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**TRANSPORT TRENDS AND 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 THE 16<sup>TH</sup> ECMT INTERNATIONAL SYMPOSIUM  
ON THEORY AND PRACTICE IN TRANSPORT ECONOMICS**

**“50 YEARS OF TRANSPORT RESEARCH:  
EXPERIENCE GAINED AND MAJOR CHALLENGES AHEAD”  
Budapest, 29-31 October 2003**

The ECMT held its 16<sup>th</sup> International Symposium on Theory and Practice in Transport Economics from 29 to 31 October 2003, in Budapest. The theme of the 2003 Symposium was “50 years of Transport Research: experience gained and major challenges ahead”. Some of the issues debated by the more than 300 participants attending the Symposium were: the link between transport growth and economic growth; possible options for deregulation of the transport sector, or more specifically, whether regulation and competition were substitutes or complements; and the link between transport and environmental sustainability.

The following is a short summary of the discussions which took place at the Symposium.

## **1. TRANSPORT AND ECONOMIC GROWTH: WHICH INTERDEPENDENCIES?**

The first issue addressed at the Symposium was the impact of major investment in transport infrastructure on economic development.

### **1.1. Investment in transport infrastructure, a growth factor?**

#### ***1.1.1 At the level of the economy***

There is no disputing the fact that any new substantial investment in transport infrastructure has a knock-on effect which creates more aggregate demand in the economy. When aggregate demand rises, aggregate supply rises with it and, consequently, output increases. In order to keep pace with higher output, employers take on more employees, thus helping to generate a salary surplus that will, in turn, lead to additional spending. This new spending prompts a further increase in output and salaries, but also in investment to keep pace with new demand. The mechanism that has just been described is the multiplier effect of investment on which Keynes laid so much emphasis. According to this principle, new spending generates additional income which, in turn, will translate into consumer spending and investment and thereby fuel a further increase in production.

The Symposium did not dispute that this reasoning was applicable to major infrastructure projects. Nevertheless, there are a number of qualifications that warrant mention. The first is that it is by no means certain that spending on transport infrastructure is the area of expenditure which produces the greatest induced effects. Other types of spending are likely to have an equally comparable, if not an even greater, impact on output growth and therefore on job creation. This is one qualification which should always be kept in mind. Secondly, if the increase in expenditure to finance investment produces a budget deficit, then borrowing to finance that expenditure will generate competition with other borrowers, who will either be crowded out or will have to pay a higher rate for their own finance. This is one of the contradictions of the theory, which disregards the fact that a deficit leads to a rise in interest rates in the long-term. It may well be that the government budget is in balance, in which case this objection ceases to be so significant.

A last point to note is that borrowing to fund investment lays the burden of debt repayment on the shoulders of future generations: while borrowing certainly improves the situation on the employment front in the short term, it does so at the expense of a long-term improvement.

As these points raised in the course of the discussions at the Symposium show, investment in transport infrastructure in order to maintain demand calls for certain precautions to be taken. These include having a balanced budget for government expenditure at aggregate level and ensuring that investment in transport is the most appropriate use of resources.

### ***1.1.2 At the local level***

Is investment in transport infrastructure likely to promote local development? In this regard, it is essential never to lose sight of the fact that transport infrastructure cuts two ways: it can import competition as easily as it can export it. Regional industries may be weakened or falter in the new wind of competition. It is only regional industry's capacity to turn new opportunities to its advantage that will dictate whether the regional labour force can expect an improvement in its situation. Indeed, it is through its ability to mobilise capacities such as research and development and sources of finance, and to consolidate local operation through the provision of competent administrative services, that a region can reap the benefits of new transport supply. By reducing generalised transport costs, the new transport supply can enlarge the market area of local industries, but the same can be said for any point of access to the new infrastructure. For instance, it has been noted that industries are set up close to motorway access roads. So, when any major new section is brought into service, it is to be expected that it will attract industries. Here, too, these may be firms which relocate in order to take advantage of new opportunities: there will only be a net benefit if the economic gains provided by the new infrastructure take the form of an increase in productivity for the economy as a whole. Where this is not the case, one region's gains may be offset by another region's losses.

Another factor which should not be overlooked is the fact that new infrastructure generates additional mobility: this is the induced mobility phenomenon. Since governments in Europe share the objective of environmental sustainability, the wider issue which now arises is the problem of decoupling economic growth from transport growth. New infrastructure construction certainly is not conducive to decoupling the two.

## **1.2 Decoupling is not straightforward**

### ***1.2.1 Freight transport growth factors***

In the freight transport sector, globalisation and the global economy are powerful growth factors for international trade. The interconnection of markets and information on a global scale which the Internet permits are behind that growth. Integration into the global economy is the aim for practically every country, regardless of its stage of economic development. As a result, international transport is growing faster than national transport and the trend is towards an increase in average distances travelled; another phenomenon we are currently witnessing is growth in transit traffic.

In Europe, the end of Communism and enlargement of the EU have brought about an unprecedented surge in foreign direct investment in new ECMT Member countries. This new division of labour has led to an increase in international trade. The fact is that the vast bulk of this trade is by road. It is the road freight transport sector which has benefited from these new developments in Europe. More flexible and offering higher quality services which perfectly match the expectations of freight forwarders, road freight transport has cornered this growth in

trade. This trend seems to be irreversible in the short term. What is true on a Europe-wide level is also applicable at the national level, where road freight transport is winning market shares from its competitors. All of this makes talking about decoupling -- in the sense that transport might grow at a slower pace than the economy -- seem extremely difficult, not to say impossible, in a regulatory, fiscal and institutional context that remains unchanged.

Later in the course of the Symposium, possibilities for policies based on charging were discussed and are reported in section 3.2. They are based on ways of increasing transport productivity. It is worth noting that, in the CEECs, the new economic developments have led to a decline in freight transport, in which the rationalisation of production processes has been a contributing factor. At the same time, road transport has won very substantial shares of the market from its competitors. There has thus been decoupling of a sort, but perhaps not with a reduction in environmental damage overall.

It is important to note this trend in the CEECs, where, although there has been a decoupling of transport growth from economic growth in absolute terms, relative decoupling from environmental nuisances proved possible only with vehicles that had lower emissions of environmental pollutants. While it seems impossible to influence modal split in the short term, absolute decoupling could be obtained by achieving better productivity levels from transport system architecture and relative decoupling by better technology

### ***1.2.2 Passenger transport growth factors***

In the passenger transport sector, the Symposium showed that perceptions and cultural heritage were strong determinants of behaviour. The fact is that we have created an environment which encourages the use of the car, which is highly prized by society. It should therefore come as no great surprise that there has been a steady increase in car ownership and that many households own more than one car. To change these perceptions we shall first have to overcome resistance. The Symposium discussed ways of doing so through charging, taking the London congestion charging scheme as an example. The discussions on this issue are reported in greater detail in section 3 below. Before that, the Symposium discussed the interdependencies between competition and regulation.

## **2. COMPETITION AND REGULATION: SUBSTITUTES OR COMPLEMENTS?**

### **2.1. Substitutes**

The Symposium took note of the various examples of deregulation in the transport sector throughout the developed world. In the air transport sector, regulatory changes had enabled a reduction in fares of at least 50 per cent by enhancing competition and facilitating the entry of new companies on the market. In the freight transport sector, enhanced competition in road transport had enabled a reduction in prices of over 40 per cent in Ireland, for instance. The experts at the Symposium unanimously acknowledged that the introduction of greater competition was in the interest of consumers on the busiest routes. Moreover, it was with the

interests of the end-consumer in mind that the shift towards deregulation of the basic sectors and the transport sector in particular was first initiated. It was accompanied by a diversification in supply, as each company sought to make its mark and differentiate itself from the competition. This meant that, as well as cheaper services, a greater range of services was provided. At the same time, stiffer competition on the various segments of the market pushed companies to seek productivity gains. Competing firms thus became more efficient and the economy as a whole gained by becoming more competitive.

Judging from the many examples given in the course of the Symposium, one can safely say that it is possible to reduce regulation in the economy and that, in most cases, doing so benefits the end consumer. This said, not all the experts at the Symposium agreed that this always and definitively brought gains in every situation. Furthermore, there was still a role for the public authorities in the deregulated sectors, if only to supervise them. In this regard, competition and regulation are complementary.

## **2.2. Complementarity**

### **2.2.1 *Less populated areas***

While on busy routes there is no doubt that greater competition is positive, in less populated areas or tight markets, the trends are less convincing and debatable. In some cases, air transport between less popular destinations had been disrupted, while in others organisational gains helped to maintain services but with smaller airplanes. As regards public urban transport by bus, the overall situation in the United Kingdom had given rise to a great deal of criticism but the level of subsidy was very appreciably lower after deregulation. So, it would seem that the level of service can only be maintained with subsidies in cases where the innovative dynamic expected from deregulation has not come up to expectations.

### **2.2.2 *Firms as the main actors***

One constant feature of deregulation, which appears to have been borne out by experience, is the trend towards concentration in the sectors concerned. The price reductions conceded can sometimes amount to more than the productivity gains which can be realistically achieved and, where that happens, the sectors concerned see company failures along with a trend towards concentration. This is what prompted some of the experts at the Symposium to say that the main actor is not the market, it is the firm. From competition, we may be moving towards different forms of oligopolistic market, and it can be said that this is a trend which has been noted in many of sectors which have been subject to deregulation. This issue raises the question of the importance of regulation and, hence, of the regulator himself.

### **2.2.3 *The role of the regulator***

The regulator's tasks are both numerous and extremely important, namely: ensuring that there is no abuse of dominant position, that all consumers receive equal service, that no excess

profits are extracted at the expense of end users and that asymmetries in information do not lead to a quasi-monopoly rent situation; ensuring service continuity and availability at all points; ensuring that research in technology can be amortized and that there is a reasonable return on capital; maintaining conditions in the sector close to those of the competition, etc. The Symposium reviewed some of the basic requirements in this regard. First, the regulator has to be independent and free from any political pressure. However, this is easier in theory than in practice in that a regulator has to be appointed. Should the regulator be appointed by the Prime Minister or by Parliament? To whom should the regulator be accountable? One way to ensure the independence of the regulator would be to make the term of office longer than the term of government. However, even this does not ensure total independence. The Symposium took note of the fact that in this particular area thinking clearly had to progress.

The mission of the regulator could be specified in the constitution so that no pressure could be brought to bear to influence the regulator's course of action.

It was also important to ensure that the regulator could not be subject to capture by the industry which he or she regulated. This was where asymmetries in information came into play. If the regulator did not have adequate expertise to remain aloof from the inevitable lobbying by industry, he or she would not be in a position to evaluate the situation objectively. The experts at the Symposium maintained that the regulator should not be too close to the industry he or she was responsible for regulating, so as not to be vulnerable to capture by it and to be able to apply to it lessons and experience gained in other sectors. This was the concept of "yardstick competition".

As regards the scope of the relationships between the regulator and industry, contracts should not be over too long a term, in order to prevent the sector from becoming stagnant for a long period. In addition, contracts should leave room for innovation, which stimulates progress. Agreements run the risk of hemming the parties into situations which no longer reflect the degree of technological innovation or cyclical and structural changes in the market. The regulation of a sector as international as the transport sector should be designed to do away with borders and should be technology-driven, given the progress in this area. In some instances, the participants at the Symposium highlighted the possibility of having European regulators, since borders were increasingly becoming a meaningless concept at the European level.

A last point to note is that the regulator should be able to fund his or her work from industry resources; again, so that he or she is not subject to political pressures and in order to guarantee independence.

This overall discussion on the role of the public authorities at the Symposium extended to another area of study: environmental sustainability.

### **3. TRANSPORT SUSTAINABILITY**

#### **3.1. The part played by modal split**

Effecting a modal shift towards rail has been constantly on the European policy agenda, more specifically in the freight transport sector, for the past 30 years or more. The record is a disappointing one. In long-standing ECMT Member countries, for instance, rail's market share declined from an average of over 25 per cent of inland transport to less than 15 per cent over the period 1980 to 2000. Although the facts clearly show otherwise, politicians still sometimes persist in setting growth targets for the modal share of rail transport.

What prompts policymakers to do so is that the environmental performance of rail has been assessed as being better than that of road transport. However, this analysis is now less accurate and will become increasingly so: advances in HGV technology along with more stringent requirements for vehicle certification are such that road transport vehicles will clearly be more environmentally friendly than diesel traction engines. Where electric traction is used, the question we need to ask is: what is the source of its electrical power? If the source is thermal power, then the environmental evaluation, in terms of greenhouse gas emissions, is not necessarily in rail's favour and if the source is nuclear power, then the question of waste management arises. In view of this, the participants at the Symposium forcefully made the point that, while the environmental assessment of railway traction engines was still better than road for now, it would not necessarily be so in future.

Since the environmental assessment no longer appeared to favour one mode over another, in the future there would be steadily fewer grounds for concentrating on the modal share of rail. Specifically, it was stated in the course of the Symposium that the modal share of rail should not be an issue of concern. What emerged more clearly was the need to allocate the costs of rail services and segment the markets so that services would be supplied only for growth markets. Rail was not in the business of providing a universal service, rather, just like any other service provider in a competitive market, namely, the freight haulage market, it should be concentrating on products that brought a profit. The profitability issue was a tricky one, since given the degressive cost structure of rail, marginal cost pricing showed losses. It was therefore difficult to baldly state that only profitable services were suitable. Nevertheless, it was possible to single out the main centres of loss and withdraw from them.

While focussing on a specific modal split was not warranted, one issue remained valid and that was the effect of different transport prices on modal development. The example of roads and congestion tolls was considered at the Symposium.

## **3.2. The role of charging**

### **3.2.1 *The London scheme and lessons learned from it***

The Symposium primarily highlighted the role that can be played by transport prices which reflect environmental and congestion costs more accurately. The congestion charging scheme recently introduced in London attracted a great deal of attention. The (£5) toll charged to enter the city centre reduced road use by private cars by approximately 15 per cent. The main winners from the scheme were bus services and bus users: more passengers could be carried and journey times were shorter. Somewhat harder to estimate was the impact on the retail trade, since it appears that there was a drop-off in the number of visitors to the central London area, although the decline could prove to be temporary. Clearly, the reduction in congestion was greater than the Government had expected, with the result that revenues from the scheme have not been as high as hoped. The main lesson to be learned from the scheme is that traffic is more price-elastic than initially thought. This holds out the possibility that transport trends can effectively be influenced through appropriate charging. Practice in so doing is lacking, although there is no shortage of theories. The main obstacle standing in the way of more widespread use of the moderating role that prices can play is public acceptance. Identifying the winners and losers of a strategy aimed at giving a greater role to incentive pricing is one of the major challenges ahead. The redistributive effects of appropriate pricing are perhaps regressive, but with an overall policy which aims at developing alternative methods, while giving due attention to a wide range of mutually dependent methods to counter such effects, gains could be made practically all across the board.

Again with regard to the London road charging scheme, the point was made that measuring congestion costs against free-flowing traffic conditions as the baseline makes no sense; there is an optimal, socially desirable level of congestion. This is what balances out the additional utility for the marginal user and the level of cost generated by that user's trip. Similarly, the revenues generated by congestion charging are the monetary expression of time savings. They cannot be double-counted as times savings and resources. It is nonetheless true that congestion charging can achieve a reduction in congestion and in environmental damage and, at the same time, generate resources. It is possible to win across the board if an integrated strategy is put in place aimed at offsetting the regressive effects on revenue distribution. This could be achieved by reinvesting the revenues earned from public transport which enables the least well-off to travel without having to use the car, which has become particularly expensive.

Would congestion charges make the attraction exerted by urban areas even stronger? If congestion charges are applied to the entire urban area, no single area is favoured and transport becomes more expensive throughout the city. This could well exert a stronger attraction, given that quality of life would also improve with city-wide congestion charging. In the case of cordon tolls, there might be reason to fear that, unless companion measures were implemented, the toll zone could eventually become gradually deserted. Housing and businesses might move to the



city outskirts, where public transport has immense difficulties in providing services for substantial fringe populations.

The optimum toll charge was not explicitly discussed in the course of the Symposium, other than to state that it should be based on marginal social costs. In response to the argument that marginal social costs are difficult to evaluate and vary with time and space, the participants at the Symposium made two points: first, that the price of a good is never the same everywhere, it is subject to variation; and second, that advances in electronics would shortly enable very accurate allocation of the costs generated.

In the freight transport sector, too, one might also envisage giving a greater role to transport prices which incorporate environmental and congestion costs. However, applying these principles to an activity which spans the whole of Europe must be conducted from a perspective that is similarly European, for reasons relating to interoperability, *inter alia*, but not just for that reason. Gaining in economic efficiency by seeing that the international authorities play their full role is one of the major challenges in today's context.

### ***3.2.2 User charges as an instrument of efficiency***

If all costs are allocated to those who generate them, economic efficiency will improve, as this will prevent over-consumption of transport. This is why some of the experts at the Symposium took the view that charging the true cost was an instrument which contributed to overall economic efficiency rather than countering it. Just because external costs were not measured and allocated did not mean that they did not cause harm to the economy. By factoring these costs into the decisionmaking process of the various actors -- by making them visible -- we would gain in efficiency. This was why decoupling through charging did not run counter to economic growth, even though some experts took the more conventional view that any increase in transport prices would be detrimental to the international division of labour. Others considered that the international division of labour should not be subsidised through flawed transport pricing.

### ***3.2.3 User charging for basic services***

With recent progress in electronics and GPS technology, there was the real possibility in the near future of setting up road user charging systems which closely reflect the marginal social cost of road use on all roads. On congested infrastructure, funding could be raised for new infrastructure on the most frequented routes. Another option which could then be a possibility would be a two-part charge, with a flat charge to cover the fixed costs of infrastructure and a variable part which would cover marginal costs. In this way, road would finance its own costs. Thus, the idea that emerged in the course of the Symposium was that road could be considered as a basic utility which would self-finance its own maintenance and development. In most developed countries, road usage generated more resources than it needed to finance its own maintenance and development, but that was not the case everywhere and particularly in the new ECMT Member countries, where maintenance needs were high. Considering road as an essential

basic service like water or electricity and reassigning to it the revenues it generated -- breaking with a unitary budget -- was one possible development that, in the Symposium's view, could not be dismissed. Should there be a surplus of revenue over expenditure, that surplus could be allocated where it would maximise the socioeconomic return on the capital freed up. That, at any rate, was one of the points of view expressed at the Symposium.

From this standpoint, the issue of public-private partnerships for the financing and construction of major roads was stressed. Among other things, it was pointed out at the Symposium that the increase in subsidies needed to finance the least profitable projects was not much higher for private sector participation than it was for the public sector. Adding to this the fact that the private sector is generally more cost-effective in running the operation, and therefore cheaper, it is hardly surprising that private sector participation is sought for projects with low rates of internal return. This was probably the most cost-effective solution.

#### **4. CONCLUSIONS**

The possibilities offered by electronic tolls and GPS are such that transport prices close to the environmental and socioeconomic optimum are a possibility. It is safe to assume that the economy will not suffer, even if some trade-offs should be expected for distant regions where access to the centre would cost more. Economic decoupling of transport from overall growth could then be achieved and, at the same time, the impact of this decoupling could be enhanced through the advances in technology that the appropriate standards would disseminate throughout the economy. Congestion would also be prevented, while at the same time resources required for infrastructure upkeep and development would be freed up. Separating road infrastructure from the general government budget and allocating to road -- just like any other basic service -- the resources raised from road, would seem to be one major change which should be promoted. The thread running through all of these points, as indeed through the Symposium's discussion on the functions of a modal regulator or a regulator specifically for the transport sector, was the European dimension. Deregulation clearly could not be regarded as a panacea and it was effectively through the exchange of experiences that imaginative, integrated solutions could be found.

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