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EDITORIAL

The quality of transport and related infrastructure is essential for the smooth running of the economy. It is therefore important to ensure that transport policy is correctly defined –particularly as the amounts of money at stake are considerable and the potential effects can only be assessed over the very long-term.

What are the most appropriate selection criteria for transport infrastructure projects? Should rail transport take priority over road transport due to environmental considerations? How can rail transport be optimized? Is there room for independent assessment in a decision-making process that remains highly political?

The answers to these questions are sometimes surprising. The extremely high level of demand for automobile transport is a factor that needs to be taken into consideration. The view that modal shift is an appropriate means of combating the greenhouse effect is illusory. This policy is very costly and ineffective: it would make greater sense to devote more resources to environmental research.

Christian de Boissieu
Executive Chairman of the CAE

Transport Infrastructure, Mobility and Growth

Report by Michel Didier et Rémy Prud'homme

Economic growth is closely linked to mobility. Inadequate transport infrastructure constitutes a physical brake on growth. Great discernment is nonetheless required in terms of the choice of new infrastructure: financial commitments run to tens of billions of euros and any mistakes represent a waste of resources with negative implications for national wealth.

Michel Didier and Rémy Prud'homme have examined French transport policy on this yardstick and have drawn upon their analysis to submit a number of recommendations to the public authorities: to apply the principle of economic rationality more effectively, to devote more resources to environmental research and to optimize the rail transport network. Their report was presented to Mr Dominique Perben Minister for Transport, Infrastructure, Tourism and the Sea on 27th March 2007 during the CAE (French Council of Economic Analysis) plenary meeting. This letter, which summarises the report, was written by the CAE permanent team.

Transport infrastructure has major potential implications for the economy: it fosters the mobility of individuals and goods and, by the same token, the development of trade and gives persons access to broader territories. In this respect, it is a vital ingredient of growth potential. It is also gives rise to a large number of external effects, both positive and negative. The twofold issue of the decision concerning the amount of investment to be ploughed into transport infrastructure and the selection of the most suitable projects is therefore crucial and the economic stakes are considerable.

Transport infrastructure always involves the public sector, both on a national and local level. It is consequently a key component of economic policy. Public authorities are faced with two sorts of dilemma. The first concerns the amount of investment to be allocated: are the amounts of money channelled into infrastructure too high or too low? The second concerns the selection of new infrastructure projects in a period of strong fiscal constraint. The complexity of these issues is heightened by the fact that major projects take a long time to complete (between ten and fifteen years) and the consequences are felt over the very long-term (several decades). The choice of infrastructure is therefore a medium/long-term decision that should not be directed by short-term economic considerations.

The authors have focused their analysis on the specific nature of transport infrastructure: i.e. to facilitate mobility. They draw attention to the fact that the objective should always be to ensure the "sustainable mobility" of persons and goods. This means the selection of infrastructure that will make it possible to maximise economic growth potential, whilst also proving compatible with the imperatives of the three components of sustainable development: economic, social and environmental.

The report points out that French transport policy is heavily geared to three concepts: increased competition, decentralisation and the "modal shift" policy. The objective of this policy is to transfer road-based resources to "alternative means of transport". The modal shift policy is justified by the reduction of transport-related problems, such as accidents and the degradation of the environment, which concern road transport –which is, by far, the most frequently-used means of transport. One of the key issues addressed by the authors is to ascertain how far this policy can be pushed without limiting the mobility of persons and merchandise and without undermining economic growth and employment.

The modal shift policy is currently driven by mounting environmental concerns and the target of achieving a fourfold decrease in greenhouse gas emissions by 2050. The authors are of the opinion that this objective should be weighed up on economic calculation criteria. This does not imply that one particular infrastructure project should in principle be chosen rather than another. It simply means that the attainment of objectives which are crucial for our society requires appropriate evaluation of the externalities of greenhouse gas emissions in the assessment of infrastructure projects. Another constraint that no government can afford to ignore pertains to public finances. The conclusion that the authors draw from their analysis is that present transport policy should be re-examined both in terms of choices and methods.

Infrastructure supply and demand

The breakdown of physical quantities transported is currently as follows: road: 79%; air: 12%; rail: 9%. The key factors determining transport "demand", notably the mobility of persons and the transport of merchandise, are heavily influenced by differing social and economic considerations closely linked to lifestyles and to productive system structures. As a result, any changes in logic will inevitably be gradual. Regarding the transport of goods, 88% of the quantities transported are accounted for by domestic (France-France) deliveries and approximately half the distances involved are less than 50 km. Demand for transport of goods is complex and multi-faceted because it is heavily geared to logistics. Reliability and goods safety requirements take precedence over speed.

The authors note that, in terms of supply, the goal of achieving zero congestion and perfect fluidity of traffic flows is unattainable. The reason for this is that congestion results from equilibrium. Infrastructure choices should consequently be geared to the pursuit of optimal congestion rates. The authors also stress the necessity of maintaining road and rail networks, the cost of which should be taken into account when making investment decisions. They reveal a bias (a so-called "inauguration effect") in favour of new projects rather than maintenance.

The greenhouse effect

Three categories of transport-related social cost are examined: accidents, pollution and the greenhouse effect. The last two criteria are essential, given the environmental cost considerations that are being put forward, on an increasingly frequent basis, in a bid to block the construction of new infrastructure or to influence choices in favour of one particular form of infrastructure or means of transport over another. The relevance of these criteria is analysed in detail. The authors refer to the progress that has been made in terms of reducing atmospheric pollution, as a result of strict regulation, but draw attention to the potential scale of the cumulative effects of such pollution over the long-term. A detailed breakdown of the contribution of transport to the greenhouse effect is then given. In France, the transport sector accounts for 21% of greenhouse gas emissions and 25% of CO_2 emissions. These figures should be put into perspective as CO_2 pollution linked to energy production is far lower in France than in most other European countries, due to the high level of nuclear-based energy production. Greenhouse gas pollution is a problem facing the entire planet. On this basis, the most appropriate solution would be to do everything possible to concentrate efforts on areas where the marginal cost of reducing pollution is lowest. This basically means developing countries. As developed countries are responsible for CO_2 accumulation, they have a debt to the planet that they ought to honour. The authors conclude that developed countries should consequently pay for the reduction for greenhouse gas emissions, but that the reductions should be concentrated in developing countries.

The authors do not believe that the best solution for reducing greenhouse gas emissions lies in the massive transfer of resources to public transport or rail transport. The shift is costly and reduces mobility without doing very much to bridle the negative effects on the environment. In addition, it requires substantial financial resources that would be better employed in research into means of combating the greenhouse effect. The most effective way of contending with the greenhouse effect is to reduce emissions and increase the absorption of greenhouse gases. This goal can only be achieved via fundamental and applied research and by product and process innovation. It might also involve an upward adjustment in the estimated cost of carbon emissions relative to the EUR 100 per tonne figure contained in the Boiteux Report. Unduly high public sector investment to support modal shift would deprive the French government of the necessary leeway to promote technological progress in the field of the environment. This explains why the authors insist upon the fact that economic calculation is the most reliable method for ensuring that the right decisions for the future are taken – provided, of course, that tutelary values are evaluated correctly. Failing this, the risk is to have economic slowdown and climate change.

Modal shift

The authors carry out a methodological assessment of the expected costs and benefits of the modal shift policy. The modal shift policy stems from the fact that road transport is the means of transport that causes the highest level of pollution, in terms of the negative effect on the local environment, noise and CO_2 emissions. Hence the opinion that a well-advised transport policy ought to discourage the traffic of road vehicles for private use and encourage alternative means of transport, notably rail. Whilst the logic of the concept might appear irrefutable, it raises numerous problems at a practical level. Firstly, the policy does not correspond to spontaneous vehicle-user behaviour patterns (motorists account for 90% of trips) and for deep-rooted reasons (the organisation of urban districts, the evolution of productive systems). Secondly, other policies are sometimes incompatible with the objectives of modal shift. For instance, town planning programmes play a role in the extension of towns and out-of-town developments and, by the same token, increased recourse to vehicles for personal use. Two examples of decisions or projects inspired by the modal shift concept are analysed: the Seine-Nord canal and the Lyon-Turin tunnel. Thirdly, in practice, the potential scope for substituting one means of transport by another is relatively limited, as this is a matter of personal choice and therefore cannot be enforced.

According to the authors, the billions of euros allocated to certain major infrastructure projects would have been far more beneficial to the environment if they had been invested directly in environmental research into issues such as carbon sequestration and clean engines. To give an idea of the amounts of money involved, an absolute

maximum of EUR 1bn is currently spent on environmental research and only EUR 100m or so of the total is invested directly in resources to reduce the greenhouse effect. The Seine-Nord project alone accounts for EUR 4bn and the Lyon-Turin project for double this figure.

Funding

The question of transport infrastructure funding is addressed. The construction and running of transport infrastructure often requires public sector funding with negative consequences for public spending, the budget deficit (or taxation) and public debt. Infrastructure projects therefore vie with other funding requirements, such as welfare spending (pensions, healthcare), research and education. Future funding constraints and the possible ways of lightening them – notably via the introduction of a price scale or private sector contributions– thus constitute key issues concerning not only transport, but also social equilibrium as a whole. Public/private sector partnerships are pinpointed as instruments that could pave the way for the optimization of funding constraints and improved project governance. Detailed analysis of these factors is also provided in the complement drawn up by Dominique Bureau.

The report concludes with ten recommendations aimed at improving the choice of transport infrastructure. The key proposals are as follows:

To give per project cost-advantage analysis a central role in infrastructure policy-making, by taking adequate account of environmental considerations, but without any ex ante bias in terms of modal choice. A revision to the environmental cost estimates contained in the Boiteux Report is possible –or instance, for the purposes of making sufficient allowance for transport externalities and the principle of precaution.

The authors suggest creating a transport system strategy and assessment agency to spearhead the optimization of the transport system by conducting the necessary analysis and by approving, comparing and publishing the results. The agency might either be a new creation or the result of a (fairly extensive) overhaul of the French Transport Infrastructure Funding Agency (AFITF).

A drive to clarify responsibilities and to develop a system that is more propitious to optimal infrastructure choices needs to be undertaken. It is crucial that the government retains a key role – particularly as far as the road network is concerned– in infrastructure planning, if severe congestion on some major routes is to be prevented over the next ten years or so.

The authors also suggest further appraisal of the Lyon-Turin and Seine-Nord projects, but recommend the postponement of the effective launch date commitment for as long as the socio-economic profitability remains extremely low and the funding of these projects can only be ensured through an increase in public debt.

In a similar vein, a certain level of priority needs to be given to the maintenance of existing networks, especially in the sections with the strongest traffic flows, before undertaking costly new infrastructure projects.

Optimisation of rail transport

Five main solutions for optimizing rail transport are recommended:

• public sector choices in terms of rail infrastructure (and the strategy of the various players) ought to be focussed on segments where rail transport offers comparative attractions: High-speed trains (TGV), suburban trains and urban rail transport, the transport of heavy or dangerous goods on certain routes encumbered by heavy freight traffic;

• on the flip side, the specialisation drive implies a reduction in the size of the network, given that the operating and maintenance costs are not justified by the service provided;

• the creation of a rail transport competition regulatory authority is strongly recommended. Competition between rail transport operators needs to be actively encouraged, as has been the case in other regulated sectors;

• the main field of the rail transport industry should be differentiated in terms of their accounts and management, and their results should be made public in order to ensure greater transparency of their respective costs and financial equilibrium;

• regarding freight, priority should be given to the improvement of management and quality of service: reliability, rapidity, speed, flexibility and regularity. This constitutes the *sine qua non* for an increase in rail freight activity. Over and above extensive new infrastructure, the former monopoly operator, which has theoretically been faced with competition since April, will have to come up with in-depth restructuring measures.

Comment

Roger Guesnerie agrees with the main conclusions of the report, notably concerning the "Justice of the Peace" role that ought to the played by economic calculation, the fact that no miracles in the transport sector reducing the greenhouse effect can be expected. In contrast, a greater environmental research effort is required. He stresses that economic calculation must be made more reliable in order to take full account of the complexity of requirements. The speed is no longer the only factor that needs to be taken into account. Safety and comfortable driving are also important parameters. In addition, local pollution needs to be integrated into the calculation –otherwise how can the success of the tramway with the population, despite its low socio-economic profitability, be explained? A qualified observer points out that the report does not deal with the consequences for urban areas: the authors base their arguments on the issue of demand, but infrastructure can also have an impact on locations (of companies, households, etc.). Moreover, the conflict between political decision-making and economic calculation could be resolved if a transfer system to compensate local inhabitants for pollution were introduced.

La documentation Française

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