

What are the Arguments Really About?

Transport Pricing and Broader Economic and Environmental Objectives

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Summary

This paper portrays the debate about European policy on transport pricing - especially as contained in the EC White Paper 'European transport policy for 2010' - in terms of two different agendas. The first relates to providing efficient conditions of competition between companies operating in different Member States, as determined by their patterns of private revenue, costs, profit and loss. The second relates to reducing the problems of environmental damage, congestion, accidents, ill health and inefficient land use which are due (in part) to the absence of charges for such costs. Transport has been made cheaper by success in the first agenda, which has resulted in greater waste of resources due to mounting external costs, and makes the second agenda increasingly urgent.

Both depend on the well-established theoretical axiom that prices should equal marginal costs. But 'costs' are defined differently by a company or consumer on one hand, and a region or whole economy on the other. The two approaches *can* be made completely consistent with each other - but it may not seem that way to stakeholders, which can explain their different degrees of enthusiasm.

Key areas of controversy - some overt and some latent - are identified as

- should fuel taxes be harmonised upwards, at a level, or downwards?
- will there be an increased tax-take overall, or a neutral effect on tax?
- what is the implication of this for funding of complementary improvements in environmentally-friendly transport means?
- what principle should govern sequence of implementation?

The treatment of these questions in the White Paper itself is examined, with a view to identifying future controversies which may arise from the current ones. Reference is made to the SACTRA report on Transport and the Economy; also an ECMT study of urban 'sprawl'; also a commentary on the work of the previous Transport Commissioner's 'High Level Group' on infrastructure charging. Broadly, these show an important evolution in professional discussion, with wide support (in principle) for the idea of using transport prices as a vital arm of developing sustainable and efficient economic growth, and efficient patterns of consumption whose benefits are not outweighed by direct and indirect costs.

But if (for convenience of phasing) this is put in second place to further development of commercial price and tax reductions, economic and environmental damage may be done that will be difficult later to correct later. This is likely to be the greatest controversy affecting practical implementation.

1. Introduction

The objectives of this paper are:

- To portray the debate which exists regarding the potential impacts of more efficient transport prices on the economy, land-use patterns and the environment;
- To assess the debate and to identify the probable nature and scale of impacts at the urban, regional, national and European level
- To set out what these potential and probable impacts mean for the implementation of more efficient transport prices;
- To stimulate discussion amongst the seminar participants.

Of course, these objectives overlap with almost every other paper to be presented at the seminar, and it is not necessary to repeat the large volume of quantitative evidence and policy prescription in each paper. Therefore the focus here will be on the themes of ‘debate’ and ‘discussion’ - these being driven, as always, by areas where agreement is not yet fully achieved. Inevitably, therefore, the paper leans in the direction of dissension rather than consensus.

For this reason it may be helpful to say at the start that the author is entirely in agreement with the fundamental IMPRINT aim, that is

developing recommendations for how to implement transport pricing reform based on the principle of marginal cost pricing.

This principle has a very long history in economic theory and practice, representing one of the few (almost) universal principles taught to students of economics.

The essence of the objective is that if this is done, individuals, companies, regions, nations, Europe as a whole and indeed the World will enjoy more efficient economies, less congestion, a more pleasant environment, less waste of resources, and higher welfare. But this will be at the expense of some vested interests who genuinely benefit more from the current situation, whose opposition is assisted by many others who, although they would benefit, do not yet believe this to be true.

2. Basic Principles: Controversies from the Textbooks

The (nearly) universal theoretical principle that prices should equal marginal costs has always been subject to discussion and difficulty, and many of the controversies which are now current may be seen as restatements of these old problems.

We now briefly summarise the underlying rationale for marginal cost pricing, and two recurrent difficulties, which tend to recur in every theoretical and practical study, namely (a) what to do when the marginal cost is different from average cost (especially, when it is lower), and (b) how to ensure that indirect or external costs (which, by definition, will be imposed on someone else, and will often be more distant) are treated as seriously as the more tangible immediate costs.

Traditional Rationale: if a company charges *less* for its goods than the marginal cost of producing them, every additional unit it provides and sells will bring in a revenue less than it adds to cost, and therefore make a loss. Consumers, faced with prices below marginal cost, are encouraged to buy goods which provide a benefit, to them, less than the cost of resources to the economy. So the company loses profit and the economy as a whole loses welfare. If a company on the other hand charges prices which are *greater* than the marginal cost, consumers are deprived of the opportunity of buying goods which will give them a benefit greater than the cost of producing them. (And, in the case of a perfectly competitive economy where the firm cannot influence price, it will be sacrificing profit as well). So the economy as a whole loses welfare. Prices less than marginal cost sacrifice benefit, and prices greater than marginal cost sacrifice benefit. Prices equal to marginal cost will maximise economic efficiency and consumer welfare, so represent optimum overall use of resources.

Difficulty 1: what if marginal cost is less or greater than average cost?

Where marginal cost is less than average cost (for example when there are economies of scale, when raising production will reduce unit costs) the rule would mean that the *total* revenue raised by the company will be less than the *total* cost and sooner or later it will go out of business. Where marginal cost is greater than average cost (for example when there are increasing constraints on production or shortages of materials or skills, acting as mounting barriers to greater output) the rule results in the company making excessively large profits, exploiting a form of monopoly power, and sooner or later this will cause other unacceptable stresses.

How to resolve this difficulty?

Classical economic theory cleverly resolved the problem by demonstrating that - in a perfectly competitive economy - it would solve itself. Companies would expand, contract, leave or join industries in such a way that over time, prices would equal marginal cost as desired, but also marginal costs would equal average cost (including a decent allowance for a modest profit).

Few people now believe that real economies naturally and spontaneously find such an ideal state, perfection being a useful textbook construct but imperfection the natural state of experience. This is the reason why the European Union (and market economies in general) are usually in favour of encouraging competition and reducing

distortions or imperfections such as monopoly, state subsidy, etc, which are seen as distortions of competition. Currently the phrase ‘Regulated Competition’ is used to express a target of a practically achievable economy with at least some of the advantages of the theoretical ‘Perfect Competition’.

But in the absence of perfect competition (or, during the long, long wait for it), the problem still remains. Coping strategies to deal with it include systems of ‘lump-sum’ charges, taxes etc which are intended, as far as possible, to solve the financial problem of companies without distorting the resulting pattern of demand and output - ie the objective is to achieve the same pattern of demand and output and resource allocation as *would* apply if all prices are equal to marginal cost. This gets complex, especially due to a rather damning piece of economic theory called the ‘second best’¹ principle’.

But in practical terms, if we have an economy or a sector where some prices are above marginal costs, and some below, active intervention by an enlightened Government can ‘square the circle’. The prescription is to tax some companies and use the money to subsidise other companies. In principle this form of tax and subsidy regime is *not* an economic distortion - quite the reverse - but it goes against the grain of simplified decision rules, and is often feared because it seems to provide an infinitely flexible excuse for huge flows of state funds.

Therefore it is not uncommon for the argument to fall at the final fence: yes, marginal cost pricing would be right, but its implications for intervention and expenditure are too difficult, and not worth the effort. At this point in an argument, there will usually be a tortuous (and unconvincing) explanation why average cost pricing is the best after all, seeking to provide some theoretical legitimacy for a course of action which actually only has, or needs, pragmatic resignation.

Difficulty 2: how to allow for social costs?

All the traditional textbook discussion treated ‘costs’ as being those elements which accountants would recognise, which entered into a company’s profit-and-loss account, and which therefore provided a set of decision rules of obvious commercial application. From the 1950s (in relation to congestion) and then especially in the 1990s (in relation to pollution) it became recognised that there were real costs - using economic resources - which did not enter into company accounts in the same way, but nevertheless were important generally and crucial for the economics of transport. When firms or individuals make transport decisions, they impose costs on other firms and individuals which *somebody* has to pay, but not the decision-makers themselves. In some cases such costs would be quite apparent, but necessarily ignored because of the private constraints of balance-sheets and shareholder value. In other cases they were less apparent, being distant, diffuse and invisible. And equally ignored.

¹ This shows that if prices do not equal marginal cost in some sector of the economy, it may not be helpful to implement them in another sector. In the limit, this theorem makes it almost impossible to be certain about doing anything, and is a recipe for endless studies and little improvement. To avoid confusion, this theoretical difficulty does *not* carry the same message as the common search for good ‘second best’ courses of action which, in the real dynamically-changing world, are often very helpful - and indeed, under the axiom ‘the best is the enemy of the good’, often more useful than aiming at a theoretical but unobtainable optimum as defined by some sort of modelled equilibrium.

As it happens, the algebra proving that marginal costs should equal price are identical in the case of social costs as in the case of private costs. The only thing that is necessary is to broaden the language from 'profit' to 'wider economic benefit'.

There has been progressive interest in extending the argument in this way, in turn to congestion, safety, environmental impacts, health, and land-use. (See paper by Nash and others, and Annex 1 and 3).

But although the algebra and the logic is identical, it *feels* different. Psychologically, any one individual or company tends to think that these costs are not 'real' in quite the same sense as flows of tangible money; and scientifically, detecting and measuring those wider costs requires different methods than the (sometimes illusory) exactness favoured by accountants².

How to resolve this difficulty?

The central resolution must depend on winning wide enough recognition that the external costs are real, genuine costs which affect economic efficiency *whether or not* they are included in company accounts. This is probably more widely accepted now than it has been, though not universally.

Scientific research will, and should, continue to inform this discussion, but the prescription that it needs to be certain, and universally agreed, before it can be implemented would represent a barrier to improvement that is substantial, and perhaps unbreachable.

² It is intriguing to note that companies and their shareholders are generally ready to accept detailed prescriptions of how to account for depreciation (for example) that are at least as diffuse, difficult to understand and dependent on conventions and assumptions as any environmental impacts.

3. The 2001 White Paper and the ‘two agendas’ of European Transport Policy.

In September 2001 the European Commission published its White Paper *European transport policy for 2010: decision time!*³ Its overall line of argument followed quite closely what has become the ‘new realism’ in transport policy, discussing the need to reduce traffic growth and its negative consequences especially pollution and congestion - which act as a barrier to economic efficiency and social progress - and recognising that this can only be done with a package of many different sorts of measures aimed at ‘rebalancing’ the distorted competition between modes of transport which has, in part, led to the problem. Many of its specific proposals reflect important current thinking about transport policy, especially in relation to urban traffic.

However, where the White Paper adds a distinctive flavour of its own - for which the ground had been prepared in an earlier White Paper on Pricing, and over several years in the work of the current and previous Transport Commissioners and their advisors - is the centrality of the concept of ‘regulated competition’ and in particular the role of prices.

The diagnosis offered by the White Paper (p6-7) may be summarised in the following agonising - almost intolerable - problem:

The first priority of the common transport policy was the ‘opening of the transport market’, perceived as essentially being about the commercial competitiveness and efficiency (judged in terms of their private costs) of transport companies, and the reduction of unwarranted state subsidy. Much of this has now been successfully completed.

This resulted in a significant drop in consumer prices. In turn, this resulted in a rapid growth in travel.

But the changes in industrial supply and consumer choices contributed to ‘unequal’ (ie unbalanced) growth in the different modes of transport, congestion on the main roads and rail routes, in towns, and at airports, as well as harmful effects on the environment and public health.

In other words, the first priority was to strengthen competition between companies measured in terms of the private market, and now it is time to solve the wider problems this has caused for the economy as a whole.

But it is fair to point out that the unbalanced growth would not have happened - or not have happened to such a great extent - if the *commercial* definition of efficiency had been less dominant in the early days of the common transport policy.

Here we should note the conclusion of SACTRA (see Annex 1) that

³ This may be the only example of a White Paper with an exclamation mark in its title - expressing, perhaps, something of the impatience of the Commission in the rather slow progress. The inside pages however revert to the rather softer tone of ‘time to decide’ (without the exclamation).

“...if transport prices are currently too low due to uncharged congestion or environmental effects, then a transport improvement could lead to additional costs for the economy”.

The implication of this is that action to reduce transport prices, when the first phase of the Common Transport Policy started to be successful, may have imposed additional burdens of external cost on European economies, resulting in apparent improvements in efficient use of resources at the company level (and real increased profits), but worsening efficient use of resources at the regional, national and international level (and real increased pollution and congestion).

One way of interpreting this is to split the apparently single principle, ‘prices should equal marginal cost’ into two separate agendas, which had a substantial influence on the work of the previous Transport Commissioner’s ‘High Level Group’ of advisers on infrastructure charging, as summarised in the author’s commentary (as a member of this Group) in Annex 2. The first agenda was concerned mainly with costs as they are seen in company accounts, affecting therefore the conditions of competition between companies based in different Member States. The second agenda is concerned with costs as they are imposed on economies as a whole (above all when these are different from those perceived by companies) and therefore affecting overall economic prosperity.

These two themes are both expressed in the White Paper, as may be seen by considering two of its most important proposals, namely (p16)

“The White Paper develops the following guidelines:

- **harmonisation of fuel taxation for commercial users, particularly in road transport.**
- **alignment of the principles for charging for infrastructure use; the integration of external costs...**”

There is a consistency between these two, but it is *potential*, not *inevitable*, as may be seen by the varying enthusiasm which many commentators express for one or the other, but less frequently for both. The balance of attention put on one or the other - and especially differences in views about which should come first - may be seen as the primary fault-line underlying the current debate, as will be argued below.

4. Practical Policies and Underlying Controversies

Here we start by interpreting the debate on the ‘Old Agenda’ policy, harmonisation of fuel taxation for commercial users, intended to encourage fair competition between companies, and then the implications for the ‘New Agenda’ policy, especially charging road users for the congestion and environmental damage that their travel causes.

The White Paper recommends (p110)

“Make the tax system more consistent by proposing uniform taxation for commercial road transport fuel by 2003 to round-off the internal market”.

Naturally, such a sharply defined suggestion will have a sharply defined response. In British newspapers a story was run for a while that the European Commission planned to instruct the British Government to reduce its fuel taxation - in some versions for lorries, in other versions for all transport - to the European average. Since the UK has fuel tax much higher than the average, this would constitute a large price reduction, with great significance for Government revenue, and for transport operators, and for traffic growth. From a media point of view it was a ‘good story’, resonating into many different controversies including UK attitudes to membership of the common currency, and the campaigns, exactly one year earlier, on fuel price⁴.

The media treatment swiftly died away, partly because of denials of its truth, and partly because of other more urgent media preoccupations. But the basic issue is, in fact, still there. If there is ever to be unified fuel taxation, then the real political question is not ‘should it be unified?’ but ‘*at what level?*’

The choices might be

- a) ‘unify at the current highest level’. This would mean tax increases in every member state except one, and would be difficult to achieve consensus.
- b) ‘unify at the current average level’. This has a superficial appearance of preserving a sort of average status quo, but would not seem that way as there would be substantial changes, some up and some down.
- c) ‘unify at some other level’ - justified by an economic or scientific argument.

In the White Paper, the proposal is that the unified level would be somewhat higher than the current average level (box, p80) but there is no hint that it would be at the current maximum, and perhaps one might imagine a level which would mean - say - two thirds of member states increasing, and one-third (including, of course, the UK as the leading example) reducing, their current tax. Assuming that this was *only* applied to diesel fuel used for freight vehicles (and not, or not yet, for petrol used for private vehicles, left at its current level), then one might expect a ‘self-interested’ political argument in each country broadly as suggested in Table 1.

⁴ The fuel price demonstrations in September 2000, while taking place simultaneously in several European countries, took on a rather different character in each of them. In the UK - for complex reasons outside the scope of this paper - it became mixed up with agricultural problems, rural policy, and controversies about fox hunting, which fed into a rather general discontent about failed delivery of political promises, as well as continuing controversies about the EU.

Table 1: Initial responses to proposal to unify diesel fuel tax

	Countries which have to increase tax level	Countries which have to reduce tax level
Stakeholders in favour	Ministry of finance Ministry of environment Environmental activists Private motorists Railways	Freight companies Ministry of trade Political parties Road builders Buses (unless exempt)
Stakeholders against	Freight companies Ministry of trade Political parties Road builders Buses (unless exempt)	Ministry of finance Ministry of environment Environmental activists Private motorists Railways

Nb Ministries of Transport are not included here: they are likely to be internally split, depending on their own progress towards similar strategic aims as defined in the White Paper.

On first sight, this does not seem to be a very favourable balance for swift successful implementation, but (as the White Paper itself recognises) such a policy has its own dynamic and would have to be accompanied by other measures which themselves would reorient the political balance. In particular, the harmonisation of tax on diesel could take place at the same time as the introduction of a kilometre charge for commercial vehicles (ie a profound revision of the vignette directive) – but that kilometre charge would naturally vary by country, type of road, possibly region and even city, in accordance with the local conditions there. In that case, the principle of harmonisation would not be entirely apparent to the freight operator, who would face very different cost levels. Further issues are:

a) A distinction between diesel and petrol is *not* exactly the same as a distinction between lorries and cars, which in turn is also not identical to a distinction between freight and passenger transport. So such a policy would have to be associated with action on petrol prices which (depending on the action) could modify or reverse some of the reactions above. The White Paper says (box, p79)

‘Uncoupling the taxation arrangements for fuel for commercial uses from the tax arrangements for fuel for private use would enable Member States to reduce the differences in tax on cars using petrol and cars using diesel’⁵.

b) There are very many other proposals in the White Paper’s strategy which could alter the conditions of operation as much - or more - than the prices, and these will offset, or in some cases reinforce, the reactions suggested. For example, restrictions on use of private cars in city centres (gently supported among the ‘best practice’

⁵ It is not at all clear what this would mean in practice, since the suggestion seems to require that diesel cars would pay a different price for diesel fuel than lorries do – perhaps by introducing some variant of ‘special’ diesel such as is used for agricultural vehicles? But the logic also implies that cars using diesel for commercial purposes – eg company cars – would qualify for the harmonised price, which, being harmonised, would be higher than the unharmonised price for cars using diesel for private purposes. This is confusing, and I may have misinterpreted this as it seems to run counter to the general preference of commercial traffic over private traffic. It would not make sense for diesel cars using fuel for private purposes to pay less than diesel cars using fuel for commercial purposes. However, in any case it does underline the need for action on diesel, petrol, commercial and private fuel to be consistent).

guidance in chapter IV) could make it easier to arrange reduced congestion for goods deliveries there, which could offset price increases on fuel.

But possibly more important than either of these examples is a recurrent thread in the White Paper representing different views, not yet fully reconciled. This relates to *the use of revenues produced when taxes are harmonised upwards*.

There are three viewpoints which capture, between them, the large majority of opinion on this matter. These are

Viewpoint 1: 'Separate Revenue and Spending' (the pure economists' view, sometimes also supported by Ministries of Finance).

Set the optimal level of each tax in accordance with minimum distortion and maximum efficiency of collection. This produces a single 'pot' of revenue. Once collected, spend it on whatever produces the greatest benefit, independently of its source. Don't link spending to origin of the funds.

It is easy to prove that - in theory - this will produce maximum social welfare, provided that the population of a country are prepared to trust and accept the logic. However, it does not appear in the EU White Paper, and perhaps is seen as a rearguard defence of a failing philosophy in at least some countries. Electors *want* to make a direct connection between what they pay and what society receives, however much they are advised that they should not think in this way.

Viewpoint 2: Tax Neutrality (often the viewpoint of business, and especially stakeholders who reluctantly have to accept the logic of 'polluter pays' but do not like the implications of this for their own business).

Economic and environmental efficiency require increases in some charges, but the additional tax revenue collected should be used to offset other taxes and charges, the overall tax take staying the same.

There are some hints of this view in the White Paper, although muted, notably in the cautious and contingent appearance of approval to a suggestion in a report to the European Parliament (p75)

'It is not so much the overall level of taxes that needs to change significantly, but rather their structure, which needs to be altered radically to integrate external and infrastructure costs into the price of transport. If some Member States wanted to raise the overall level of transport taxes, this policy could, as Mr Costa underlined, be "*designed in such a way as to avoid a net increase in taxation (including charges) in the economy as a whole*", for instance by offsetting any increase in infrastructure charges by lowering existing taxes, such as taxes on labour, or by allocating revenue to the financing of infrastructure.'

A further dimension to ‘tax neutrality’ relates to the classification of groups of interest. It may be taken as axiomatic that there could never be *exact* tax neutrality at the level of every individual. Any change in tax structure that keeps the overall tax revenue constant, while changing relative prices, must make some individuals better off and some worse. One could, for example, keep revenue from ‘motorists’ as a group constant, but there would still – unavoidably – be differences between richer and poorer motorists, or motorists driving high or lower annual distances, or motorists living or driving more in cities or in rural areas, or owners of bigger and smaller cars. This is quite inevitable, and indeed such structural shifts in prices is precisely what provides a significant proportion of the benefit of changing the prices.

This implies that ‘tax neutrality’ is a slogan comfortably used by those who defend the broad interests of an entire group in society – ‘motorists’, or ‘rural residents’, or ‘employed workers’, or ‘the poor’ – but individuals rarely see themselves defined in this way. For the *individual*, tax neutrality would be an accidental and rare occurrence due to their precise situation happening to coincide with the average, and many times more people would – *even in a fiscally neutral overall strategy* – be faced with increases or reductions in the prices facing them in their personal life. So every defender of neutrality for a group, still must accept non-neutrality for many, perhaps most, of the individuals within their group.

Viewpoint 3: Use (‘hypothecation’) of revenues to improve transport (increasingly the view of transport advisers (including the author), and those national or local government agencies who actively want to implement road pricing).

Charging for congestion and/or environmental costs will in general result in a net increase in revenue. This should be used for complementary policies to reduce public resistance and reinforce behavioural responses, especially in improving alternative modes of transport and correcting environmental damage.

There are several emphatic statements in the White Paper in support of this principle, notably p78

“In a good many cases, taking external costs into account will produce more revenue than is needed to cover the costs of the infrastructure used. **To produce the maximum benefit for the transport sector, it is essential that available revenue be channelled into specific national or regional funds in order to finance measures to lessen or offset external costs (double dividend).** Priority would be given to the building of infrastructure that encourages intermodality and offers a more environmentally friendly alternative.”

The same point is made on p16 (with the addition of the specification ‘especially railway lines’), and on p90 this principle is extended firmly to the case of urban road pricing:

“...urban road-charging schemes are well received by the local population only if competitive alternatives are on offer in terms of public transport services and infrastructure. This is why it is essential to use the revenue to help finance new infrastructure for all-round improvement of urban transport services.”

Three unresolved arguments

The argument above illustrates that many of the underlying problems of philosophy and practice have been reasonably well rehearsed in European discussion in the last few years. But not every loose end has been tied up, and we might identify three lacunae in the story which must surely offer themselves for controversy in the next stage of the debate. These are not exactly ‘missing links’ - they are all apparent in the debate if one looks carefully - but have not yet been directly addressed and resolved.

a) What to do when prices should go down?

The discussion above has generally been on the basis that prices will go up, which on average seems correct, as the argument is for incorporating the costs of congestion and pollution which are currently not charged for. But there will be *some* cases when the opposite is true, either for a specific context or even for a whole country. In that case, in principle the arguments above are all symmetrical - if the correct use of extra revenue is to enhance alternative modes, then it is likely that the correct way of balancing reduced revenue would be to reduce expenditure on alternative modes. But this principle seems to have no resonance in the debate at all, except for what is (now) a rarely expressed viewpoint which sees support to public transport to be a waste of money which would be better spent on road building. The logic of the debate (and considerations of a ‘political pendulum’ likely to result if the preferred EU strategy does not itself produce tangible improvements reasonably quickly) is that we could expect a re-emergence of this view - it cannot be written off solely as a vestige of earlier, now abandoned, ideas of ‘predict-and-provide’.

The White Paper does deal with a related point (p78-9)

“There might be insufficient surplus revenue in some cases where, for example, transport policy considerations call for major infrastructure to encourage intermodality, such as railway tunnels. **The framework directive will therefore have to authorise exceptions allowing an element to be added to the amount needed to offset the external costs. This element would be for the financing of alternative, more environmentally friendly infrastructure. This option would be reserved for infrastructure essential for crossing natural environmentally fragile barriers, and would have to be examined in advance and carefully monitored by the Commission.**”

It is clear that there is already a sensitivity about the potential vulnerability and misuse of this provision, and a determination to keep it under control. But the result is to reduce the incidence of cases where prices might go down in the new structure, rather than to provide rules for what should happen when they do.

The conclusion is that the more common case, resulting from application of marginal social cost pricing, will be an increase in revenue and the expenditure of greater amounts on improvements to rail, other public transport, and similar environmentally friendly transport projects. But there will also be occasions when prices, and tax revenue, will need to go down, and these will not necessarily be in the same country

or context, so in those cases there will be a funding gap. Both the proper use of extra revenue, and the proper cuts resulting from reduced revenue, will be contentious.

b) ‘Tax neutrality’ and ‘hypothecation for improvements’: consistent or contradictory?

The phrase ‘fiscal neutrality’ is sometimes seen as a necessary condition of further changes in transport prices, on the expectation that an increase in overall tax take will either be economically damaging, or politically unacceptable, or both. This presumption should sound warning bells every time it is heard, as may be seen by considering that it means giving any revenue from one, new or increased, charge back by reduction of another charge. *So, by definition, there is no net revenue.*

By contrast, probably the most important condition in the recent UK enabling legislation, providing discretionary powers for local authorities to implement road pricing, was the agreement between Deputy Prime Minister John Prescott, and Chancellor of the Exchequer Gordon Brown, that revenue from road pricing would be kept by any local authority choosing to implement it, and used for such purposes as public transport improvements etc. The argument was that only by this concession would local authorities actually have any incentive to implement what would certainly be a politically controversial policy.

It will be seen that the basic aim here is identical to that of the White Paper. The new charges (themselves being justified by considerations of economic efficiency, not revenue raising) produce revenue, which is allocated to pay for other improvements. This is seen both as a way of increasing the political support for introducing the charges, and also as a way of magnifying their effectiveness.

But while it is possible to argue either for fiscal neutrality, or for use of revenues for public transport improvements, this is a choice. One or the other, not both. *It is not possible to spend the same money twice.* In the debate, some stakeholders - being hostile to the principle of road pricing - make fiscal neutrality a condition of their support, but if this is accepted, the result would be no net extra revenue, and therefore no hypothecation of it, and therefore no complementary improvements. The ‘stick’ without the ‘carrot’, would be politically unpopular, and it is difficult to see how the new price strategy could win wider political support.

The author’s own view is that this would change the new charging principles from a controversial, but justified, policy that can have *some* chance of winning public support, to a controversial, less well-justified, policy which would have *no* chance of being implemented, because there would be nobody with an incentive to do so.

From this point of view, the ‘fiscal neutrality’ view can be reconciled with the ‘spend on improved alternatives’ strategy only if expenditure on *non-transport* parts of the economy were to be reduced (health? education? defence? agricultural support?).

It is manifestly obvious that the Commission has no intention whatsoever to link implementation of its transport pricing strategy to such other reductions in social expenditure - and, it might be added, quite correctly so.

Therefore it follows that there will be an intensifying argument, as yet only defined in vague outline, about whether the proposed new price structure is indeed only a change in relativities, or is that *plus* a net source of extra revenue to spend on improvements. The most likely outcome would seem to be a form of compromise allowing certain reductions in other taxes (especially those which are very distant from marginal costs), but not going as far as fiscal neutrality: *there will have to be some net extra revenue to fund the necessary improvements and environmental mitigation.*

c) Order of Implementation

There would surely be no disagreement with the proposition that:

an instantaneous implementation setting all transport prices equal to social marginal costs, on the same day, is quite outside the administrative, scientific, legal and economic capacity of Member States and the European Union as a whole.

This rather obvious statement has difficult implications, which go to the heart of the ‘two agendas’ of European transport strategy: in other words, what is the relation between the ‘old’ agenda of regulated competition, and the ‘new’ agenda of reducing external costs, environmental damage and congestion.

If not everything can be done at once, it is necessary to develop a staged implementation strategy. This means that some changes will be implemented, in one part of the transport sector, while not in other parts. Enormous sensitivity and care will be necessary to ensure that during the transitional period, partial implementation does not make things worse rather than better.

This is not a theoretical point, but a very practical one. The twin agendas still exist, and their relative speed of implementation in the next phase is the *main* underlying argument between those who support the White Paper from an environmental, or commercial, point of view.

This may be seen in the more detailed attention given to phasing in the earlier Transport Pricing White Paper (para 4, Executive Summary). This envisaged a first phase in which rail and airports would join the broadly commercial system of pricing used by road haulage, in which external costs would only be charged within a ‘cap’ of average infrastructure costs. The second phase would allow discrimination by vehicle and geographical characteristics, and for ports, where charges should not exceed social marginal costs (but could be less). Only in a more distant third phase, after careful review and assessment, would there be a further move towards full charging for external costs.

Thus the sequence gave priority first to extension of (mainly) commercial principles throughout the transport sector, and only subsequently to inclusion of external costs. On the face of it, this inevitably would have produced an interim period - during which railways in particular would be under pressure to act more commercially, but road transport would not yet be charged its full external costs. It is quite possible that the market conditions of competition between road and rail would for that period be

less favourable to rail, not more⁶. The problem of unbalanced growth would build up, and entry into the second or third phase would be presented with a bigger problem to solve, not a smaller one.

This dilemma is reflected in current differences of opinion between two views about which is the bigger priority: (a) urban and motorway road pricing to include the effects of congestion and pollution, or (b) further progress on commercial markets and competition among transport companies.

In my experience, the *principle* is now commonly accepted in discussions at European level that the former is more crucial. It will be interesting to see whether this is reflected in discussions at the IMPRINT seminar. But the *practice* might be that the latter seems easier, and has a deeper administrative base within the Commission due to its greater age, and therefore might make swifter progress. It is noticeable that the proposal for diesel tax harmonisation has a date attached to it.

⁶ A variant of this is seen in current problems experienced by Railtrack, the privatised track company in the UK. Pressure to ensure that it fully invests in raising standards of safety, to a level very much higher than exists for road, increases its costs relative to road and therefore tends to encourage road use in preference to rail use (even though higher accident rates on road mean that this could paradoxically result in an overall *reduction* in safety). Internalising safety costs on rail before doing so on road could increase accident costs rather than reducing them. However this is not the main reason for Railtrack facing bankruptcy.

5. Conclusions

Key areas of controversy - some overt and some latent - were identified as

- should fuel taxes be harmonised upwards, at a level, or downwards?
- will there be an increased tax-take overall, or a neutral effect on tax?
- what is the implication of this for funding of complementary improvements in environmentally-friendly transport means?
- what principle should govern sequence of implementation?

It is the author's view that these issues will continue to be controversial, with little possibility that a sufficiently powerful presentation or research effort can resolve them sufficiently to create an overwhelming consensus. This is because they derive only in minor part from disagreements on evidence - though often discussed in that way - and in major part from genuine, continuing and inevitable interests. Most important of these is the observation that individuals and companies who, currently, are 'subsidised' by the rest of the community by not having to pay the full costs of their activities, are likely to be worse off if they are charged.

That is not a reason to abandon the policy objective. Even if an overwhelming consensus is unlikely, a sufficient consensus is possible. This is because the people who gain, in this situation, will be more numerous, and make larger gains, than the people who lose, so there is always *some* method that can be designed to distribute the overall gains in a way that can buy political support. But to do this means that the basic pricing nettle has to be grasped, or there will not be the gains to distribute. The greatest chance of success will depend on an *average* rise in transport prices, leaving a net increased revenue which can be used for *selective* price reductions and, mainly, the provision of very substantial and visible other benefits in terms of reduced congestion, cleaner air, more favourable living and working conditions, and better health. The movement of goods and people will continue, of course, to be a major element of modern life, but with patterns which encourage less damaging modes, locations, and differential growth rates.

The basic theory says that economies choosing this course will be stronger, and more efficient, than those declining to do so - ie they will benefit from a competitive advantage, not disadvantage, compared with those who fail to charge efficiently for the waste of resources involved in transport which covers less than its costs. The big difficulty is that towns, and countries, do not yet believe this in relation to their neighbours.

Annex 1
SACTRA's Report on Transport and the Economy:
Relevant Conclusions for Pricing

The Committee's conclusions were as follows, slightly edited for convenience.

1) Do transport improvements lead to increased, or more efficient, economic activity?

Theoretical considerations suggest that the main mechanism by which changes in transport could have an effect on the economy is by a change in the costs of movement. They therefore defined a transport improvement as any intervention - whether by infrastructure investment, more efficient transport management, or otherwise - which successfully produces sustained reductions in transport costs, or equivalent improvement in service delivered.

Theory suggests that there are a number of important mechanisms by which such transport improvements could, in principle, improve economic performance. These include:

- reorganisation or rationalisation of production, distribution and land use;
- effects on labour market catchment areas and hence on labour costs;
- increases in output resulting from lower costs of production;
- stimulation of inward investment;
- 'unlocking' inaccessible sites for development;
- triggering growth which in turn stimulates further growth.

Thus measures which reduce transport costs could encourage economic performance in various ways. Businesses can pass on the benefit of lower production costs to consumers in the form of lower prices, or they can implement further efficiency improvements by reorganising production and distribution. The economy can also benefit if lower transport costs help stimulate easier transfer between jobs, or greater competition among firms.

These theories, which deal with the linkages between transport improvements and economic activity, are internally consistent, and provide insight into a complex pattern of effects leading in different directions, not all of which are intuitively obvious - notably, for example, the 'two-way road' argument: this reminds us that improved accessibility between two countries (and, similarly, between cities, areas or regions) may sometimes benefit one of them to the disbenefit of the other.

Direct statistical and case-study *evidence* on the size and nature of the effects of transport cost changes is limited. Some authors have claimed that national programmes of public investment, including road construction, lead to high rates of social return measured in terms of economic growth and productivity improvement. Other authors suggest that such effects do occur but on a smaller scale than has been claimed, and that, in general, any contribution to the sustainable rate of economic growth of a mature economy, with well-developed transport systems, is likely to be modest. SACTRA support the latter assessment. They also reviewed available evidence from specific local studies seeking to detect economic impacts from

completed transport investment projects in the recent past. The state of the art of this important field is poorly developed and the results do not offer convincing general evidence of the size, nature or direction of local economic impacts.

Thus there is a strong theoretical expectation that all or part of a successfully achieved transport cost reduction may subsequently be converted into a range of different wider economic impacts. This, in principle, provides for the possibility of improved economic performance. Empirical evidence of the scale and significance of such linkages is, however, weak and disputed. SACTRA concluded that the theoretical effects listed *can* exist in reality, but that none of them is guaranteed. Generalisations about the effects of transport on the economy are subject to strong dependence on specific local circumstances and conditions.

2 Can economic growth be 'decoupled' from traffic growth?

Many commentators have found a strong correlation between economic growth and road traffic growth, though there is not a consensus on the causes of this correlation. Recent discussion has observed that they have not been growing at the same pace, but traffic has been growing faster than the economy as a whole. The result is that the 'transport intensity' of the economy has been increasing, ie each unit of output is associated with a greater amount of movement of people or goods. This raises the question of whether it is possible and desirable to separate the two trends, in order to obtain the benefits of economic growth while reducing the costs imposed by traffic.

This question was separated into two parts. First, is the volume of traffic subject to influence by available policy instruments? Secondly, if it is, would doing so have a favourable or unfavourable economic effect?

Consideration of the evidence led them to conclude that income growth does have a strong effect on traffic growth, but that the amount of traffic is also influenced by the price, speed and quality of transport. An extensive literature of empirical studies suggests that this sensitivity is sufficient to result in a significant degree of variation in how much traffic will arise from any given level of national income. So policies intended to change the volume of traffic that will arise from any particular level of economic activity are, in principle, feasible.

Will doing so have a positive or negative effect on economic performance? Answering this question raises an apparent paradox: reducing transport costs should assist economic performance, so how could it be that raising transport prices could be good for the economy?

In part, this paradox is resolved by noting that 'improvements', as defined above, and 'traffic reductions' are not necessarily mutually exclusive. Most authorities will combine a package of measures which interact with each other and are intended to produce a better overall outcome than each measure taken separately.

However, the more fundamental resolution requires recognition that 'transport costs' are not identical with 'transport prices' - the real resource costs that transport imposes on the economy include the hidden or 'external' costs of congestion, accidents, pollution and other environmental impacts. When these are included, the overall

marginal cost of a trip to society may be quite different from the direct money cost of car use, or public transport fares, paid by each individual traveller. The circumstances where reducing traffic levels could contribute usefully to economic performance are, in general, those where transport prices are currently below marginal social costs, primarily because of the existence of external costs of congestion and environmental damage.

In these circumstances, traffic reduction policies which result in a better alignment of prices and costs not only reduce the incidence of such external costs, but also, in doing so, can increase economic welfare. Conversely, where transport prices already fully include, or exceed, all internal and external marginal costs, measures to reduce traffic are likely to entail some sacrifice of economic welfare. Accepting that the full money valuation of all external environmental costs is not in prospect, it is still unavoidably necessary to make a case-by-case judgement about whether these costs are likely to be large enough to make the marginal social cost greater than the price, since this is critical to the whole analytical framework.

Questions of the geographical incidence of such benefits then have to be addressed. In the case where traffic reduction is achieved by increasing prices, the geographical incidence and nature of any additional benefits will depend, in large part, on the use of net revenues collected, since this would be the mechanism for determining whether the benefits 'stay in the local economy' or are passed elsewhere. It follows that the necessary conditions for increased transport prices to have a positive economic impact in a particular target area are likely to include well-judged recycling of the revenue in the area for purposes which are themselves good value for money.

In practice, it is often the case that traffic reducing measures are implemented using non-price methods, such as reallocation of road capacity, some forms of parking control, pedestrian zones, selective bans on certain categories of vehicle or certain times, etc, since these can have significant operational advantages, as well as having a history of tried and tested experience. The economic analysis of these methods is more complex, as in such cases direct net revenues will not be generated, so that this mechanism for influencing the incidence of benefits is not available. The economic effect will therefore tend to be determined by the precision with which the policies can be targeted on appropriate classes of traffic, in specific parts of the network: for example, scarce road capacity may be more effectively utilised if space is reserved for specific categories of vehicles (eg buses, lorries, high occupancy cars, emergency services) and some cities make special arrangements for delivery lorry access at convenient times to areas where vehicles are otherwise excluded. Empirical evidence exists of many cases where some non-price measures, especially pedestrianisation of town centres, have had successful local economic effects, but provides no information on whether there are any net effects at a national level.

In summary SACTRA identified a strong theoretical basis for identifying conditions where measures may increase some direct prices, reduce traffic, reduce resource costs, and also have a favourable local or national economic impact. There is extensive empirical evidence on two aspects (the sensitivity of traffic levels to some cost changes, and the local economic effects of pedestrianisation) but not on effects on economic performance at a national level. The degree of traffic reduction to aim for, and the selection of specific measures, will vary according to the circumstances, and

should therefore be the subject of cost benefit appraisal, as in the case of infrastructure investment.

3) Are economic impacts captured in current procedures?

The underlying assumption in the appraisal of most transport improvements is that direct benefits and costs (such as reductions in travel time) may be converted into wider economic effects (such as reduced wage costs or higher property values) by the operation of the market. Crucially, these final effects are assumed to have the same total value as the initial impacts, and not to be additional to them: this implies that in general, the value of direct transport benefits must decline if indirect economic benefits are to grow. The identity of initial and final benefits is a theoretical proposition arising logically from the assumption of 'perfect competition' in the economy as a whole - that is, an economy where all prices are correctly aligned to the costs of production by (among other conditions) active competition among enough firms to ensure that none can dominate the market.

If these conditions hold, the value of the estimated costs and benefits to transport users (notably time savings, operating costs and accident reduction), and to non-users (notably environmental impacts - provided that they have all been identified and a money value attributed to them) would give a full and unbiased estimate of the value of the overall economic impact. This is equivalent to the statement that no 'additional' economic value exists. However, the incidence may change, as the initial transport benefits may accrue to different people from those who receive the final economic benefits.

In such cases, a high-quality assessment of the transport and environmental costs and benefits will be the best practical approach to assessing the value of the overall economic effects. If the estimated transport costs and benefits are complete, and conditions in the economy are of all-round perfect competition, it will not be possible to demonstrate credible proof that there are additional benefits from wider economic effects.

The major part of the work was the identification and analysis of three important general cases where the calculation of transport costs and benefits will **not** give the full economic impact. These relate to the completeness of the transport appraisal itself, the existence of imperfections in the economy, and the spatial incidence of impacts.

a) Completeness of the transport appraisal

First, the logical identity of the value of transport and economic impacts will not apply if the transport assessment is itself significantly incomplete, either in its calculation of the transport effects or in its conversion of those effects into money values.

The calculation of the transport effects needs to take account of all sources of transport costs, and all the important direct and indirect behavioural responses of individuals and firms, in the short and long run, to changes in those costs. This is necessary in order to make an accurate assessment of the resulting pattern and

conditions of travel and environmental effects. These conditions are not usually fulfilled: in practice, simplified assumptions are used which leave out some important responses.

Even if the transport effects are fully estimated, the identity of their value with the final economic value can then only apply if all those transport impacts are correctly expressed in terms of their money values. This condition is also not usually met, and is not in prospect. Money values are attributed only to some of the known transport impacts. In particular, conventional transport appraisal will usually describe the physical impacts of environmental effects, but not their economic costs. Similarly, the effects of transport changes on land-use - when they are systematically estimated at all, which is rare - are not expressed as user benefits in money terms.

Environmental costs represent real economic resources even when their money values are not calculated: from this point of view, the description of physical impacts in a conventional environmental appraisal carries the implication of economic impacts. Therefore the conventionally calculated transport net present value alone, because it does not include environmental costs, can only provide an unbiased measure of the value of the final economic impact in the case where there are no environmental impacts, either positive or negative.

b) Imperfections in the economy

Secondly, real economies may not be perfectly competitive. There are two main classes of imperfection, both of which are marked by a difference between the prices charged, and the real economic value of the resources used. These imperfections are:

- (i) price levels for goods and services which differ from efficient resource costs if there are distortions caused by imperfectly competitive product, labour or other markets, subsidies and taxes; and
- (ii) external costs, such as congestion and environmental damage, both in the transport sector and from economic activities in general, which have not been included in the price charged.

If these imperfections exist, analysis demonstrates that the value of initial 'transport' impacts will not be the same as the value of final 'economic' impacts. In that case, even the most complete conventional appraisal method that could, theoretically, be devised would still leave out some wider economic impacts. These are the circumstances where claims for additional economic impacts, with a value which is not captured in the calculation of direct transport benefits and costs, may be valid. Thus even if the uncharged cost of congestion, say, is included in the conventional assessment of transport benefits, it will still be necessary to make further allowance for the effects such imperfections have on the operation of the economy as a whole.

A key conclusion is that these additional economic impacts, over and above the value of direct transport impacts, may be either positive or negative, depending on whether prices are higher or lower than marginal social costs, which in turn depends on the combined effect of divergences between price and marginal cost of output, taxes and subsidies, and uncharged external costs. Therefore there will be some conditions

where including wider economic impacts would lead to an increase in the value for money of a transport improvement, compared with a conventional appraisal, and other conditions where including these wider impacts will lead to a reduction in the value for money.

For example, if local prices are in general too high due to monopoly power, then a transport improvement, if it successfully opened the area to external competition, could lead to additional benefits for the economy. Conversely, if transport prices are currently too low due to uncharged congestion or environmental effects, then a transport improvement could lead to additional costs for the economy.

These two examples illustrate a potential effect of prices which are too high in the transport-using sector, or too low in the transport sector, but these are not the only conditions which could apply. SACTRA identified at least eight different hypothetical conditions, which are defined by different combinations of price imperfections in the transport-using and transport-providing sectors. None of these cases could be ruled out on grounds of logic or inherent implausibility.

Evidence does exist that it is quite common for prices to be higher than marginal private costs of production in many sectors of the economy, but lower in a few subsidised sectors. There is also much evidence about the existence of external costs of transport, and some other industries, and in some cases of their values. This establishes that such departures from perfectly competitive conditions are real. But some of these effects lead to prices which are lower than marginal social costs, and others lead to prices which are higher. At present there is no basis for judging whether the positive cases (ie where inclusion of wider economic effects would increase the net benefits) are more or less frequent than the negative cases (ie where inclusion would reduce the net benefits).

For this reason, assessment of the economic impacts would have to be calculated for each case, based on the specific conditions in sectors (or economic activities) in areas affected. The calculation would depend on assessment of the incidence and magnitude of imperfect competition and uncharged external costs, in both transport-using and transport-providing sectors.

This assessment will determine whether the usual perfect competition assumptions are, in each case, valid, or whether allowance for wider economic impacts needs to be made, and - if so - whether these impacts will increase, or reduce, the value for money of a transport improvement.

c) Spatial distribution effects

Thirdly, the direct transport effects are often assessed, for practical reasons, only for a defined area in the neighbourhood of the transport improvement. Studies in economic geography confirm that there is no guarantee that transport improvements will benefit the local or regional economy at only one end of the route - roads operate in two directions, and in some circumstances the benefits will accrue to other, competing, regions. Thus in the important case discussed above where monopoly prices in a sector may be reduced by competition from outside, some benefits, such as increased employment, may accrue to the distant competitors rather than the local producers.

Assessment of whether economic impacts will actually benefit the intended target area will need to consider impacts outside the immediate neighbourhood. This is the case whether or not imperfect competition applies. Therefore greater attention should be paid to the question of where the impacts will occur, and on whom they will fall.

This analysis highlights the importance of considering the 'winners and the losers' separately, in addition to the usual procedure of adding them all together into an overall impact. This is particularly important if it is indeed the case that the initial transport impacts will be converted into different effects on the economy, since the initial and final beneficiaries of the intervention may be quite different: the initial winners may end up losers. It follows that where transport interventions are expected, or intended, to have economic impacts in any particular area, there should also be consideration of the impacts on other competing areas as an integral part of the appraisal.

Annex 2
**The Work of the EC High Level Group on Transport Infrastructure Charging:
An Overview**

Transport pricing and the two European transport agendas

The transport sector, and especially private travel by road, shows many of the features of the supermarket fantasy. Charges are made - sometimes very high - but with little direct correspondence to the actual cost of particular journeys. Queues are endemic. Whole ways of life are built around the price structure. Taxation is high, and confusing. Provision of infrastructure to cope with the queues seems a never-ending failure.

Hence preoccupation with the need for efficient pricing has been a high priority for European policy since the early days of the European Economic Community. Broadly speaking, one can see a thread providing continuity ever since, which is - with caveats, caution, acceptance of political constraints - an underlying preference for a transport sector which would work according to market principles, prices reflecting costs.

However, within this general approach, one has to distinguish two really quite different agendas.

Marginal cost pricing as the sign of fair competition in the transport sector

The first, and older, agenda essentially relates to the conditions of trade competition within and between member states, treating transport as an industrial sector as far as possible to be treated in the same way as any other. The emphasis is therefore on companies rather than individuals and on commercial transport services (whether for goods or passengers), with little consideration given to private movement undertaken by people without involvement of transport companies. The objective was to try to ensure that member states did not try to compete unfairly against each other, especially by overt or hidden subsidies to public or private transport companies, but also avoiding distorting taxes above all where they might discriminate between operators from different countries.

The ideal model would then be of private companies, or publicly-owned companies operating on commercial principles, where both subsidies and taxes were kept to the minimum practical level. Provided that monopoly power was also kept to a minimum, the general price structure and specific prices for individual segments would all tend towards text-book market outcomes - prices would be equal to the marginal costs to the companies providing the services, and the industry as a whole would expand or contract in order to bring marginal costs close enough to average costs to allow an acceptable rate of profit to be made.

Thus prices equal to marginal costs would be a sign that the strategy was working, but it would be a natural outcome of the operation of the market itself, the only

intervention required being the control needed to keep subsidy, tax, international discrimination, and monopoly all at a sufficiently low level.

In general, European Commission interventions were underpinned by this sort of argument, while accepting that there might be all sorts of specific exceptions and complications in any particular circumstances.

It is fair to say that progress was not extremely rapid. But in any case, as the policy evolved, a shift of emphasis started to emerge. Initially, the main focus might be on, for example, 'long-distance road haulage' or 'rail operations' or 'long distance buses', treated more or less as self-contained sectors. The problem more and more became evident that competition *between* road and rail was constrained by such a great difference in the treatment of cost recovery, especially for infrastructure investment, that anything which one did *within* each sector might have perverse effects. This was exaggerated, not reduced, as railways moved increasingly to adopt commercial principles themselves. The problem was how to ensure fair competition between road and rail when a company - which might not care at all in principle whether its goods were shipped by road or rail - would be faced with completely different principles of how infrastructure costs would be reflected in the price charged.

In the limit, one might have a privately owned rail infrastructure providing public transport services operating on commercial principles, competing with a publicly owned road infrastructure providing private transport services on non-commercial principles. This was bizarre. In different countries there were different hybrids, but in none could one be confident that the prices charged in the competition between road and rail were such as to ensure the most efficient balance of the market between them.

So a key problem was how to construct prices, for both road and rail, which would be sufficiently comparable to each other to achieve even an approach towards fair competition. This meant an item-by-item listing of comparable costs - investment, maintenance, repairs, etc - intended to check off one by one to ensure that, as far as possible, what was included on one mode would be included in a similar way for the other - and both in accordance with marginal costs, ie each user would be charged an appropriate contribution based on what his or her own market choices had imposed - and therefore, influencing those choices next time round.

Marginal cost pricing as the instrument to reduce congestion and environmental damage

A shift in direction and emphasis concerning how 'the problem of transport prices' was perceived developed from the increasing concern with environmental impacts of traffic in the 1980s (though in some ways this was a re-run of concerns about energy conservation following the fuel crises of the 1970s, and the analytical framework owed much to the analysis of congestion in the 1950s and 1960s).

The problem was that it became apparent that - even if the commercial principles of fair competitive pricing were completely secured - that would not be enough, and in some circumstances it might not even be desirable. The reason for this is that economic efficiency cannot *only* be measured by the money costs which pass through the accounts of commercial companies. Other costs, not being subject to

conventional financial audit, nevertheless are real costs to the economy as a whole, involving use (or waste) of real resources, and having substantial impacts on economic welfare and indeed social well-being.

The work of the High Level Group, in this respect, was partly to provide a convenient exercise to gather together what is known about these other costs (a useful exercise, though by no means the only one of its kind, since such reviews have been fairly widespread in recent years, each slightly updating those which have come before). More important, however, the evidence was revisited in the context of an objective to synthesise the commercial and environmental agendas with a direct pathway to policy development of the European Union.

The Group's priorities may be summarised in four propositions.

First, consider a publicly owned road, which is used freely by cars, lorries and other vehicles. Each vehicle causes some amount of damage, depending on size, weight, axle-load, torque and other technical characteristics. There is a relevant authority (national or local) whose responsibility it is to find the funds for maintenance, typically from some form or other of taxation. But whatever the authority, it is certain that some proportion of the road's users will not be owned or used by taxpayers accessible to the authority - they will come from some distant area, or a foreign country.

Therefore principle 1: *all vehicles ought to pay for the cost of maintaining the roads they use, in proportion to the damage they cause, but independently of which country they come from.* This principle itself necessarily involves a move away from traditional taxation systems, towards some form of more direct charging.

Second, in conditions of congestion, each vehicle suffers greater costs than when traffic flow is free. This is a fundamental scientific relationship. Whether to endure that extra cost is, of course, a choice to be made by each road user on the basis of their own costs and potential benefits. However, it also follows that in making such a decision on the basis of one's own costs, one also imposes extra costs on all other road users, and the nature of the technical relationships is that the worse the congestion, the greater the discrepancy between the extra costs endured by the decision-maker, and the extra costs imposed on everybody else. A small addition to traffic flow, in congested conditions, imposes a disproportionately large extra cost on other road users.

Therefore principle 2: *each transport user, travelling in conditions of congestion, should be faced with the costs of delays which his own choices impose on others, and therefore on the economy as a whole.*

Objections to this quickly became apparent. One view is that such costs are not 'external' since road users, as a group, are meeting all of them. This may be theoretically formulated using the idea that they form a 'club', implicitly agreeing to accept the effects of each other's decisions. The High Level Group itself did not accept this approach (though some of its members thought that the distinction was in any case more theological than practical, since road pricing can be justified as easily in the case of such a club as in the traditional formulation).

The more substantial objection concerned the political arithmetic: to apply the approach would result in a new revenue surplus, extracted from road users as a charge for the costs they impose, and the twin questions that had to be faced were - what would happen to this money? And what would happen to the current taxation and other charges made under the present regime? This is discussed further below.

Third, while the idea of congestion as an external cost has been well explored for decades, it was becoming matched (sometimes exceeded) in importance by mounting scientific evidence of a wide and diverse set of environmental impacts: noise; water run-off; emissions and particles with damaging effects on health; effects on crops, forests and wild-life; effects on global environmental conditions. These effects range from the very local - distances of a few metres away from the source - to effects on distant countries and the world as a whole. They all cause costs to someone - firms may have to pay to clean up the water they use; taxes have to be raised for hospitals, and so on.

So principle 3: the transport user should be charged for the cost of environmental damage, imposed on both near and distant individuals or agencies, in proportion to the cost of that damage.

In this case the 'club of willing payers' objection was not used: it would be possible to suggest that the world as a whole somehow 'agrees' to accept these costs, but implausible and unhelpful. The problem was different. With such a wide range of quite different effects, grouped for convenience under the single heading of 'environment' but actually subject to quite different laws, relationships and knowledge, how could one actually calculate what the costs were? This is also discussed further below.

Finally, there was a fourth area of concern: accidents. These also cause damage to life, health and property. That these are real is not disputed. There is a separate debate about the underlying ethical issues in putting a 'value on human life', and a more complex one about the practical and potentially perverse effects of putting a higher value on the loss of life in rail systems than road systems, which is implied when higher standards of safety are required in one mode than the other. The High Level Group did not feel itself the appropriate body to comment sharply on these questions. Rather, it considered a somewhat different question: the role of insurance.

So principle 4: charging transport users for the costs of the accidents they cause should, as far as possible, be implemented through extension and refinement of the existing insurance system.

This would involve progressively incorporating distance-based and exposure-based elements in insurance premiums. The great advantage - especially by comparison with some of the other pricing innovations - is the existence of a readily available mechanisms and institutions for implementation. The disadvantage - discussed by the Group, but without final resolution - derives from the fundamental function of insurance itself, which is to cushion an individual or institution from the direct costs of its actions by spreading the risk among many insurers. This is, in some respects, an application of pricing principles but in others the precise opposite.

Thus while insurance systems which more closely related to costs caused would clearly be superior to those which do not, there is a limit to how far this can go before undermining the principle of insurance itself. It is not yet clear where that point is.

The Missions of the High Level Group, and the Success in Meeting Them

Although it was not expressed in this way by the members, in retrospect one can interpret the work of the group as being directed towards two objectives.

First, to try to devise a set of principles which would meet the needs of *both* agendas. In the event, it is not surprising that some members found themselves specialising more in the first agenda, and others in the second, for reasons of personal or sectoral or national interest and experience, which would lead to a judgement of the relative priority of the two. But it was clear that an approach which did one and failed to deliver the other would simply not be effective.

The second mission, in effect, was to use the Group as an experimental test-bed to see whether the principle derived were capable of commanding a consensus across the modes and interest groups. For this reason, membership of the Group consisted (and had to consist) not only of academics and specialists, but also individuals who were close to different, and competing, modes and sectors.

It is too early to judge the extent of real success in these endeavours, since this is entirely dependent on whether the three reports get taken up in policy decisions. But it is possible to draw some preliminary conclusions.

First, the reports were unanimously agreed, which is itself significant though not decisive.

Secondly, it is fair to say that the search for common principles which would apply equally across the modes made significant advance, but did not entirely resolve all difficulties. One recurrent theme was the different nature of 'the customer' treated by a road infrastructure owner and a rail infrastructure owner. The road customers will largely consist of very many final users - individuals or firms. The rail customers, following separation of track and operations, will be a small number of operating companies, so that the relationship with the final customer (ie the passengers) is more distant. This inevitably means that on rail there will be small numbers of negotiated contracts, while on road - provided user prices are used at all - there will be a market response to a tariff of set prices. This explains the somewhat different caveats which had to be made for the two systems.

The terms of reference of the Group were not ideal for taking this issue further (since they focused explicitly on infrastructure charging, rather than charging for all infrastructure and operations). The result is that the guidance on what should be changed on the road side is clearer, and less subject to complicated objections, than the recommendations on the rail side.

Thirdly, The whole pattern of recommendations supported by the Group does have an implication, well established in classical welfare theory, which is not always entirely consistent with the policy agendas currently adopted by all countries. In particular, the logic leads fairly clearly to an outcome that - in some circumstances - it will be justifiable to make a financial surplus in some markets (ie those where marginal social cost is greater than average private cost) and a financial deficit in other markets (ie those where marginal social cost is less than average private cost). This is, unambiguously, a first best solution.

But it is politically a difficult one. The Group made recommendations about what to do in both circumstances. Where the excess surplus is justified, it is important that it should not be treated either as general tax revenue or as an unearned extra profit for the company concerned. Rather, it should be used as a revenue stream directly applied to the reasons why it arose in the first place, ie typically charging from external costs such as delay or environmental damage. Therefore it should be used to reduce the incidence of these costs, or compensating those who suffer from them.

In the case of revenue shortfall, the ideal solution would be to cover this with a subsidy (in this case economically justified) raised in such a way as not to distort other economic decisions. But it was recognised that such a counsel simply might not be followed, and therefore a (good) second best solution is required. This is also a text-book case. Where prices are necessary which are higher than marginal social cost in order to meet the financial costs of the enterprise (eg where Government will not, or cannot, pay the subsidy required), they should be raised more on the low elasticity markets than the high elasticity markets, or by systems of lump sum and variable charges. All users should pay (at least) marginal costs, with charges higher than this met in the way which causes least distortion to the pattern of demand.

This is all operable, and would almost certainly be more efficient than the current situation. But it is fair to accept that it does fall short of a perfect system, and it leaves an inconsistency, for the sake of political reality, which could be a continuing controversy.

Fourth, especially in relation to environmental costs, the sharp question arising is - what should be done when there is uncertainty or inadequate information about the exact level of these costs? Because manifestly there is some uncertainty, and to some extent there always will be. Scientific research may meet its own criteria for great success in narrowing down the range of an particular environmental cost, for example, from an initial estimate of 5-10 euros per kilometre to a more precise estimate of 6-7.5 euros. But a price has to be an exact quantity, not a range.

Here the Group's approach essentially was robustly to reject the proposition that 'if costs are uncertain, we will assume that they are zero'. The judgement was that we shall never have absolute certainty, but the evidence reviewed in the reports established that *enough* was known about the costs to enable policy-makers and their advisors to use their judgement about a precise charge falling within the range of the estimated costs. This is - inevitably - to some degree arbitrary. The presumption is that it is better to make a best estimate at an appropriate charge than to charge nothing, with all the costs that this would involve. As SACTRA (1999) argued

“We stress that environmental costs represent real economic resources even when their money values are not calculated”.

The fifth interesting implication of the Groups rather pragmatic approach to how to make progress is that it raises a very important issue about the order in which the wide range of different recommendations are implemented. This is because the recommendations, taken as a whole, make sense, but each one individually may not make sense if it is implemented on its own. Therefore if they are implemented in the wrong order, there is a danger that they will make things worse before they get better, and this is not easily tolerable in an area which is complex and which will require wide consensus. For example, to make faster progress on the commercial efficiency of rail than on the charging of external costs on road could mean, for a period, that rail costs increase while road costs are falling, and that would not have desirable results.

Conclusion

The work of the High Level Group in Infrastructure charging symbolised the intersection of the interests of a number of different stakeholders: the Transport Commissioner, Neil Kinnock; officials of the European Commission especially in DGVII responsible for transport; some national governments interested to see their national preoccupations reflected at European level; sections of the European transport industries concerned to advance their own interests, as they see them; planners and professionals in the transport field working on congestion and environmental damage; researchers engaged in discovering fundamental scientific relationships and motivated to use these for social improvement.

It is clear that these diverse groups do not totally agree, among themselves or with each other, on everything. That would be as unlikely in transport as in any other important area of public policy and private interest. But recognition of inefficiency and damage arising from the way transport is currently priced emerged as a powerful common standpoint among all these groups. Further, the *direction* of change that should be implemented, ie closer correspondence between prices and the direct and indirect costs, is close to unanimous.

Annex 3
Sprawl and Land Use
Summary of themes in ECMT expert group discussion

Introduction

In recent years there has been increasing interest in urban policies which encourage high quality but relatively compact development, a re-emphasis on city centre commercial success, the use of traffic-calming, traffic reductions, public transport improvements, better facilities for pedestrians and cyclists, and the creation of environmentally attractive cities. The motives for this movement are a combination of economic, transport and environmental factors, and it has become apparent that the possibilities of overall success of such a strategy may be closely related to what happens to the general structure of urban areas.

Urban sprawl is not new, though in recent years it has been occurring at a speed which is much greater than in previous periods and therefore presenting new problems of scale and pace of adjustment. It is marked by a reduction in densities, especially in central and inner urban areas, a more diffuse patterns of origins and destinations, and an expansion of built up areas into the countryside (especially in low density housing developments and out-of-town shopping centres)⁷.

Transport Ministers and others in many countries have been concerned about the possible effects of further urban sprawl, and a workshop of specialists was convened in Paris to consider the available evidence and discuss the problems. A number of expert papers were provided to the workshop, and these are published separately.

The conclusions of the workshop are summarised under five main headings, namely

- a) Is urban sprawl good or bad?
- b) What are its driving forces, and how well are they understood?
- c) Is it an inevitable process, or can it be influenced by policy intervention?
- d) What is the role of formal methods of appraisal, especially those applied to transport infrastructure investments?
- e) What issues arise for political institutions and processes?

1. Is urban sprawl good or bad?

The workshop was concerned that it would be wrong to take an entirely black and white view of this question. Clearly, it would be possible to imagine a city which was much too dense for comfort, or which was much too spread-out for efficiency. Somewhere between these limits there is a proper balance (though accepting that that balance will itself change over time). Therefore the question should be rephrased:

⁷ Another process associated with the expansion of cities is caused by population growth and, especially, large-scale shifts of the population from rural to urban areas typical of many developing countries. This process has rather different features, not usually seen in advanced economies where 'from town to suburb' is more extensive than 'from country to town'. But it still may be important in certain regions.

starting from the current position, as inherited from history, what are the implications of a further continuation of current trends towards sprawl?

There was a considerable concern about some potential real problems that this can cause, especially:

- Sprawl can increase the geographical patterns of social division and inequity;
- If journey distances get longer, energy consumption and environmental damage is likely to increase;
- A more diffuse pattern of activities and land-use can reduce the economic efficiency of the city as a whole, and to increase the cost of provision of public services (transport, drainage, waste disposal, health, education etc);
- The effects of sprawl have a tendency to reduce the intended benefits from previous transport infrastructure investments, by generating greater growth of traffic on the roads, and a location pattern which is difficult for public transport to serve;
- It has a tendency to undermine the advantages sought by individuals, of a more pleasant living environment, which cannot be delivered if too many other individuals are seeking the same thing.

Not all these effects will be valid in all circumstances, but they provide a checklist of potentially serious problems that should be considered in each case. None of them may be dismissed as unimportant or irrelevant.

In summary, the workshop considered it right to alert policy-makers to these potential problems, and advise great care before adopting policies which may accelerate the tendency to sprawl.

2. What are the driving forces of urban sprawl, and how well are they understood?

The workshop considered a series of technical papers, using theoretical, analytical, empirical and modelling methods to investigate and evaluate sprawl.

It is clear that this has been a fruitful area of research, and one which does contribute to a better understanding of the process, though it is certain that there remain big unsolved problems.

The work has suggested that there are four main groups of factors which may be considered as driving forces. These are:

1. The basic laws of geometry. It is in the nature of circles that there should be more space available, the greater the distance from a centre.
2. Consumer - and producer - preferences, expressed through markets, which lead individuals and companies to trade-off between the extra space available (due to (1) above) and the extra distance.
3. Transport conditions, within which we should include the provision of infrastructure, the speed of travel, the price of travel, the connectivity (in time and space) of the network, availability and price of parking, and the difference in overall attractiveness of individual and collective transport. Developments in

information technology applied to transport may also substantially change the real or perceived cost and attractiveness of travel.

4. The regulatory and policy framework, including land-use planning, development control, competition law, and the policies followed by various national or local ministries on location of their services (such as housing, health and education). These affect the location of origins and destinations and the activities which take place there.

We must report that, at present, there is not a complete professional consensus on the relative size and importance of these factors. Some specialists, for theoretical or empirical reasons, give a particularly strong weight to just one or a small number of factors. In particular, there is a strong argument that the *speed of travel* is the most important underlying force, because of the observed tendency for the total amount of time spent travelling to remain rather stable. The time savings from extra speed are then converted into longer journeys. Another point of view is that the most important factor is *consumer preference for space*, which in turn emphasises either the key role of income growth or, alternatively, the key role of transport prices and especially the extent to which they truly reflect the underlying costs.

While respecting the analytical arguments, most members of the workshop did not feel it was helpful to focus on a single factor as the most important, but to recognise that all of these factors have some importance, and therefore to consider the complex interactions among them. The problem then is that there is an imperfect understanding of how these interactions work, and what the dynamic processes are which bring them into balance. Because the understanding of the process is imperfect so, inevitably, must be the level of confidence in what the eventual equilibrium outcome will be, though it is certain that – if such an equilibrium can be achieved at all – it will not be speedy, but take decades or longer.

It is encouraging that a number of analytical and modelling methods, discussed at the Workshop, already exist which seek to measure the strength of these various effects, and make calculations of future trends and the effects of different assumptions. While none of these is so well-supported that its results may be considered as definite and proved, it does indicate that the processes which lead to sprawl are capable of scientific analysis, and understanding is improving.

In summary, the balance of opinion is that sprawl results from a complex interaction of individual and social factors, including speeds, incomes, tastes, travelling conditions and prices - understood to some degree, though imperfectly as yet, but capable of scientific analysis.

3. Is sprawl an inevitable process, or can it be influenced by policy intervention?

The most helpful way of addressing this question is to consider the four groups of driving forces summarised above, since each of them has a different relationship to policy.

1. *Geometry*: the basic laws of geometry are outside policy control, and public bodies who imagine they can rewrite, for example, the value of Pi, are doomed to failure. However, it should be remembered that cities are never simple circles or

squares: their space is complex and discontinuous, so that for any two points the relationship between the straight line distance, and the real journey distance, and the perceived journey distance, is rarely simple. In specific cities there may often be opportunities to use or manipulate these differences, for example to unlock unused inner city land, or make use of natural barriers and boundaries, or to change the perception of space by new connections. Therefore although the underlying geometry is not subject to policy intervention, there may be scope for influencing the effect it has on choices.

2. *Consumer preferences*: the dominant assumption has been that underlying consumer preferences, as expressed in markets, are driven mainly by income growth and therefore (given that increased real income is an almost universal objective of policy) inevitable and outside the scope of policy intervention. Those theories which argue that consumer preferences are the main source of sprawl, also often tend to imply that the continued tendency to sprawl is inevitable.

On the other hand, consumer preferences are only expressed from the options, and their relative prices, which are actually offered. If the options or prices change, the same theories would imply that the choices will also change. This is supported by some examples of apparently autonomous changes in preferences – new markets for high quality, expensive, inner-city housing, for example, and recent observations of renewed interest in city-centre life by young Americans who have grown up entirely in suburban conditions. While neither of these examples can be described as such a powerful trend as to reverse the tendency to sprawl, they do remind us that tastes and preferences evolve and change. It was therefore not the general view of the workshop that income-driven market preferences should be interpreted as a decisive barrier to any policy impact.

3 & 4. *Speeds, prices and characteristics of the transport network, and the regulatory and planning framework*: these factors are, by definition, policy instruments or subject to influence by policy, within the bounds of statutory powers and political realism. There is no argument about whether such factors can be influenced by policy - the only question is what the exact effects of such interventions will be.

In summary, sprawl is a tendency that is not completely under policy control, but it is subject to policy influence, whether by the unintended effects of policy decisions whose main objective was aimed at other outcomes entirely, or by deliberate intervention to change travel and living patterns. It is certainly possible to influence the speed and size of the change, and it may be possible to influence its direction, though that is not yet certain. With confidence, it is possible to judge that there will be a greater effect if all the policy instruments are being used in such a way as to reinforce each other, and less influence if some policies are pulling in one direction, and other policies in the opposite direction.

4. What is the role of formal methods of appraisal, especially those applied to transport infrastructure investments?

The workshop shared a feeling of professional concern on this question. It is accepted that over the last 30 years or so there have been substantial efforts put in to

developing an intellectually coherent, logical procedure of economic evaluation which assesses the costs and benefits of infrastructure investments as an aide to decision-making. But that structure does not handle very comfortably a number of the underlying causes of sprawl, and there is a potentially serious problem that the methods used may not always lead to helpful advice on this question - may, in some cases, even point in the wrong direction.

Particular concerns were expressed on the following aspects.

a) *Time savings* Social cost-benefit analyses are often dominated by the money value of some millions of hours of time savings which, it is calculated, should arise from an infrastructure investment which increases speed. This assumption now needs careful reconsideration. In some cases the intended speed increases are not actually delivered; in other cases they are 'used up' in longer distances travelled. This may be interpreted as increasing the choice of destinations (although some object that the more distant destinations are increasingly becoming identical to the closer ones, due to processes of globalisation of markets). The problem is that if, as a result of the resulting travel patterns, there is a reduction in the availability of local destinations, the end result may be more travel but no increase in choice, or a reduction in choice for the less mobile. In addition, speed reductions are often an objective of policy for other reasons (eg safety or pleasantness of an urban environment). For these reasons, the workshop felt that there was likely to be less emphasis placed on the 'benefits of speed' in future appraisals.

b) *Wider impacts* In recent years there has been increasing attention to impacts which have not, yet, found their way into most social cost-benefit analyses, especially short and long term health effects (due both to emissions and to life-styles), effects, whether intended or unintended, on local and regional economies, and objectives of social inclusion. Some type of formal multi-criteria assessment, or less formalised appraisal frameworks, are becoming of increasing interest and practical use. It is important that their less formal nature should not lead to a reduction of rigour and consistency, which is always a danger.

c) *Dynamic effects* Because it is known that sprawl is an urban process where it must take years, perhaps decades, for the full effects of any change to work their way through, there are serious questions about the conventional CBA presumption that an equilibrium is quickly established and used as the basis for calculations. In addition, the use of discount rates which are more or less closely related to market interest rates makes this problem worse, since discount rates in the range 5%-12%, which are widely used, put great emphasis on effects in the first few years, and make it impossible to take seriously any effect which might take several decades. In extreme cases, the combination of these two effects leads to the nonsensical result that the equilibrium we want to evaluate is beyond the time-scale which the discount rate allows us to consider.

d) *Public and private sector appraisal* There is concern that in some cases the principles of social cost benefit analysis applied to public sector projects, and commercial appraisal applied to private sector projects, may lead to inconsistent or conflicting results. This is especially a danger when road investments aimed largely at private transport are appraised by social methods, while public transport investments

are appraised using commercial criteria, which together is likely to lead to an imbalance between the two.

In summary, the workshop did consider that there is a serious problem about the suitability of some present technical methods, developed to meet the needs and policy presumptions of a previous time, which no longer quite fit the current context. This implies that on some occasions it will be necessary to use political and professional judgement to support courses of action which - apparently - are not supported by the formal appraisal. There will be a need for transparency and careful explanation when this is done.

5. What issues arise for political institutions and processes?

During the workshop discussions there was a sharp appreciation that urban sprawl presents serious questions for political processes and practice, and some suggestions of useful directions.

The central problem arises from the idea that sprawl results from a complex interaction of different pressures - but each of those may be the responsibility of a different Ministry, level of government, or agency.

- Decisions by Ministries of Education, Health and Industry will affect the density and location of important centres of activity.
- Decisions by Ministries of Finance will affect tax rates and therefore relative prices.
- The framework for development control may be handled at national, regional or local level.
- The regulatory and competitive framework differs in different countries, and for many is also subject to international control or influence, for example by European Union, and by agreements such as GATT.
- Bodies such as the World Bank and the European Bank for Reconstruction and Development provide funds for infrastructure developments, using criteria which may or may not be consistent with the policy objectives at national and local level.
- In all countries, informal or unofficial economic activity exists, and in some countries it is at a very large scale (so there may be a strictly-defined Green Belt, for example, within which illegal activities are extensive due to problems of enforcement).
- Competition between cities may lead to each of them avoiding the action that all of them need. This is especially the case if cities fear that restrictions on development, or use of the price mechanism, will lead to a reduction in competitive advantage. On the other hand, it is increasingly argued that this should only be a short term problem, since the intended outcome of such restrictions is to make the city *more* efficient and attractive, not less. There is not yet universal confidence

that this outcome will be achieved, so building up a body of evidence drawn from real world experience may be even more important than development of analytical procedures. (The same uncertainty can apply to competition between countries).

- Within this, the normal decisions of Ministries of Transport will clearly be important, but may not always be decisive, especially if they are pulling in a different direction from the others.

Therefore in this area, perhaps more than any other, there is a need for coordination and consistency of approach between Ministries, and between national and local levels of government, and between public and private sectors. This puts a particularly strong emphasis on the City authority, as the main agency able to carry out a leading and coordinating role, but in most cases they will need supporting structures of voluntary agreement among all the active stake-holders - considered as 'action partners', not just 'discussion partners'.

In some cases, the lever for creating better understanding and consensus may be policy-driven, leading to agreement which evolves in action as a result of actually implementing a locally popular policy. In other cases, a considerable period of discussion on assumptions, methods, and a common language of analysis may be necessary before action is agreed. A third useful entry point is to seek to agree general objectives and targets as a first stage, as a prelude to converting them into specific programs of action. The Workshop did not feel it appropriate to be too prescriptive which of these methods are most effective, since this will depend on the circumstances.

In summary, the key problem is seen as the creation of the maximum possible consistency of approach among the different, sometimes competing, agencies whose decisions influence the pace and scale of urban sprawl.

Overall Conclusion

An uninterrupted further tendency to urban sprawl is causing considerable concerns about equity, economic efficiency, and the environment. It results from powerful market processes, in which individual choices do not always lead to the desired effect, because of distortions in the market itself, and because of inconsistent policies being carried out by different levels and parts of Government. There are many policy instruments which can be used: it is at present uncertain whether they will completely solve the problems, but they can improve it. There is some serious professional concern that some of the technical methods which have been developed for infrastructure project appraisal may give a biased or misleading result in relation to urban sprawl and its effects, especially in the longer term. Better technical understanding and methodologies are possible, and should be a priority for professional work, but policy decisions will not wait on this development. Action partnerships of major stakeholders are necessary at city level. National and international agencies also have an important role to play because their current decisions are inconsistent, and may - in some cases - be making the problem worse.

Annex 4 A Fantasy

Consider a country where shoppers pay a fixed annual ‘shopping subscription’, to the supermarket of their choice. The subscription is carefully set, for political reasons, at a level which would be affordable by the majority of the population. Having paid the subscription, all goods are free: the shopper only has to pay the cost of getting there and back.

It is clear that the supermarkets are very popular. Unfortunately, they also make a loss. This loss is met by the government, out of taxation (levied, of course, on the shoppers, among others). The supermarkets also have a tendency to being crowded, with long queues to collect the best quality goods as soon as they arrive. The choice about when and where to open a new supermarket is incredibly complicated. The contracts between the supermarket buyers and their suppliers (who simply charge for their goods what they cost to produce, plus whatever the market will bear as a mark-up) are bizarre, fraught by fears and insecurity on both sides.

One would imagine that some economists, employed by the rather harassed supermarket management, would not find it difficult to recommend a good solution. Surely, they say, if each of the goods on the shelves were priced separately, more or less in accordance with the cost of producing it, then people would choose those goods they really wanted, not load up their trolleys with products that are very expensive to produce and unrealistically popular when they are provided free. And the supermarkets would make a profit. And the shelves could, for most of the time, be kept well-stocked. And there would be no need for a subsidy. And taxes would go down. And contracts with suppliers or developers would be simple. And everybody would be better off.

So a general meeting of the supermarket members is called, and the management proudly announces to the members how efficient and advantageous the new ‘product pricing’ scheme is going to be. The only real question is: *how to persuade the existing subscribers that they will be better off so they will vote for the change?*

Because when the meeting is called, some of them argue - we’ve already paid for these goods, in taxes, so why should we pay again? And others say - it’s not my fault that my family is now dependent on caviar: our whole way of life is built around it. And others say - it would be entirely inequitable to charge different prices, as this benefits the rich at the expense of the poor. And others say - how can you suggest increasing the prices for such an awful service? The shelves are empty and the queues are appalling. Improve the service first, and then we might listen to your crazy ideas. And one bright shopper even argues that to employ all the extra staff who would then be necessary - check-out assistants, security guards, accountants, auditors - would be so costly that the result would be less efficient, not more.

Since all these objections are manifestly true and valid to all present, the idea gets voted down.