market and transport pricing market distortions as well as taxes and subsidies within and beyond the transport sector.

The SACTRA report runs through all of the other areas where current assessment methodologies also fail to capture the true economic impact of transport infrastructure.
2.4. What should happen to review procedures as a result of the foregoing?

The main conclusion of the SACTRA report is that the review procedures need to improve, in particular in relation to the economic evaluation of projects. Specific recommendations include:

- an early evaluation of the objectives of the project - especially any which are overtly economic in nature;
- a standard economic impact report, with an improved cost benefit assessment that includes factors such as the relationship between transport prices and the project, the scale of market distortions, details of any structural changes the project may have on the economy, the location and identity of likely winners and losers from the project, and time horizons from short through medium to long term impacts.
3. The Details of the SACTRA Report

3.1. Transport Improvements and Economic Growth

SACTRA concludes that there are no automatic economic improvements stemming from transport improvements. Nevertheless, this does not mean that transport improvements necessarily have a negative economic impact either. SACTRA therefore concludes that the circumstances of the particular area and the nature of the transport improvement determine the direction and scale of the resulting economic impact. There is no hard and fast rule.

The SACTRA report is very precise in the way in which it addresses this problem. It notes that the construction of new infrastructure, or the physical upgrading of existing infrastructure, is frequently assumed to correspond to an improvement of the transport service provided.

This enhancement of the physical structures available to transport is not, however, the same as an improvement to transport *per se*. As the SACTRA report points out, “transport is the function which allows movement of goods or persons from one physical location to another.” The report draws the distinction between this functional definition of transport with those that are really measurements of traffic. To ensure clarity the report defines a transport improvement as any measure that achieves a reduction in the generalised cost to the user for a given volume of traffic.

The generalised costs of transport do not just include the prices paid for transport, but also the efficiency of transport in terms of the time taken for a particular trip. It is this “time saved” concept that has traditionally been used as the basis for cost benefit analyses to judge the likely benefits of infrastructure projects.

This definition is an important starting point as, in the past, one of the arguments that has been frequently made against new transport infrastructure projects has been that they are ill conceived attempts to cater for traffic growth rather than efforts to improve transport. Indeed, it was the previous SACTRA report that was the first recognition from a quasi-governmental organisation that new infrastructure will in fact generate additional traffic to that which could otherwise have been expected.

New transport infrastructure could, by generating additional traffic, thereby have no effect on congestion, and the generalised costs of transport to the user would remain constant.

Transport infrastructure projects are typically mooted as necessary improvements to enable economically deprived areas to become more attractive to investment. Therefore, an important question for decision makers attempting to revitalise an economically deprived area is where the economic benefits are realised.

Traditionally it has been assumed that time savings and improved logistics will make enterprises in the area more competitive and attract investment. The SACTRA report notes that improving transport infrastructure linkages between deprived areas and areas of higher economic activity can have the opposite effect.

Schemes to improve access to deprived areas have two effects. Firstly they improve the ease of access for businesses in these areas to more economically prosperous markets. However, at the same time they also ease access to the market in the
deprived area to businesses in the already prosperous areas. Benefits can flow in both directions along the new link, and it is the net balance of benefits that is of interest to determine whether the scheme improves or damages the economy of the deprived area.

The easing of logistical restrictions alongside the time savings brought about by new transport infrastructure can therefore result in economic activity leaving the deprived area in favour of more prosperous adjacent areas. For example, will a new road link improve the prospects of small local producers by opening up new markets for them, or will it allow larger competitors to move into the area from outside and put them out of business? In the real world, either of these effects may occur, and it is hard to predict which will predominate in a particular case. This has come to be known as the “two way road” argument, highlighting as it does that traffic (and people, goods, and so investment) along new roads can flow in either direction.

The realisation that traffic on new roads flows in both directions therefore seriously undermines the traditional assumptions on the economic benefits of infrastructure investments. Even where there are economic benefits for building or improving transport infrastructure, the scheme may still prove harmful to the most economically deprived areas.

The SACTRA report also highlights the lack of empirical evidence for a strong link between transport infrastructure investment and economic growth in general. The most important research for proponents of this argument is that of D. A. Aschauer (1989) who found a strong link between economic growth and transport infrastructure when using an econometric approach to assess USA data spanning long time periods. Subsequent critiques of this work have led even the author to drastically down-grade estimated effects (from an elasticity of output equal to 0.4 down to 0.1). SACTRA goes further in concluding that no one, including Aschauer, has established a causal relationship, or more importantly, its direction.

3.2. De-coupling Transport and Economic Growth

In order to answer the question of whether it is possible to de-couple transport growth from economic growth, SACTRA first queried whether it was possible to influence transport demand growth at all.

In addressing this question they reviewed what influences the demand for travel. They noted that the major influence on transport and traffic intensity is economic in nature - economic growth and income levels. Some of the other factors they recognised were not subject to influence from policy makers (such as a country's location or geography). A second series of factors were those that were related to transport policy instruments – especially those that influence transport’s price, speed and quality. A final set of factors which SACTRA identified were those not traditionally associated with transport policy, but that had ramifications for transport, such as the pattern, supply and costs of housing, and land use planning.

The review that SACTRA undertook on transport intensity highlighted some of the pitfalls which other reviews have fallen foul of in the past. For example, they point out that ratios of transport activity to GDP and its trends do not demonstrate that a particular amount of transport is needed for any level of GDP, or that the level of economic activity causes a certain amount of transport. Frequently, however, one or even both of these assertions are made.
The review of all of the effects on transport demand enabled SACTRA to clearly establish that changes in prices and travel times have an appreciable effect on the total volume of traffic and its growth over time. Their research established, therefore, that a degree of decoupling is indeed empirically possible.

Once SACTRA established empirically that there are measures to influence transport demand growth, they assessed whether these measures would have a negative or positive economic impact. They noted that there was potentially a paradox in stating that there could be positive economic outcomes following a reduction in the relative availability of transport or an increase in the generalised cost to the user. Conventional economic thinking assumes that such cost increases for an element of the economy, which is a derived demand, would have negative economic implications for the economy as a whole.

SACTRA noted that this was the case where markets were functioning without distortions or market failures - i.e. in perfect competition. In such circumstances increases to the generalised cost of transport would indeed have a negative impact on the economy. However, in situations where there are pre-existing market distortions or market failures, a reduction in transport supply (or an increase in the generalised cost of transport) could have a positive economic effect rather than a negative one.

SACTRA concluded that in normal conditions of market distortions (such as taxes) increases to transport costs could act as correcting instruments, increasing the efficiency of resources used within the economy. Increasing transport prices could indeed have a positive economic effect.

SACTRA outlined in a matrix the variety of possible balances there could be between costs and benefits to both individual transport users and the economy as a whole. (Their resulting matrix is reproduced in Table 2 below)

Following this matrix, the paradox is only applicable where markets are perfect, a situation that occurs rarely outside of economic text books (Cell number five from nine possible in the matrix). Indeed SACTRA notes that those instruments identified as empirically able to influence transport demand were also those that would have characteristics to improve efficiency. SACTRA therefore concluded that a decoupling of transport and economic growth was indeed possible.
Table 2 Matrix of Market Distortions

Along one axis are the three cases related to the price level of the transport sector (private marginal costs) to the long run cost to the economy (long run marginal social cost); prices too low, just right, or too high. Along the second axis of the matrix they plotted the balance of the private gain of the transport user (private marginal benefit) to the gain of the economy as a whole (social marginal benefit).

<table>
<thead>
<tr>
<th>Transport Sector Pricing and cost structure</th>
<th>Private marginal benefits greater than social marginal benefits</th>
<th>Private marginal benefits equal to social marginal benefits</th>
<th>Private marginal benefits less than social marginal benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private marginal cost less than long run social marginal cost.</td>
<td><strong>Cell one</strong> Negative external effects exacerbated by overvalued output of transport using sector; may be substantial benefits from reducing use.</td>
<td><strong>Cell two</strong> Traditional external effects case; no offset from transport using sector; conventional cost benefit analysis overestimates total economic benefits</td>
<td><strong>Cell three</strong> Transport and transport using benefits are of opposite sign. Conventional cost benefit analysis do not cover the implications of imperfect markets</td>
</tr>
<tr>
<td>Adverse externalities, congestion, user charges too low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private marginal cost equal to long run social marginal cost.</td>
<td><strong>Cell four</strong> Subsidy to transport using sector means total economic benefits are less than transport benefits, conventional Cost benefit analysis overestimates the value of transport improvements</td>
<td><strong>Cell five</strong> No market failure Economic benefits equal to transport benefits, conventional cost benefit analysis fully adequate.</td>
<td><strong>Cell six</strong> Extra output in transport using sector and job creation in assisted areas, total economic benefits exceed transport benefits.</td>
</tr>
<tr>
<td>Non externalities, optimal capacity, user charges correct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private marginal cost greater than long run social marginal cost.</td>
<td><strong>Cell seven</strong> Transport benefits and transport using benefits are of opposite signs for conventional cost benefit analysis. Indeterminate case.</td>
<td><strong>Cell eight</strong> No market failure in transport using sector, standard case for expanding transport usage by reducing user charges</td>
<td><strong>Cell nine</strong> Spare capacity in the transport sector and transport benefits understate total economic benefits, reduction in user charges may give welfare gains.</td>
</tr>
<tr>
<td>Positive externalities, spare capacity, user charges too high</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.3 Transport’s Economic linkages and Cost Benefit Analysis

Following their assessments on the linkages between transport and the economy, SACTRA then turned their attention to whether these relationships are adequately addressed within current methodologies assessing infrastructure projects. From their earlier findings, they identified four questions that would have to be addressed in future appraisal methodologies. These were:

1. What is the rationale for the intervention?
2. What are the benefits/disbenefits of the intervention using best practice in cost benefit analysis (assuming perfectly competitive markets)?
2.5 What are the total economic impacts of the intervention?
3. What is the pattern of gains and losses, in both economic and employment terms, from the intervention?

The first of these questions is necessary for the promoters of the scheme to assess whether their final objectives will be met, particularly when these are economic or social goals rather than criteria limited to transport per se. Answering this question also enables the selection of appropriate modelling techniques for the assessment of the scheme.

SACTRA emphasised that this stage of the process should not exclude any of the possible objectives the scheme would need to address. In the UK context this relates to the five areas that the government has identified as relevant objectives for transport infrastructure. In EU terms this would be all of the objectives of the union defined in Article 2 of the Treaty – this is a point to which we shall return later in this report.

The following two related questions (2. and 2.5) are the entire extent of analysis of transport projects currently. SACTRA point out, however, that even this limited assessment is highly variable in coverage and quality. SACTRA categorises the range of possible coverage of cost benefit assessment into four types:

- CBA – traditional cost benefit assessments that take no account of changes to the transport market resulting from the intervention
- CBA* - cost benefit analyses that account for the changes to the transport market resulting from the intervention
- CBA** - cost benefit analysis that accounts for both the changes to the transport market and changes to land use
- CBA*** - cost benefit analysis that accounts for transport market and land use responses as well as for market imperfections.

In order for the second part of this question to be answered (2.5,) an analysis of the type designated CBA*** would be necessary. Only when all of the types of economic responses from the intervention are accounted for in the assessment will a clear picture be created of the likely total economic outcome of the intervention. SACTRA, of course, recognised that quantifying the exact value for each of these economic impacts would not be possible at the present time. However, an estimation of the elements would be an improvement on no estimation at all. The report concludes that
“some analysis of the total economic benefit, as opposed to simply the transport benefit, should be mandatory for all interventions: no escape should be possible from this requirement.”

SACTRA highlighted a further step that would improve cost benefit analysis – the accounting of environmental impacts in the cost benefit analysis. SACTRA also noted that the schemes or interventions assessed by these various cost benefit analysis methods could be traffic reduction measures as well as traditional “transport improvements”.

The final question SACTRA posed as necessary for any complete assessment (Q 3.) is particularly important when the aim of the scheme is to economically assist a particular area or group. Even where this is not the case, balanced information on who will benefit from the scheme is important for judgements to be made on the overall benefit the scheme represents.

The reason that this question is so key is due to what SACTRA called the “two-way road argument”, which was described in Section 3.1 Benefits can flow in both directions along the new link, and it is the net balance of benefits that is of interest to determine whether the scheme improves or damages the economy of the deprived area.

SACTRA also noted that even when there are beneficial effects in the target area this could be at the expense of others outside the area. For example, any new jobs which are created may simply be transferred from another equally depressed area nearby, giving no net benefit. Identification of both the winners and the losers from the scheme is thus necessary if balanced and responsible decisions are to be made on any scheme.

In conclusion therefore, SACTRA highlighted the shortfall that exists between current assessment practice and that which is necessary for infrastructure schemes to be fully assessed. This requires that

- the motivation for schemes be made explicit and assessments devised which are appropriate to these objectives,
- the full economic impacts of the scheme in an imperfect market be assessed, and
- the pattern of these costs and benefits be included.
4. Applying SACTRA to “Europe”.

There are several ways in which the conclusions of SACTRA need to be applied outside of the UK to the rest of Europe. Each of these will be reviewed in turn.

- Firstly the SACTRA conclusions should be applied to EU plans, programmes and expenditures, and in particular to the TENs.

- Secondly SACTRA should be applied to the enlargement of the EU. Of particular relevance to the economies in transition in Central and Eastern Europe is the finance that is due to be granted for transport infrastructure to aid their economic development. The decisions on the priorities for this expenditure need to based on the SACTRA conclusions. Otherwise inappropriate decisions will stymie the successful development of this region and endanger the economic cohesion of an enlarged EU.

- Thirdly the SACTRA conclusions should be applied to the practices of other European institutions in general and not just limited to the EU. In particular the international financial institutions that provide finances for large transport infrastructure schemes need to incorporate the SACTRA findings into their decision making procedures for loans.

- Finally, the assessment procedures used domestically in other European countries should be amended to account for the findings of SACTRA and the development of a standard economic appraisal methodology for the TENs within their own infrastructure decision making procedures.

4.1. Applying the SACTRA Conclusions to the EU

Firstly the SACTRA conclusion on the benefits from decoupling economic and transport growth mean that EU efforts to internalise external costs must be redoubled. Application of the approach outlined in the 1998 White Paper on fair payment for infrastructure use has thus far been limited to the rail package. Similar application now needs to follow for the other modes; road air and sea.

This can be best initiated for roads by amending the Eurovignette Directive to allow electronic km charging as outlined in the T&E publication: *Bringing the Eurovignette into the electronic age* (T&E 00/4).

In addition a European environmental aviation charge should be proposed in line with the Commission Communication on Aviation and the Environment. A European framework for differentiated wayfare dues should also be proposed by the Commission to apply the same approach to shipping (see T&E report: *Economic Instruments for reducing Emissions from Sea Transport* – T&E99/7).

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5 Directive 1999/62/EC.
Secondly expenditure on infrastructure should be guided by the value for money it offers. This is particularly important for the large scale expenditures that the EU undertakes on transport infrastructure with single market or economic development objectives. Areas of EU activity that are most relevant to the SACTRA findings are the Trans-European Networks and the transport expenditure under the structural and cohesion funds.

The sums involved are dramatically large as Table 1 above indicated. In the period from 1993 to 1999 Transport TEN infrastructure investment amounted to at least €13.7 billion.

Strangely, the degree to which this large expenditure has offered tax payers value for money has yet to be assessed by any of the watchdogs charged with such evaluations. The Commission has, however, itself assessed the employment creation potential of the 14 priority projects of the transport TENs\(^7\). This work found that the employment creation potential of these projects was of a low level. Real employment benefits not being foreseen until a long time after completion, with the assessment time horizon stretching to 2030. Moreover SACTRA experts viewed even these modest employment growth figures as over-optimistic. In their interim report SACTRA experts stated that they were... "at present unpersuaded by the size of the impact of transport on jobs claimed by a number of European studies (e.g. European Commission (1997))".\(^8\)

It is most interesting that there are very little data available to enable any comparison between the estimated benefits from this Expenditure on TENs and a similar sum spent on urban regeneration or health or education and training. Even if the TENs expenditure produces benefits this is, therefore, no indication that the expenditure represents good value for money - given that the aim of the TENs is economic regeneration.

The expenditure already undertaken or committed on the 14 priority TEN projects should be subjected to an ex-post evaluation along the lines advocated by SACTRA. Such an evaluation would be able to assess the degree to which these projects should have been considered priorities.

The problem is that the methodologies for completing CBA\(^***\) (that is a full assessment accounting for transport market and land use responses as well as accounting for market imperfections) are far from being at a stage where a comprehensive assessment could be undertaken with widespread methodological agreement. Meanwhile the planning and building of new infrastructure goes on anyway, with no clear means of assessing whether it is meeting its supposed objectives.

Yet this is exactly the situation decision makers found themselves in 1995 with respect to Strategic Environmental Assessment (SEA), when the guidelines implementing the TENs were first agreed. SEA had emerged as a necessary addition to the decision making process as traditional environmental impact assessments were failing to elaborate the impacts of entire polices, plans and programmes, focussing as they do on individual projects.

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\(^8\) SACTRA Interim report page 2, paragraph 3.
As a result Article 8 of these guidelines outlined how a methodology to undertake an SEA of both individual corridors and the entire network should be developed. The approach taken was not to ignore the problem of a lack of an agreed methodology, or the low state of development of such methodologies. Rather the approach taken was to proactively elaborate such a methodology within the framework of the guidelines. These guidelines are now being revised and the revision will include an updating of Article 8 to account for the SEA methodologies that have been developed since 1995.

Since this time little has been accomplished as far as application of the SEA methodologies, either for the network as a whole or for individual corridor assessments. Over the same period a Directive on SEA has been adopted but this does not extend to TENs because of the reference in Article 8 of the TEN guidelines.

Moreover following adoption of the guidelines, the environmental objectives of the Community have been strengthened. The revision of the TEN guidelines should therefore include a strengthening of the environment Article including mandatory application of the SEA methodologies developed thus far.

In the same way, the revised guidelines will also need to include a standard economic appraisal as advocated by SACTRA. Without such a standard appraisal evaluation of the value for money that the TENs are offering the European tax payer will remain unclear. This is particularly important given that the agreed TEN-T network is far larger than the elements that have secured funding to date. The decisions on whether to commit the large additional funds required for this extra infrastructure should be guided by the provisions of the Treaty and whether this expenditure would offer value for money to tax payers. This in turn will require the new TEN guidelines to mandate SEA and economic appraisal.

Improved cost benefit assessments, that have mandatory structure to account for the failings of traditional CBA, can and should be elaborated. The TEN guideline revision offers the opportunity to develop such appraisals with an agreed methodology in a proactive manner. The same approach, in fact, that was previously adopted with respect to SEA for the TENs.

The first step in the development of such an agreed methodology for a standard economic appraisal would be to complete an evaluation of the 14 priority TEN projects agreed at the Essen summit. These are all completed, close to completion, or towards the end of the decision making process, and so represent a good data source for the elaboration of a standard economic appraisal.

The fact that a common agreed methodology for a perfectly specified CBA has yet to be finalised should not therefore prevent assessment of a more thorough nature than utilised to date. Indeed it is only by using the best tools available that it will ever be possible for decision makers to make the most informed of judgements. With the absence of such analysis on the development of the TENs there is little to judge their appropriateness for their primary goals: aiding the single market and increasing economic cohesion. It is time this omission of analysis was rectified.
4.2. Applying the SACTRA conclusions to the enlargement of the EU.

These levels of expenditure on the TENs are likely to increase in the future with the expansion of the network eastwards as accession states use ISPA funding to complete the infrastructure identified by the TINA process as “needed.”

At present the total infrastructure identified by the TINA exercise represents an extremely large financial commitment, representing as it does 1.5% of GDP for the accession states. This large scale public investment in the accession states is of course part of the larger drive for economic cohesion across Europe and to bring the level of economic activity in the CEE countries to a similar level to the EU. But if this investment is to produce a positive contribution to this goal, an in-depth assessment of the economic impacts of the actual transport improvements envisaged will be necessary. It would, indeed, be a major disservice to the citizens of CEE countries and the tax payers contributing to the projects if the net result of a large scale transport infrastructure project in CEE region was an economic outflow due to the “two way road” effect. At the same time, paying for these major schemes might well crowd out other, more productive, investments both in transport and elsewhere.

The transport schemes included in the development of methodologies for a standard economic appraisal within the next TEN guidelines should, therefore, also include the assessments of the TINA priorities as a matter of urgency. Given the evidence that transport infrastructure programmes do not bring guaranteed net economic benefits and can be economically damaging the emphasis for ISPA funding needs to move away from transport projects before such assessment methodologies have been developed. If this is not done then there is an obvious danger that the economic regeneration of the region will be stymied as ISPA funded cohesion efforts produce counterproductive results.

4.3. Applying SACTRA to Other European institutions and International Financial Institutions

It is not just the EU and Member States that fund large-scale investments in transport infrastructure. Particularly important additional sources of finance are the International Financial Institutions (IFIs), particularly the European Investment Bank (EIB), and to a lesser degree the European Bank for Reconstruction and Development (EBRD) and the World Bank.

Environmental NGOs, including T&E Members from CEE countries, have criticised the EIB in particular for its decision making practices. These have been characterised by a low priority for environmental considerations alongside an un-transparent and inefficient decision making process. The EIB has defended its decisions against these charges by stating that its remit is to aid economic development rather than protect the environment of the countries which receive its funds. They argue that environmental protection is the responsibility of the governments to which they lend.

There is indeed some merit to this argument. There does need to be accountability for the environmental damage wreaked by projects supported by IFIs both from the lenders and those proposing projects. The IFIs can not wash their hands completely of environmental responsibility by merely stating that they are following their
instructions. Moreover this defence does not answer the charge that their decision making is un-transparent and inefficient.

Indeed the criticism that the EIB lending decisions are inefficient is recognised by the EIB itself in that they do not take sufficient account of the full economic impacts of the projects themselves. In their Annual Report of 1998 the EIB admits that:

"the EIB does not yet have an instrument for or other means of systematically assessing the impact of its lending on regional development. In fact the studies found that only in half the cases were there clear indications of positive impact on regional development, while for about a quarter of the projects financed, there had apparently not been any decisive impact. It is also clear from the studies that geographical location alone is not a sufficient criterion to ensure regional development impact"

Whilst the EIB is a larger contributor to transport infrastructure projects, the EBRD does also play a significant role. The EBRD has implemented a rigorous environmental assessment programme for its lending activities. This is unsurprising given that its founding Articles require it to “promote in all its activities”... “environmentally sound and sustainable development.”9 Yet the methodologies used to assess compliance with this statute do not address sustainability, but are limited to environmental criteria only10.

This has led to the EBRD funding a number of schemes that whilst clean for their type, do not contribute to sustainable development with the same certainty. For example in 1999 the EBRD granted a €66.8M contribution to the restructuring of the M1/M15 motorway in Hungary11. Leaving aside the contribution this scheme makes to promoting increased motorisation in Hungary, it would still need to be economically beneficial for it to be sustainable. Without a full assessment of the economic effects of this scheme as recommended by SACTRA, there is no guarantee that it would even contribute to this economic pillar of sustainable development. For the EBRD to fully comply with its own founding statutes it urgently needs to ensure that the projects it finances deliver on all three pillars of sustainable development; economic, social and environmental.

There is therefore an urgent need for the IFIs to develop a standard economic impact appraisal, not only for transport schemes but also ultimately for similar large-scale investments that aim to regenerate regional economies. The work following SACTRA on developing methodologies for a standard economic appraisal for transport projects could therefore aid an improvement in the lending decision making procedures of IFIs. Moreover, there is an opportunity for IFIs to develop such methodologies further to ensure relevance to all their lending activities and not merely those relating to transport projects.

9 Founding Articles of the EBRD Article 2 paragraph 7.
10 The EBRDs published environmental policy document does not even mention sustainable development in the section outlining the "general principles and objectives" of its environmental policy. The statement does, however, note that “The EBRD will ensure through its environmental appraisal process that its projects are environmentally sound and that their environmental performance is also monitored”.
11 Details from EBRD web site.
4.4. Applying the SACTRA Conclusions to other countries

The extent to which this is necessary will, of course, depend on the degree to which current practice at national level diverges from the SACRA findings. Furthermore it will probably be necessary for a discussion along the lines of those SACTRA undertook in the UK for the findings of SACTRA to be both recognised and correctly applied in each other country.

However there is a danger that national experts in each country feel the need to undertake a complete review similar to that undertaken by SACTRA in the UK. Whilst this mistrust of the applicability of work completed in other countries is understandable, recreating the entire SACTRA report would be an unnecessary duplication. It is important to emphasise that the SACTRA report is a review of all the relevant evidence from an array of international sources, and was undertaken by some of the most respected world experts in the field. Whilst many of the conclusions are applied to the UK situation this is because it is a report to the UK government. It does not invalidate the conclusions in other countries. The primary exercise that remains for other countries, therefore, relates to the application of the SACTRA conclusions rather than their repetition.

The SACTRA report does represent a challenge to the current orthodoxy of assumptions and prejudices held dear by decision makers in many countries. It does not, however, challenge the academic orthodoxy, but represents the consensus academic views on the subject. Bringing compatibility between the academic understanding and the mind sets of decision makers will be the role of any national “SACTRA” studies undertaken.

Moreover, as more states undertake such reviews the extent to which the SACTRA conclusions represent the international orthodoxy will undoubtedly increase. The process may be slow at first, therefore, but could be expected to increase in speed over time.
5. Conclusions.

This T&E report has reviewed the conclusions of the SACTRA committee and how they may be applied to European policies. The conclusions of SACTRA mean that many of the assumptions and prejudices held by decision makers across Europe are, in fact, incorrect. **There are no automatic economic or employment benefits from building transport infrastructure.**

Indeed there have been numerous occasions where elected local decision makers have made it clear that they too question the benefits from transport infrastructure investments. The fact is, however, that they continue to seek finance for such projects. This is because though they know the system is based on flawed assumptions, if they are to be recipients of central funding for regional development they must utilise what is available. They are caught in a trap. Apply for funds knowing they will be of little or no assistance – as well as some local resistance – but ultimately they will secure money “for their area”. On the other hand they can fail to apply for these available funds and await the reaction of the local electorate when no financial assistance has been “won” for them.

There is great pressure currently to ensure that policy makers base their decisions on the application of sound science on issues from food safety to GMOs. It is, therefore, ironic that those responsible for the current system of regional development assistance and transport infrastructure financing still seem so unwilling to listen to the academics on this particular issue.

The fact is that the sound science on transport and the economy informs us of some basic relationships that run counter to current assumptions:

- There are no automatic economic or employment benefits from new transport projects, and some projects may be economically harmful;
- Even when a specific project produces economic benefits, the more economically deprived end of the link may still lose out economically;
- The link between transport growth and economic growth can be broken, and this is best achieved if charges are levied to correct market distortions e.g. internalisation of externalities;
- Cost benefit analysis as currently undertaken fails to elaborate the true economic impacts of schemes and wrongly assumes market perfection;
- A standard economic impact appraisal that includes a more comprehensive cost benefit assessment is a pre-requisite for any transport project and any that do not produce net social benefits should not proceed.

These conclusions can be applied to European policy making and would require the following changes:

- A redoubling of the EU efforts to internalise external costs in all modes of transport;
- The revision of the TEN guidelines should include the elaboration of a standard economic appraisal methodology which would then be applied to any extension of the network;
An assessment of the value for money that the TENs are offering the European tax payer should be undertaken by those responsible for overseeing community expenditure – particularly the European Parliament’s Budgetary Control Committee;

Future revision of the EU’s cohesion and structural funds should incorporate the standard economic appraisal developed under the revised TENs guidelines;

The ISPA funds being allocated to TINA projects for expansion of the TENs under EU enlargement should also reflect the development of the standard economic appraisal to ensure that the TINA priorities serve the CEE economies and not the current EU15;

IFIs funding transport infrastructure should incorporate into their lending decision making processes the standard economic appraisal if they are to serve the economic development of the countries to which they lend;

The SACTRA conclusions should replace the inaccurate assumptions and false orthodoxy held by decision makers in all the countries of Europe and beyond.

At the start of this report we highlighted how the “European project” of the then Commission President Jacques Delors had been jeopardised at the start of the nineties by a slowdown in the European economy. Since that time the economy has revived and unemployment rates are slowly improving. The suggested remedy of the TEN transport network is however far from completion. Furthermore, the sections to have been completed have little to do with the economic or employment progress made to date. Completion of the network will also require very large additional sums of public money.

More significantly during the same period the “European project” has been questioned ever more fundamentally. Citizens in Europe have voiced their concerns over further European integration, notably in several referenda. Member State politicians have become unwilling to grant more power to the EU as a result. The EU is frequently portrayed in the media, and perceived by the public, as wasteful, corrupt, and inefficient.

Failing to listen to the academics on the need for a thorough appraisal of infrastructure projects, especially on the value they offer to tax payers, will reinforce this image and undermine the goals of European cohesion and integration.
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About this paper
Investing in transport infrastructure is frequently assumed to provide large-scale economic and employment benefits. So much so that large proportions of EU and national budgets set aside for regional assistance or economic regeneration are devoted to transport infrastructure. Empirical evidence to support this general assumption is, however, notable by its absence.

A panel of leading experts in this field has concluded that there are in fact no automatic economic or employment benefits from such spending on transport. The Standing Advisory Committee on Trunk Road Assessment (SACTRA) in the UK reviewed all the questions related to Transport and Economy. They found that benefits from transport projects may be limited, they may go to the already well off, or there may not even be any benefits. Yet decision makers, and the funding systems they have developed, continue to rely on the assumption that there are automatic benefits. The assumptions and prejudices held by Europe’s decision makers are, in fact, incorrect.

This T&E report has reviewed the conclusions of the SACTRA committee and how they may be applied to European policies. A focus of this report is the need to assess more fundamentally the economics of infrastructure investments and the benefits they may provide before money is allocated to them. Rejecting a thorough appraisal of infrastructure projects, especially on the value they offer to tax payers, will undermine the goals of European cohesion and integration. It will reinforce the image of the EU as unwilling to listen, and composed of an inefficient, wasteful and potentially corrupt civil service.

About T&E
The European Federation for Transport and Environment (T&E) is Europe's primary non-governmental organisation campaigning on a Europe-wide level for an environmentally responsible approach to transport. The Federation was founded in 1989 as a European umbrella for organisations working in this field. At present T&E has 37 member organisations covering 20 countries. The members are mostly national organisations, including public transport users' groups, environmental organisations and the European environmental transport associations ('Verkehrsclubs'). These organisations in all have several million individual members. Several transnational organisations are associated members.

T&E closely monitors developments in European transport policy and submits responses on all major papers and proposals from the European Commission. T&E frequently publishes reports on important issues in the field of transport and the environment, and also carries out research projects.

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