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TRANSPORT TRENDS AND POLICY AND TRANSPORT ECONOMICS

Studies on transport economics and track costs undertaken by other organizations

Transmitted by the European Conference of Ministers of Transport (ECMT)

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CONCLUSIONS OF ROUND TABLE 111

Round Table 111 on the theme “Transport and Leisure” was held in Paris on 15th-16th October 1998. It opened with papers by Mrs. A. Graham (UK), Messrs. G.W. Heinze (D), H. Knoflacher (A), H. Meurs and Mrs. N. Kalfs (NL) and Mrs. F. Potier (F). A brief summary of the discussions at the Round Table is given below.

1. Leisure trips -- A poorly understood and underestimated phenomenon

It would be fair to say that the importance of leisure trips and associated traffic has been underestimated and has not attracted enough attention from policymakers. Europe, the largest market for international tourism in the world, accounts for 60 per cent of all tourist arrivals worldwide. Thus leisure passengers account for almost half of all traffic at airports. In addition, it should be noted that leisure trips are not restricted solely to international tourism, in that tourism also has a large urban component. In the United Kingdom, for example, over 40 per cent of the distances travelled are linked to leisure activities and comparable figures may be advanced for all other European countries.

The impact of leisure on transport is indeed greater than that of journey-to-work trips. The activities undertaken during leisure periods vary substantially: shopping, visits to family or friends, trips to sports centres, walks in suitable surroundings, visits to tourist attractions, time spent at weekend homes, etc. Leisure activities, therefore, take a multitude of forms and their ramifications in terms of transport are themselves extremely diverse.

Leisure activities cover many different areas, ranging from sporting to cultural activities, social events, games and travel to new and different locations. It is therefore easy to comprehend why so much travel is involved before and after such activities.

The fact that tourism accounts for 10 per cent of employment in Europe gives some idea of the size and importance of the tourism sector.

Furthermore, the characteristics of the tourism sector vary from one country to another. In the case of international tourism, for example, modes of transport and the frequency of departures differ. From another standpoint, however, the very concept of international tourism is no longer appropriate, given the emergence of a borderless Europe.

It is inconsistent to treat transport as induced demand in the case of leisure trips. Often, as in the case of an excursion, the trip itself is one of the reasons for travelling. The conclusion to draw from this is that the qualitative attributes of a trip are also of importance.

One of the particularities of tourism is the enhanced role enjoyed by suppliers as a result of advertising and also by virtue of the fact that, in selling activities that tend to be distant from the place where purchasers live, suppliers also sell transport services.

Trends in leisure activities and in the transport services relating to such activities vary from one market to another. Although the volume of trips made at weekends to second homes still remains high, the growth in such traffic, after rising strongly in line with the increase in car ownership, is no longer as high as that in trips to remote and attractive locations. It is also worth noting the strong growth in short-break trips and the trend towards dividing holidays into several shorter periods taken at different times of the year.

It is possible to divide the places where leisure activities are pursued into different segments: at home, near to home, within a specific region, within a country or abroad. This spatial breakdown is matched by a temporal one, depending upon whether nights are spent away from home and, if so, how many nights at a time.

One distinctive characteristic of leisure activities is that their very variety means that they are poorly understood. Surveys need to be made of lifestyles in order to determine the amount of time spent on shopping or the frequency of trips made to second homes. Comparing such data at the international level, however, will pose problems unless efforts are made to harmonize definitions.

Obviously, definitions already exist in the tourist sector, such as those drawn up by the World Tourism Organisation. It is planned to review these definitions in the near future in order to expand them and modify their scope. It is therefore important to gain a more precise idea of the weight of tourism in the economy; current data regarding the transport component of tourism are not detailed enough and there are gaps with regard to domestic tourism. In addition, even in the case of international transport, very little is known about the movements of tourists once they have reached their destination.

The result of the above is that tourism or leisure activities and their impact on transport mostly tend to be disregarded in studies on mobility.

2. Impact of growth in mobility fuelled by tourism and leisure activities

Mention should be made here of the fact that growth in tourism and leisure activities, which are both linked to rising standards of living and the trend towards shorter working hours, have a major impact on the environment. The two modes of transport that are used the most for leisure activities are, for short and medium distance trips, the car and, for long-haul trips, air transport.

As a result of fierce competition, air transport has become relatively cheap, particularly on long-haul routes where competition is the most effective. Some experts consider that the airlines subsidize long-haul flights by means of higher tariffs on short-haul links, where the competition between airlines is not as intense.

Over shorter distances, the use of the car, which offers flexibility, availability and the ability to transport a family with all its luggage, would, at first sight, seem to be irreplaceable.

The conclusion to be drawn from the above is that tourism exerts significant pressure on the environment. Some experts feel that the way forward is to promote local tourism, which requires little use of transport services other than those which are environmentally friendly. It would undoubtedly be possible to promote green tourism by offering people greater incentives to walk or make use of bicycles. Consideration might be given to establishing car-free areas where car-parking would be banned and tourists would therefore be forced to use other means of transport instead of the car. However, other measures will be needed to reduce the consumption of environmental resources by tourism.

The first impression of the experts at the Round Table was that the price of mobility failed to reflect the consumption of resources, notably in terms of the environment. The price of mobility is always a central issue with regard to the environment. It would be fair to say that, in this respect, the Round Table failed to break any new ground by asking for the impact on the environment to be integrated into transport prices.

In contrast, the Round Table noted that public transport, provided that certain changes were made, could be used to support leisure mobility. Leisure trips are made spontaneously and may take a number of different forms. By adopting a radically different approach to public transport, which until now has had to focus exclusively on journey-to-work trips, public transport could be made more flexible, more accessible and better adapted to leisure travel. Indeed, the Round Table called for a real revolution in terms of new and innovative ways of thinking. Adapting public transport to the market for leisure travel is well within the scope of transport planners, who must dare to think and design systems differently (minibuses, pool taxis, dial and ride schemes, night services, accompanied luggage, complementary electric cars, etc.). Once public transport has been able to adapt its services in this way, it will also be able to cater for any kind of mobility, including journey-to-work trips.

Lastly, new technologies such as the Internet can help to promote tourism, by providing information regarding the destinations available and the means of transport on offer. In view of this, new technologies and leisure activities would seem to be complementary, which makes it all the more necessary to encourage public transport operators to offer radically different services.

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CONCLUSIONS OF ROUND TABLE 112

The ECMT 112th Round Table on Transport Economics took place in Paris and focused on “Transport and Ageing of the Population”. It began with reports by Mr. W. Brög (D), Mrs. F. Marcellini (I), Mrs. R. Hjorthol (N) and Mr. P. Oxley (UK). Below is an initial overview of the Round Table discussions.

With the advances in medicine, **life expectancy will increase** in years to come. The onset of disability will also be later. By and large, then, the population will age substantially but differ from the elderly of today in certain respects.

First, in sociological terms, the elderly will have experienced social change and will be used to claiming their rights, which will foster a more participative form of democracy. Second, those among the elderly who are not wholly reliant on state pension schemes will enjoy relatively high incomes. Finally, they will be car users. Women too will hold driving licences, which is not always the case today. All these changes make it particularly hard to foresee what the future holds.

This explains why there is **no point in extrapolating from current trends, because future developments will be on a new scale.**

Given the number of elderly people in years to come and the growing specificity of their demands, pensioners will become a major market in their own right. Apparently, public transport companies are still unaware of this and what it entails. For instance, while public transport signing may be adequate for younger people, it will not be for the elderly. To cater for the increased number of third-age users, transport planners will have to adapt their methods and goals to a segment of the population which will be divided according to levels of disability. A distinction should, in fact, be made between pensioners who are able-bodied and those with more or less serious handicaps. **Markets will accordingly be segmented into age groups**, in particular the very elderly, whose needs resemble those of the severely disabled. Rail transport has been losing its elderly clientele, whereas cars and buses remain the most popular means of travel. For the very elderly, there are still no suitable transport services.

Transport problems will also vary according to where people live. While the transport problems facing the elderly will be relatively easy to resolve in cities, where any benefit to the elderly will benefit the whole population, the same cannot be said for rural areas where people rely on private cars. The death of a husband who is the only member of a couple to have a driving licence can pose particular problems. Here, transport solutions will have to be found for people who are still able-bodied but do not drive. This will go hand in hand with the need for services for the increasingly disabled, but it should be borne in mind that special transport provision carries very high costs. So it is important to begin devising solutions that tap the potential of new technologies to rationalise services, especially since conventional public transport will be unable to cope efficiently with an ageing suburban population. Consideration should nevertheless be given to special transport services, such as taxi transfers to and from public transport routes.

Driving life will be extended as innovation-led improvements are made in cars and driving aids. The car will remain a vital means of transport, although this clearly runs counter to the goal of environmentally sustainable transport. Because the elderly have slower reactions than those of working age, road safety will also be a problem. **Criteria will have to be found to judge a person's ability to drive**, even if the elderly tend to decide to drive less of their own accord. In any case, if the elderly were to be banned from driving, alternative services would have to be provided. Safety will also become a crucial issue for pedestrians, many of whom will be elderly and very elderly. Infrastructure development will have to take into account the large number of elderly people, who are particularly at risk when travelling. It will therefore be important to increase staffing on public transport.

Because activities have become more dispersed, **mobility, although clearly a basic right, is sometimes an obligation.** This problem, which relates to land-use planning, will become increasingly important as the population ages and a better mix of land use has to be found. It is not inconceivable that everyday activities such as shopping will systematically require a means of transport. If distances increase, for instance, people will find it more and more difficult to give up their cars. The disappearance of neighbourhood shops is incompatible with an ageing population. Furthermore, **services to the home will not suffice**: it will be important for the elderly to have a social life, including visits to friends, and this will involve travel. Enabling the elderly to live like other people, even if special services are required, will help to keep them happy.

Moving the elderly back to the city centre is not an easy matter, were it to be promoted. Some will want to stay where they have always lived. It will therefore be important to provide accessible transport (low-floor coaches, buses and trams) wherever possible.

With regard to **research needs**, there is clearly a lack of data and systematic reviews of the implications of population ageing. Certain concepts need to be clarified, such as the definition of the criteria for minimum accessibility. By and large, what is needed is a scientific approach to the problem, an approach that takes stock of available resources and draws on experience. On the other hand, not all decisions should be taken by 18-to-60 year-old wage-earners, and the elderly should be given their say. Wage-earners are mostly car drivers and not particularly sensitive to the special needs of the elderly disabled.

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CONCLUSIONS OF ROUND TABLE 113

Round Table 113 on the theme “Land access to sea ports” was held in Paris on 10 and 11 December 1998. It opened with papers by Messrs. H.A. van Klink (NL), J. Mangan (IRL), T. Notteboom (B) and C. Reynaud (F). The following summary presents the main conclusions reached at the Round Table.

1. Growth in trade and port administration

Until the recent financial crisis in Asia, international trade had been growing extremely rapidly. Container traffic worldwide has risen substantially and there is still scope for further expansion. By the year 2020, traffic flows could conceivably be as high as 100 million TEUs. Coping with this growth poses an enormous challenge.

There are three reasons for this growth: the increasingly widespread use of containers, which means that the problem for ports is no longer how to attract vessels but how to attract containers; the formation of shipping consortiums, which has helped to concentrate container traffic flows; and lastly, the much larger size of container vessels which has made it necessary to upgrade port infrastructure to cater for high-volume flows. The advent of containerisation, however, has led to greater diversity in routing criteria.

Against this background, it is worth bearing in mind that Europe is a maritime continent and that ports are areas where highly sophisticated logistic activities are concentrated. Indeed, in this respect it is possible to talk in terms of logistic polarisation. This is by no means a recent development. Historically, ports have always been trading areas that have subsequently developed into industrial zones.

Not all goods arriving at a port are subsequently dispatched over great distances. Some may be shipped out again by sea and some may be processed *in situ*.

It is remarkable to see how technical advances have made it possible to substantially increase the size of vessels, with the result that, in terms of transport costs, distant countries are now extremely accessible. The most costly component of the transport chain is the inland leg, and it is over this leg that prices are most competitive in the transport sector. This explains why forwarders fight so hard to gain control over inland transport operations.

As the volume and concentration of transport flows has increased, so too has the number of distribution centres located in port areas. Over 50 per cent of European distribution centres are located in the northern range between Le Havre and Hamburg. There is fierce competition between ports to attract trade flows and also to attract activities. The interplay between actors is a determining factor in this competition, although the institutional framework for such competition has not yet been fully defined (e.g. the respective role of the public and private sectors, charges for using infrastructure, etc.). There is competition between not only “ranges” but also ports, depending upon the extent to which ports have been integrated into operators’ networks. It is a fact that competition between ports has increased, even between ports that are not located in the same geographical area in Europe. As a result, the *core business* of ports no longer consists in loading/unloading operations and the concept of a protected *hinterland* is no longer valid.

It would seem that, over the course of the 1990s, the highest traffic gains have been in medium-sized ports and that the larger ports have become less attractive. The larger ports have had to contend with problems arising from infrastructure congestion, which in the case of Japan have been severe, and the resultant damage to the environment. The increase in the size of ports generates diseconomies of scale. As a general rule, although economies of scale can be achieved in the primary and secondary sectors, it is far more debatable whether they can be in the service sector. Concentration, which lies at the heart of environmental problems, is still taking place although within certain limits, as consortiums increasingly start to think in terms of networks.

In many cases, the success of a port will depend upon its ability to harness all the know-how and expertise of its actors. There are still cases where know-how remains dispersed and is not perceived as a vital asset. Yet for some of the experts at the Round Table know-how is at least as important as the availability of infrastructure, in that price differentials are not particularly important with regard to port operations in Europe and the area where competition will be strongest will be over the ability to organise the handling of goods.

2. Land links to ports

Although road currently remains the dominant mode, the railways and the inland waterways are starting to make inroads. Rail and the inland waterways can only be successful if they are closely integrated into the operations of container terminals.

In general, the road infrastructure inside ports is saturated, resulting in long delays in loading containers. In view of this congestion, rail and the inland waterways are perfectly credible alternatives.

In the case of the inland waterways, the aim must be to restore the confidence of forwarders in this mode of transport and to allow them to negotiate transport contracts freely.

In the case of rail, it needs to be said that, in terms of the overall costs, i.e. the cost including transport time, on-time deliveries, tracing capability, etc., services are not always competitive. The railways will only be successful if they can substantially lower their tariffs.

Participants at the Round Table felt that the rail sector would also have to innovate by designing simpler and more direct transport services.

Freight corridors are already a reality, but perhaps it is necessary to go even further and consider the possibility of setting up networks dedicated solely to freight. Corridors alone are not enough, and *slots* need to be introduced for freight shipments. Rail operators can make a real contribution by organising complete train-loads or block trains.

It stands to reason that combined transport should be able to offer a widespread alternative network to road. What we are seeing, however, is widespread competition between different actors (shipping companies, port operators, rail networks, subsidiary networks, etc.) and the rules of the game have not yet been finalised. As a result, the railways dominate the sector and perhaps it might be preferable to dismantle the monopoly they have on traction to ensure greater competition or at least greater transparency, notably in the invoicing of traction prices. It is worth noting in this respect that freight corridors (freeways and freightways) are not fully utilised. Perhaps over time an entrepreneurial spirit will emerge which will allow the possibilities they offer to be fully exploited. If the freeways have proved to be a failure until now, it is because of the inefficiency of the railway companies. These companies need to be made to adopt a new approach by being urged to take initiatives. Far too often they remain inactive, preferring to wait and see what happens. Another problem that needs to be addressed is the clash of interests between the railway companies and their subsidiaries specialised in combined transport. Obviously, uncertainties over infrastructure user charges, too, discourage companies from taking the initiative. As a general rule, the railway companies fully cost projects before they actually carry them out.

Again with regard to combined transport, a sector in which all railway companies appear to be losing money, the experts at the Round Table felt that the authorities should choose between a policy aimed at ensuring a balance between modes and one of liberalisation. Combined transport cannot compete with a road sector which, once it had been liberalised, saw prices collapse. However, the experts at the Round Table did not feel that this was a sufficient reason to challenge such a policy or to justify the subsidising of combined transport activities. Current developments, unless accompanied by a reform of the railways, is doomed to failure. The main issue is to increase the productivity of rail networks in order to reduce the cost of traction on main routes. This could be achieved through longer trains, quicker marshalling of wagons (which accounts for 25 per cent of costs) and faster delivery of wagons by giving priority to freight. This would generate savings of around 20 to 30 per cent in traction costs.

There are two conflicting strategies towards tariffs in the combined transport sector:

- Keeping in place tariffs which do not cover costs, which require subsidies but which also imply maintaining the *status quo* in terms of the services offered;

- Higher tariffs which would allow combined services of higher quality to be offered and which, above all, would permit investment. This is a strategy which would allow operators to take a long-term approach, but is also one which would require the short-term transitional arrangements to be properly determined.

It would seem that, at present, the rules regarding the rail sector are neither clear nor transparent. Even though social harmonization and competition policy may help to improve the balance in the transport market, it is nonetheless a fact that greater competition in the rail sector would help to secure the productivity gains that are apparently indispensable.

In considering the role played by infrastructure, it would seem that the latter are not a determining factor in areas which are well equipped in that respect. This would suggest that the role played by organisational factors is paramount. However, it is also true that there are some regions in Europe which do not have sufficient infrastructure and there is therefore a need to provide for funding mechanisms to help these regions catch up.

Cabotage is being increasingly integrated into logistics chains. Cabotage is a specific activity which is distinct from maritime shipping. The profit margins on cabotage are low, however, due to lengthy procedures in ports and cumbersome customs formalities. In this respect, the actions of customs authorities can make it impossible to ports to work efficiently, hence the need to harmonize and simplify procedures. *Feedering* cannot be developed unless it is properly integrated into the individual links of the inland transport chain and is conditional on co-operation between short-sea shipping operators and inland transport operators.

Improving land access to sea ports requires action by all the actors -- of which there are many -- involved in:

- The creation of inland terminals and the transformation of their role to ensure that all port-terminals are integrated into a logistical chain. Such terminals would allow part of the distribution system to be moved outside the port area, thus releasing capacity in ports. These terminals will, in due course, become sites where logistics activities will be concentrated. They will be used to group freight shipments, an activity no longer carried out in ports. Care must nonetheless be taken not to create new bottlenecks at the level of terminals.

- While port authorities have little room for manoeuvre, as managers they must adopt a proactive approach to the improvement of seaport accessibility. Rather than issuing new regulations, they must start thinking *collectively* with all the actors involved. It must be stressed yet again that knowledge, which at present is often dispersed in ports, and the application of that knowledge has an essential role to play in this process. A change in this respect can influence the intangible but basic elements of accessibility and reduce the general costs of access.

- Maritime shippers, because they want to increase their share of *carrier haulage* in order to control the chain and the associated costs, also have a role to play in this respect. While their aim is to cut costs by streamlining inland transport operations, the approach they have adopted lies purely at the microeconomic level and consequently they cannot develop a rational and closely-knit network. Moreover, not all maritime shippers have the same strategy and they exhibit opportunistic forms of behaviour.

- The railway companies are still the main actors in this area by virtue of the dominant position they enjoy, but until now they have acted extremely cautiously.

- The public authorities regulating the markets must above all stabilize the institutional environment and clarify, with regard to the ports, the respective roles of the public and private sectors. Administrative and customs procedures must be simplified. Access to networks must be liberalised and the rules of competition harmonized. Rules must be drawn up with regard to the internalisation of costs, and efforts to combat crime are part of the sovereign powers of public authorities.

- The European authorities must integrate ports into genuine networks and must not limit themselves to creating corridors. They must give priority to an intermodal approach which places all modes on the same footing.

In conclusion, therefore, we are faced with a world that is undergoing rapid change. In view of this, ports must be allowed to evolve as freely as possible and no attempt should be made to impose a standard model for either port administration or inland transport services to ports. In addition, all the participants at the Round Table stressed that there was a real problem with rail services and felt that the current approach of railway companies to combined transport operations was flawed. In view of the current increase in container traffic in particular, seaports will ultimately serve as a template for the entire intermodal transport system in Europe. Ports must therefore be integrated more closely into the Trans-European Network rather than simply being attached to the latter through links.

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CONCLUSIONS OF ROUND TABLE 114

The ECMT held its 114th Round Table on transport economics on 11 and 12 March 1999 in Paris and the theme for discussion was “Regular interurban coach services in Europe”. The Round Table was chaired by Mr. P. Laeremans (B) and opened with papers by Messrs. D. Bochar (B), T. Komornicki (PL), P. White (UK) and K. Jansson (S).

The main conclusions drawn by the Round Table are briefly summarised below.

1. Some factual observations

Firstly, it should be noted that line services by coach and urban bus services have very different cost and operating structures. The operating speeds of line coaches are far greater than those of urban bus services while labour costs are lower. The cost in terms of vehicle-kilometre for a line coach amounts to around 1.2 Euros. The advantage to coaches as a mode of transport is that the unit capacity of vehicles is low, while the networks they service can be highly dense and services can be provided at higher frequencies. Coach services are therefore a highly efficient mode of transport in sparsely populated countries.

The impact of the **deregulation** of long-distance coach operations has been **beneficial** in the countries where it has been introduced, i.e. primarily the United Kingdom and Sweden. In the United Kingdom, coaches account for 8 per cent of passenger trips of over 80 kilometres. The type of services offered are similar to those provided by rail, but fares are 30 per cent cheaper. This has allowed a category of low-income users to make trips that would otherwise have been far more expensive. It is for this reason that the users of line coach services are primarily young people and pensioners, two of the least-advantaged categories of the population. The impact on rail has been marginal, given that coaches are mostly used by a different category of the population, and the rail's loss of passenger traffic amounts to no more than 1 or 2 per cent. Results obtained in Sweden confirm the estimates obtained from models designed to predict this type of effect. In Sweden, the transfer to coach transport has mainly been from private cars and not from rail (as in Norway), since there may be marked differences between the rail and coach transport markets.

Passengers who use coach services are **highly sensitive to the price** of such services. Price is a major factor in the decision to travel by coach, followed by frequency of services and scope for door-to-door transport. In terms of the potential shared customer base, rail has been forced to adapt and review its fare structures, which has been of great benefit to consumers. On the whole, the liberalisation of scheduled coach services has yielded substantial benefits for passengers in terms of both prices and the range of services offered. It would be fair to say that deregulation is beneficial with regard to medium and long-distance trips, which exhibit high price elasticities, whereas it has proved to be somewhat of a failure in the case of local services where prices have risen and the frequency of services has fallen. Mention should nonetheless be made of the possibilities afforded by coach services with regard to airport access, particularly in cases where airports are located outside towns, or as an integral part of air transport services, especially for short-distance links.

The development of international coach services is closely linked to the migration of populations. In response to political, economic or social events, European populations migrate from one country to another while maintaining links with their home country. In most cases these migrant populations are in the low-income bracket and return to their home country at regular intervals by means of scheduled international coach services offering a wide range of destinations. In addition, following the collapse of the Berlin Wall, there has also been increased demand from the tourist sector, which rail has been unable to meet. On routes between the central and eastern European countries and western Europe, rail is now as expensive as air transport. It is for this reason that international coach services are growing at a rate of 4 to 5 per cent a year. However, the market catering to migratory flows, which has grown strongly until now, may ultimately not prove less buoyant. It would be preferable to develop markets catering to other categories of the population, notably young people and senior citizens. However, it is difficult to operate coaches affording access to severely handicapped people in that, unlike buses, coaches cannot readily accommodate lowered floors.

It is the **density of the lines** offered by international coach transport services, or the density of the domestic transport network in the case of countries that have liberalised this type of service, which explains the success of coach services, hence the importance of creating structured networks offering uniform services with a satisfactory degree of interoperability.

Customers are also sensitive to the frequency of the services proposed. The existence of coach stations where passengers can change to other lines is another factor in the success of coach transport. In addition, the European motorway network allows rapid services to be offered to a large part of the European continent. By comparison, the rail networks are often poorly integrated and suffer from non-interoperability. In contrast, the emergence of low-cost airline companies has significantly added to the competitive pressures, while in the CEECs there is strong competition from illegal minibuses (even though it is now decreasing) due to problems involved in policing the sector.

On the whole, line coach services cannot compete with air transport or high-speed trains and therefore address another type of customer who is sensitive above all to the low prices and variety of routes proposed. The customer base primarily consists in new passengers and is therefore induced traffic. It should also be noted that the main competitor to the coach is not so much rail as the private car. As a result, the experts at the Round Table felt that the risks taken in liberalising interurban coach services were relatively minor compared with the benefits they offered to low income populations.

2. Desirable trends

Analysis of the relatively youthful customer base for line coach services suggests that **marketing structures should be strengthened** through the use of sophisticated resources such as the Internet. Since the customer base has fairly distinctive characteristics, any action aimed at making use of leading-edge technologies would be of benefit to the coach transport sector. Electronic payment would therefore be one means of marketing services. In this respect, line coach services are one step ahead of the rail networks. At all events, it is clear that in many cases traditional rail services are simply not competitive, except on a number of specific routes where rail can offset higher fares by high-speed services.

Coach stations should preferably be located in city centres, where access to other modes of transport is easiest. At most, coaches account for merely 1 per cent of the traffic in city centres and are wrongly accused of causing congestion. Coach transport makes use of the intermodality of interchange platforms.

All long-distance services must be **centralised in the same terminal.** This is the necessary condition for the creation of healthy competition. Independent operators from the major groups must therefore be installed in these terminals to ensure fair competition. The operators present must be clearly identified. Even though some participants at the Round Table felt that public ownership of terminals ensured a better guarantee of free competition, most felt that ownership was of little importance and that what mattered was equal access to terminals for operators. To this end, a clear distinction must be made at the accounting level between management of a terminal and the operation of coach services in cases where the terminal is owned by an operator.

While it is not always possible to site platforms in the centre of cities, it is generally out of a concern to protect the railways that planners avoid siting intermodal exchange centres near to railway stations. This is unfortunate. **Attempting to protect the railways is a rearguard action** for which there is absolutely no justification in terms of possible transfers of customers, as recent experiences with liberalisation have shown. It is the railways which have to adapt and assert their presence in market niches where they are genuinely competitive (examples that come to mind are high-speed trains, suburban services in highly built-up areas and certain regional links).

Line coach services are part of the public transport system, which has seen an increase in the number of users. This means that the **quality of services** and their competitiveness have continued to improve. The on-board comfort of coach passengers has increased in terms of both ergonomics (space between seats) and technology (e.g. air conditioning). This trend is set to continue and it is worth noting that the countries of eastern Europe are eager to be given criteria for quality of service which they can apply to their coach services. The profession should give even more thought to competition between private car use and coaches, on the basis of quality of service, since coach transport offers genuine scope for opening up new markets once the possibility of offering door-to-door services is taken into account.

Safety is also of paramount importance. In the past, illegal operators have managed to enter the international transport market, but after a few accidents which were widely reported in the press customers have become sensitive to the reputation of the operators they use. A network such as the one operated by Eurolines, which was presented at the Round Table, attaches great importance to compliance with safety regulations. It is clear from this that coach transport is an activity that has come of age in the transport sector. The safety record of coach transport in terms of the number of accidents is comparable to that of air transport and rail, namely 22 times safer than transport by private car. To ensure that this trend is maintained, the authorities must ensure that regulations are complied with, particularly when they have an impact on safety.

Liberalisation of the market has been accompanied by a dramatic fall in the number of operators as firms have combined to form **conglomerates**. This might raise fears about abuses of dominant positions in certain markets. In practice, however, the markets have remained highly contestable, i.e. the threat of new entrants or competition from another mode of transport is always present, rendering baseless concern over manipulation of the competitive process. It needs to be borne in mind that the danger of a dilution of competition is made all the more remote by the fact that competition from private car use still remains as fierce as ever. Furthermore, demand from users and the range of services offered to the latter remain a regulating factor. The coach transport sector will always have to keep prices below those of its competitors if it wishes to prosper in the future. Moreover, in many cases small companies manage to survive by acting as sub-contractors to larger groups. Liberalisation has therefore not led to the elimination of large numbers of firms.

In contrast, it would be advisable not to allow the same company to operate several modes of transport concurrently (e.g. coach and rail). The minimum requirement would be for separate accounts and a great degree of managerial autonomy.

3. Action expected from government

Given the clear benefits to users, particularly those with low incomes, there are no grounds for slowing down the development of line coach services. The conditions of competition must be fair, however, and consideration will primarily be given to **taxation.** There is no reason why different VAT rates should apply to different modes of passenger transport. Some modes, for example aviation, pay very little tax on fuel despite the fact that energy consumption per seat for this mode is ten times higher than in other modes. To the extent that services are more or less in competition, it would be inadvisable to seek to promote one mode at the expense of another. In this respect the VAT applicable to coaches, which is far too complicated and varies substantially from one country to another, needs to be simplified and harmonized.

The **conditions under which licences are issued** for scheduled international lines need to be harmonized. Practices vary widely from one country to another in this area and there is no genuinely multilateral approach to the issue, which is dealt with solely at the national level. It is also necessary to adopt a standard approach to EC regulations on coaches. These rules leave Member States far too much latitude in their interpretation, particularly with regard to the definition of services.

Compared with its potential competitors, namely the private car and air transport, the coach transport sector has a positive balance in terms of external effects. According to some estimates, internalising costs should only increase the total cost of coach transport by 6 per cent, which proves how attractive it is in environmental terms. There are therefore good grounds for ensuring that the conditions of competition are harmonized, provided that each mode covers all its costs in their entirety. If a genuine effort were to be made to promote public transport by road, consideration might be given to creating priority lanes on congested roads for public transport. In addition, by **harmonizing the length** of vehicles authorised to use road networks (the maximum permissible length currently varies from 12 to 15 metres), the operation of services could be streamlined and, at the same time, operators could be allowed to make productivity gains.

Border crossings can reveal some very real problems. For example, waiting times at the external frontiers of countries which have implemented the Schengen Agreement may be very lengthy, even though some favourable trends for public transport appear to be emerging. One very effective measure, for example, is to install special lanes for coaches or time windows for crossings by coaches. Governments should pay greater attention to these problems whose solution could help promote, once again, the use of public transport. If the Schengen Agreement leads to serious delays for coaches crossing the borders of this area, it should be noted that scheduled buses tend to be inspected more often than coach trips during which passengers can neither embark nor disembark.

A particularly circumspect approach should be adopted towards the **issuing of visas**, an area where competencies are spread far too widely. Moreover, the provisions relating to the responsibility of operators who transport illegal immigrants into the Schengen area have attracted widespread criticism.

When **awarding subsidies** to operators in order to meet public service obligations, governments think first in terms of the railways. It is unfortunate that systematic comparisons are not made of the cost of alternative solutions based on the use of coach services. In many cases, coach transport is markedly cheaper and offers comparable quality of service. Similarly, when the authorities compensate for the reduced fares granted to certain segments of the population, they must think about doing so for all the modes which provide similar services; many students and senior citizens travel by coach and must be allowed to benefit from the same advantages they would enjoy if travelling by train.

With regard to **working conditions**, a set of regulations relating specifically to coaches, as opposed to lorries, is required. Greater latitude is needed in the time spent on duty, but not necessarily longer driving times. The Round Table strongly emphasizes the need for stringent controls in this area.

The legislation that will be adopted with regard to **cabotage**, an area which until now has been highly regulated despite several recent breakthroughs, is of paramount importance for the future of scheduled services since they will provide the blueprint for greater integration of domestic and international services.

In conclusion, the lack of research into the coach transport sector is regrettable because it is a sector that is rich in potential.

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CONCLUSIONS OF SEMINAR ON IMPROVING THE CONTRIBUTION OF TRANSPORT ECONOMICS RESEARCH TO POLICYMAKING

On 10 and 11 May 1999, the ECMT held a Seminar in Paris on the topic "Improving the contribution of transport economics research to policymaking". Chaired by D. Bjørnland (N), the Seminar opened with papers by Messrs. A. Baanders (NL), A. Bonnafous (F), J. Engelhardt (PL), Mr. N. Foster (USA), Y. Geffrin (F), P. Goodwin (UK), U. Karlström (S), R.M. Kimber (UK), Mr. R. Krupp (D), J. Matejovic (CZ) and W. Rothengatter (D). All of these speakers were either from the academic research field or from research-commissioning government departments or agencies. National papers, outlining the situation in a number of countries, were also distributed at the Seminar.

The main conclusions of the Seminar are briefly outlined below.

1. Generating and organising research

(a) Participants in favour of public/private partnerships

Some countries have research systems that are fragmented and that lack coherence, a situation which eventually leads to problems. This is because there are large numbers of actors sharing piecemeal contracts, which is not conducive to the formulation of an overall approach or to the emergence of long-term basic research. While the same comment does not apply equally to transport research in all of the countries of Europe, it does reflect a state of affairs which, in many respects, precludes a swift response to policymakers' problems and cannot provide answers to society's most fundamental concerns.

The question that arises, therefore, is whether or not there should be a dedicated body for transport research to generate a steady stream of transport issues for analysis.

There can be no all-embracing answer, as the variety of situations encountered in the countries of Europe shows. Nevertheless, it is possible to formulate some comments on this issue.

- If a single body were responsible for transport research, it would have a monopoly on such research. This is never a good idea. It would inevitably become set in its ways and in the long run would cease to be effective. In seeking appropriate structures, a framework that enables constant creativity should be the guiding principle for policymakers.

- While there should not be a monopoly on the supply side, there should not be one on the demand side either. Indeed, even the best structure for commissioning research will neglect important issues that it has not been able to foresee. It is also important to involve private institutes in defining demand. What is needed is multiple research initiators and sources of funding. The ideal would be to have three or four separate funding sources in each country.

- The operative word for governments should be complementarity. Complementarity among universities, public research institutes and consultants can ensure that competition elicits the best from each. Research contracts can forge links between all these different suppliers and commissioners of research. The most effective way to commission research is not to call on a single institute, but to arrange for competition to elicit the best studies, based on alternative approaches.

- Although demand and supply are quite well matched when it comes to short-term research, basic research is a more problematic area and may warrant a dedicated body or, alternatively, adequate programmes, since there is no doubt a critical size for carrying forward long-term activities. Clearly, in this respect, it is difficult to think of research demand as distinct from research supply.

- The advantage of a subsidised public body is that it can concentrate on basic research. It is essential to anticipate the issues that policymakers will have to deal with a few years down the line, avoiding a solely short-term approach. This is where a public body could help. Another possibility would be to award contracts through some more streamlined structure than a public body. With this approach, it would be important that the commissioning body itself undertake some research in order to be able to foresee the issues that may arise. Generally, whatever body initiates the research should itself have research experience, if not, misunderstandings will soon arise.

- If a public research body is set up, policymakers should be under no obligation to use its services. Any such body must stand on its own merits. This is part of a positive and competitive procurement strategy in which the final selection of actors is based on sound criteria. There is no ideal way of organising research, but even if we cannot plan the contents of research programmes to be as relevant as possible, we can still optimise research structures.

- The quality of a research programme is related to how clearly the policy concerns on which it is based are formulated. A clearly stated policy strategy that precisely maps out the scope of the research is vital for a high-quality research programme. Clarity makes for a virtuous circle.

The majority of participants at the Seminar supported the idea of a public body, but one that included structures for co-operating with consultants, private sector researchers, research laboratories, etc., i.e. they were in favour of a genuine partnership between the private and public sectors.

Calling on different institutes, or indeed research programmes, can lead to duplication and overlaps. Not that either approach is open to question on these grounds, since overlaps can provide confirmation that a given policy response is correct or indeed, where responses differ, point to the need to cross-check them. As a rule, unlike oversights, overlaps do no harm. However, duplication may be due to a lack of diversity among the bodies responding to calls for proposals. Ideally, we should be able to encourage new players to enter into the research field, since multiple actors in closely related fields of research can spark off new ideas. Care must nonetheless be taken not to waste resources and duplication must therefore be kept in check. It is important not to have too great a number of funding recipients, but small and medium enterprises (SMEs) can and, what is more, should be used in research. Original thinking has nothing to do with size and may even be inversely proportionate to it in that small structures can focus all their energies on certain specific issues without acquiring attitudes and habits that stifle initiative. One of the issues to be resolved from this standpoint is the red tape that accompanies many research contracts: SMEs cannot afford to devote too many resources to administering these contracts. SME involvement is a feasible idea no matter what the size of the country concerned. Of course, one may wonder just how small a firm can be without quality suffering, but experience has shown that small firms that also invest in maintaining high levels of expertise are rarely inferior. Consequently, finding an appropriate structure for integrating SMEs into research programmes could prove worthwhile. On this point, the evaluation of the European Union’s Framework Programmes is not yet conclusive enough. Integrating SMEs in vast research programmes is a difficult exercise in itself: small- and medium-sized firms can be put off by all the administrative formalities, by the need to secure co-funding where this is an explicit requirement -- which is a problem for small teams and not always appropriate for solving policy problems (it means shared teamwork) -- and by the problem of inadequate *monitoring*. One final criticism that could be levelled at many current programmes is that researchers’ fees are generally based on quantity, not quality.

(b) The need for a national programme

Another issue is whether there is a need for a research programme providing funding on a continuing basis that confers a degree of stability as regards policy concerns in the field of transport economics and sociology. In practice, research always has to compete for a budget and a research programme does provide some budgetary stability. Further, a programme focuses the attention of decisionmakers and can provide a constant flow of ideas in a given field; it is an effective way of integrating strategic research. A programme that gives policymakers a voice ensures the stability essential for research. However, a programme should not be so inflexible that it precludes dealing with current issues or responding to the urgent issues that are typically high on the list of policymakers’ concerns. So, it must be possible to alter the priorities without reference to the main research themes -- which tend to be on-going -- that inform longer-term policy interests. In order to avoid slippage, it is important to establish the overall budget ceiling within which priorities can be altered when a new project is added.

A national programme promotes a country’s expertise and keeps its knowledge base up to date. It has an educational value and helps in training young researchers: it also contributes to the expertise and training of government administrators. A national programme ensures that a country is able to appropriate research and also enables it to transpose the results of international research at national level, transport being not only a highly specific field but also highly country-specific. Consequently, it is vital to strike the right balance between national and international programmes. This could have a positive impact on training and the dissemination of knowledge. Generally, consideration should be given not only to research but also to the dissemination of research findings, and in this respect a national programme can be an effective tool.

Programmes must be formulated in terms of the actual issues facing society, not in terms of concepts. Once we begin to talk of stability as regards policy concerns, we may well ask ourselves whether stable concepts – such as permanent indicators for measuring transport activities – are strictly necessary. Indeed, the concepts that we define may well no longer apply by the time a project is completed. All the evidence is that problems are less prone to change and are more permanent than concepts, so we would be well advised to approach research studies from a problem-solving rather than a concept-based approach.

(c) The size of countries and the organisation of research

Sometimes what is feasible in a large country can be difficult in a small country. In fact, it would be absurd to try to apply formulae that can only be effective in a large country to a small country. On this point, the

Seminar stressed that quality of research carried out by small countries is just as high as that of larger countries.

Often, small countries remain open to research conducted in other countries. As a result, they do not have to reinvent the same concepts or repeat the same cycle of research. However, as a country's experience is unique, models cannot be transposed without exercising caution and prudence. Solutions that other countries have used can be adapted sensibly. Another possibility for small countries is to take part in the work conducted by a larger country, either by contributing to funding or by joining international teams, as is the case with the European Union's Framework Programmes. At any rate, the experts attending the Seminar considered that even small countries were capable of putting in place procedures to encourage competition and reliance on the creativity of small structures. Open debate is one way of always ensuring that overlaps or diverging opinions, which can be mutually instructive, are identified, provided that the co-operative framework is properly organised. However, in the view of some of the experts at the Seminar, there are countries which, because of the size factor, have no need to conduct their own transport economics research and which can simply base their planning on examples taken from other countries. A small country does not always need to conduct its own national economic research, provided that research findings are disseminated properly. Small countries clearly cannot do everything, but this still does not prevent them from conducting research on their own account, which must nonetheless be to the highest standards.

2. Evaluation and dissemination of research

(a) Relations between researchers and policymakers

The lack of understanding between the research and policy spheres is, in many respects, a structural problem: researchers have compartmentalised their particular fields of research (for example, modal research) whereas policymakers are interested in the overall operation of the transport sector, i.e. in economic, land-use planning and environmental aspects. Decisionmakers tend to think that there has been too much "speculative" research and not enough into the issues – inevitably urgent and extremely relevant – that are of concern to them. Researchers, on the other hand, think that advances often depend on carrying out long-term research. The last bone of contention is that the findings of scientific research are often not what policymakers want. It is important to monitor research as it progresses so that the end-product is not too far removed from the needs of the research initiators. The best approach is to have an appropriate oversight structure, composed of a mix of actors from different backgrounds and specialist fields. Likewise, new faces from the scientific community should be called in to avoid perpetuating stale ideas around which a consensus can build up too easily.

The aim should be to break down the barriers between policy and research. Perhaps when research is privatised, contact with policymakers is more direct. The United Kingdom model tends to bear this out. Contact is a key factor. Depending on the structure adopted, there may be several intervening levels between decisionmakers and researchers. This is precisely what should be avoided, since each of the intermediate actors distorts the issues by adding their own interpretation of the issue. The way they view the issues depends on what their job is. On the face of it, direct contact between policymakers and researchers is a sensitive area, but it can also prove very productive. Communications specialists, skilled in presenting results, can also be called in. Another aspect that is always important is knowing how to present basic research to the public. However, before basic research can begin, we need institutes to enter the field on a long-term basis so that some experience can be gained. This is tantamount to saying that it should be possible to initiate research for which there is no policy mandate, simply on the basis of recognised specialists' professional judgement. This is the prerequisite for accumulating knowledge and skills. The scale of research programmes is also a factor: it is only by ensuring some stability over time that teams can be encouraged to enter the transport field on a long-term basis. A specific problem arises for countries that have opted for all-out regionalisation of their public institutions in that it might be difficult for them to design research programmes to tackle problems at national level. It could also be more difficult for them to share operational conclusions.

A crucial point is that the people who present research findings to policymakers are not the people who were responsible for translating their policy concerns into research. This is acceptable if the presentation of research results is handled by communications specialists and the presentation of policymakers' concerns is handled by research specialists. However, if we add to the intermediate levels and compartmentalise communications, we can easily add to the misunderstandings between policymakers and the research community. To ensure that research findings are fully understood and that policymakers' concerns are properly addressed, the intermediate levels must be kept to a minimum. Forging direct links between researchers and policymakers can initiate dialogue, reducing the time it takes until the findings can be factored into the problem evaluation process. Otherwise, the incubation period, before research can influence the policy context, will be one of several years.

Admittedly, there is often a conflict between the academic and the social utility of research, a point that was made several times in the course of the Seminar. The assessment of academic utility is based on formal criteria, while social utility is assessed on the basis of the relevance of research. To end this conflict, a culture of exchange, in which people move from one field to another, must be fostered; i.e. professional mobility and new lines of inquiry should be encouraged. By setting up forums in which each can present its work, the two spheres of research (academic and policy), which usually ignore each other, could be reconciled. From this standpoint, Europe lacks an equivalent to the Transportation Research Board. Attitudes have to change, starting in the academic world, where being both a faculty member and a consultant is frowned upon. With this in mind, the gap that separates professional and scientific journals would have to be narrowed.

(b) Evaluation

No sooner are a study’s findings mentioned than the subject of its evaluation comes up. This is a sensitive subject, given the gulf that can separate scientific or academic evaluations, which are based on formal criteria, and the practical relevance of the conclusions of a study to solving a problem or set of problems. Academic evaluation can be criticised for focussing too much on formal criteria, which do not always guarantee a study’s relevance, i.e. what it tells us and how relevant it is when it comes to effecting change in the particular field of application. As far as transport is concerned, a study’s input in decisionmaking is certainly more important than any purely intellectual appeal it may have. This is why evaluations of research quality cannot be left solely to the academic community. However, while it is possible to verify the scientific relevance of an econometric forecasting model in the medium term, when it comes to issues such as optimum infrastructure pricing or environmental economic theory, which have an irreversible impact on decisionmaking, then it is still very difficult to assess the relevance of certain conclusions. In any case, research findings should be disseminated so that they can be discussed widely outside the immediate circle. Wider dissemination could usefully supplement direct quality control by the commissioning customer and indirect quality control by the research community. Evaluation can indeed be a sensitive subject since it can encourage conservative attitudes and the status quo. What is really needed, if attitudes and approaches to analysis are to change, is, on the contrary, broad-based evaluation. This is the only way to avoid self-evaluation. Where there is a public institute, it is essential that evaluations be conducted not by its own staff but by specialists who are not involved in any internal disputes. Lastly, research programmes should be evaluated, as well as the actual research conducted.

To assess research quality, international evaluation is needed. However, to avoid the situation in which research is assessed only after it has delivered its findings, with the risks of disappointment that this entails, it is advisable to:

- define clear key stages at which reviews can be carried out at regular intervals;

- ensure that the research is monitored very closely;

- involve the client right from the beginning; and
- establish criteria for selecting research organisations working in similar areas to evaluate the end product.

A review culture, bringing together funding sources and research suppliers, should be developed. The tendency of universities to allow critical review only once work is complete is counterproductive.

It is essential that people other than the commissioning customer take part in evaluations. This second line of indirect control by independent third parties, generally from the international community, supplements direct quality control by the commissioning customer. Evaluations should cover not only scientific quality but also the relevance of the research to the transport sector.

Furthermore, research findings should be presented to the wider scientific community, which would then be able to assimilate the main results rapidly. At any rate, the evaluation process should be factored in from the outset and an evaluation climate should be fostered as an integral part of the research process. Evaluations can be very costly, hence the need to define strategies clearly. Foreign researchers who are recognised experts in this field could be called in for this purpose. Clearly, a budget should be earmarked from the outset for this purpose: evaluations cannot be conducted on a voluntary basis alone. Provision should be made for paying those conducting the evaluation and for covering their expenses.

(c) Dissemination

Researchers find it difficult to break out of their isolation, all the more so because often they do not really think that their work has an impact. They may lack the necessary communication skills to explain their work. The readership of scientific papers is small, a state of affairs that seems unlikely to improve in the near future. All of the above points are related to the communications policy of the institute to which the researcher belongs. The best approach would be for research laboratories to employ qualified communications staff to disseminate the operational conclusions of their research work to the media and opinion-formers.

There is real potential for communications in scientific research: the public is increasingly aware of the implications for society and decisionmakers are increasingly qualified. Hence the need for specialists in communications problems to disseminate results. Moreover, since the scope of decisionmaking is wider these days, the researcher’s ability to analyse and synthesise is valuable to policymakers, even if the actual decision still calls for a policymaker’s intuition (where there are factors that go beyond pure economic logic). We should also bear in mind that research taken in isolation can never explain more than a few aspects of a global process. The knowledge that flows from one piece of research is relatively small, compared with the stock of knowledge required to obtain the overall understanding that the problem requires. This is why it takes time for research to become relevant. It could also make it more difficult to recognise the value of a piece of research and therefore could affect whether or not it is publicised beyond the circle of insiders. Evaluation, it should be noted, is a key factor in changing mentalities.

It is vital to think about disseminating results when defining research objectives. Researchers should be aware of the importance of practical applications and the dissemination of their work at a very early stage in the process. This issue also concerns institutions, inasmuch as research organisations are responsible for publicising the quality of the work that they conduct. Four basic principles should be priorities for dissemination:

- Target groups, to which the results of research should be disseminated, must be defined;

- Not everything should be disseminated, only essential information should be selected;

- A separate budget for dissemination is essential, otherwise those communicating the information will be too close to the researchers and not close enough to decisionmakers;

- Preliminary results should be published, without waiting until the final results are known to disseminate conclusions.

By staying in constant contact with opinion formers, i.e. the media, it is possible to build up a consensus on research conclusions. Newspapers, television and open forums can be springboards for getting research findings across to the public. In fact, it may also be important to take a hands-on approach to some of the means of informing the public debate in order to raise the standards of that debate. It is clear, too, that private sector actors, such as industrialists, have a duty to disseminate the research carried out by their companies. While it is not necessary to disseminate all research findings, industrialists nonetheless have a duty to carefully select the information that should be released for public debate. The process of translating research into material for public debate calls for specialist journalistic skills. The content should be concise in order to avoid overloading people with information but, in general, those providing information should be willing to discuss their research results. Preferably, information should be disseminated directly through researchers and not through ministries.

3. New research directions

Whenever researchers approach a problem they tend to simplify it, which leads them to produce simplistic solutions to the problems. While this is not a widespread trend, it is a trap into which any researcher may fall. For the participants at the Seminar, research should focus on solving problems one step at a time. In contrast to pure research scientists, consultants have to talk to their customers and identify an approach suited to the latters' requirements. Without in any way wishing to draw comparisons between consultancy and basic research, it would be fair to say that each is suited to different circumstances. What matters most is that the two worlds meet and communicate. Both are operating in a context in which the search for new methodological tools and reliable data on transport is the overriding concern.

(a) New methodological tools

Transport policy in European countries has seen very real changes in recent years. It is now addressing the issues of infrastructure pricing for all modes, sustainable development, the privatisation of certain public services, 'traffic calming', improving public transport, etc. This list is not exhaustive and European transport policy offers many other opportunities for multidisciplinary work. In contrast, some, not to say the majority, of the participants at the Seminar thought that the methodological tools used had not changed at the same rate. The implications of the prevailing research paradigm are that choices are irreversible and that the order in which decisions are implemented does not influence the outcome, simply because the concept of equilibrium has left its mark on the research community. This is a tempting concept and one that pervades all the models, but it is misleading, since it does not really represent reality. In real life, choices can vary, lag times and dynamic processes – phenomena not frequently addressed by researchers – are important. It can be argued that simplifying economic theory does not work, we should start again with new instruments, based on tools from different disciplines, that will enable us to take into account the asymmetry of effects, reversibility, the importance of sequence, time lags and cumulative phenomena. To be effective from a policy standpoint, new dynamic concepts must be developed. Research into process, not end-states, should be developed and would require a fundamental shift in the type of data collected and the procedures used to analyse them. The foregoing warrants a radical rethink of how research is organised. Among the new directions, today we should be focussing more on the problems of redistribution than maximisation, or on developing real-time continuous monitoring, not just *ex post* monitoring. This said, the integration of the different disciplines is not easy – the scientific community has been proposing integration for years now without any very positive results – but it is a sufficiently promising area to warrant allocating resources to it.

(b) Appropriate statistical data

One point strongly emphasized during the Seminar was that the limited statistical data available made it extremely difficult to carry out effective and meaningful research. With the deregulation of transport and the regionalisation of certain decisionmaking processes, the situation is getting worse. Although some data are too detailed or too expensive to collect, the gaps in statistical coverage are too large to be ignored. Some transport policy decisions cannot be evaluated without at least a basic statistical apparatus. Governments have a duty to address this issue and to take vigorous action, for example, when a sector is about to be deregulated, to request operators to supply statistics. The data must be made available and must not be allowed to become proprietary. Generally, it is apparent that decisionmakers will have to be convinced that they should invest money in data collection.