

THE TRACK COSTS ISSUE

A Comment

By C. A. Nash*

Several of the Essays in Honour of Denys Munby in the January 1979 issue of this journal resume the famous "track costs" debate after a space of ten years, and it is notable—as Harrison says in his paper—how little progress has been made in the interim. The contribution by Jennings simply assumes that levying a sum from road users equal to their track costs will improve economic efficiency. Harrison is altogether more cautious, recognising the validity of many of the criticisms of the approach, but he still regards aggregate cost/revenue calculations as worth doing, since they may suggest the existence of inefficiency. The paper by Rathery leads one to conclude that the relevant authorities in France and Switzerland are also becoming embroiled in the same fruitless argument.

It may therefore be worth while to state again the theoretical objections to the simple track costs approach and, more constructively, to try to point the way to a sounder approach to the problem.

FALLACIES IN THE "TRACK COSTS" ARGUMENT

The track costs argument, as normally applied, appears to involve the following propositions:

- (1) Economic efficiency is best served by pricing according to long-run marginal cost.
- (2) Long-run marginal cost may be approximated by the sum of allocated maintenance costs, allocated current capital expenditure and accident costs. It excludes congestion and environmental costs.
- (3) To the extent that there are departures from long-run marginal cost pricing, the treatment of all types of vehicles and of all modes of transport should be similar.

I propose to comment on each of these propositions in turn.

(1) Use of long-run marginal cost

If, as Harrison states, the original track costs report (Ministry of Transport, 1968) chose to adopt long-run marginal cost rather than short-run on the ground that the former could be implemented whereas the latter could not, then it is important to realise that the report was wrong. As he stresses, the location-specific nature of

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transport infrastructure and the presence of indivisibilities mean that the simultaneous existence of spare capacity on much of the system and congestion on the rest is a normal feature of transport infrastructure, even in the long run. In the absence of a pricing mechanism which allows charges to vary by time and location, neither pricing system can be accurately implemented. It is not true to say, therefore, as Harrison implies on page 86, that LRMC pricing can be implemented but that SRMC cannot. Either system will at best produce crude averages. In any case, the only sensible basis for choosing a time period with reference to which marginal cost is to be measured is to trade off the costs of over or under utilisation of the road system in the short run against the costs of long-run misallocation through decisions brought about by charging short-run marginal cost. Little evidence exists on this; perhaps the interaction between location and transport demand justifies a relatively long-run view (say 15–25 years ahead), but this is debatable.

(2) Measurement of long-run marginal cost

Criticism of the approach in the original track cost report to the measurement of long-run marginal cost was, of course, an important part of Munby's (1968) article. An approach to this problem by the allocation of total cost assumes constant returns to scale and the absence of joint costs. The "pay-as-you-go" treatment of capital involves further extreme assumptions: for instance, that road investment is directly proportional to the level of traffic, and that both grow at a constant rate.

Nor is there any good reason for omitting the marginal congestion, accident and environmental costs of increases in traffic, unless one believes that the degree of capital expenditure or regulation proposed will completely eliminate such costs in the long run. This appears implausible, and if true would clearly indicate that capital expenditure on roads or regulation was excessive. Indeed, omitting these costs has the perverse result that cuts in road investment lead to reductions in charges and the encouragement of more traffic to take up the reduced capacity, and vice versa. The argument that congestion costs are internal to the road sector as a whole is irrelevant to the measurement of long-run marginal cost of particular types of traffic.

Two other arguments are sometimes put forward for omitting environmental costs. The first is the absence of any consensus on how to value them. In this context (as with "warm-blooded" accident costs), the valuation may have to be a purely political decision; but to ignore them altogether is quite clearly to value them at zero. The second is that environmental charges are not generally levied elsewhere in the economy. However, given the apparent importance of the environmental costs of transport, it is extremely unlikely that the lack of environmental charges on substitute goods would completely remove the case for charging them on transport. Mention should also be made of the energy situation. To the extent that fuel tax is seen as a reflection of the difference between the opportunity cost of fuel and its net-of-tax market price, it should be regarded as part of long-run marginal cost (and applied to all modes).

(3) Parity of treatment of different types of vehicles and different modes

Harrison clearly recognises the limitations of the cost allocation approach as a way of dealing with these problems. But he fails to mention the theoretical case for deliberate non-parity of treatment where cost and demand elasticities differ, and

there is a budget constraint. At a simple level, second-best theory tells us that relative proportionate deviations of price from marginal cost should be related to the inverse of the relative price elasticities of demand (Baumol and Bradford, 1970). The existence of non-zero cross-elasticities between modes and vehicle types may reduce this divergence of treatment, but is unlikely to offset it wholly. Thus, in a second-best world, degree of cost coverage will vary between modes and types of traffic according to variations in both cost and demand. For instance, most evidence suggests that the own-price elasticity of demand for road transport is relatively low. For rail passenger transport, however, current British estimates (excluding commuter traffic) are of the order of 0.7. (For rail freight, the fact that nearly all traffic travels on individual contracts makes the whole concept ambiguous). An approach to cost allocation which would make relatively little impact on road traffic levels could have very serious implications for the level of rail traffic.

A THEORETICALLY VALID "WAY AHEAD"

The "way ahead" implied by the above comments would include the following stages:

- (1) Forecasting growth rates for traffic of different types and modes under alternative assumptions about the level and structure of taxation.
- (2) Estimating the costs of catering for alternative traffic growth rates in terms of maintenance, new construction, congestion and environmental costs.
- (3) Identifying the level and structure of taxes at which the revenue charged to an incremental slice of traffic matches incremental costs both for traffic as a whole and for individual traffic types (allowing a politically determined margin for intangibles).
- (4) To the extent that the resulting taxes do not satisfy government requirements for revenue from the transport sector, levying additional charges according to second-best principles.

No doubt it will be argued that this approach is very much more complex than the traditional "track costs" approach, and that the information requirements are formidable. But surely it is better to try to obtain (or guess) a rough answer to the appropriate question than a precise answer to the wrong one. Moreover, the information requirements really boil down to a knowledge of the relevant demand and cost elasticities, without which it would be surprising if one were able to undertake much useful economic analysis. In practice, recent research on petrol price elasticities and the responsiveness of car ownership to motoring costs has ensured that, for one important vehicle type at least, the relevant demand estimates should be possible. For freight vehicles they may be far more difficult, though the small proportion of total cost accounted for by taxation (maybe 10–15%) suggests that the demand elasticity with respect to road taxation will be very low. On the cost side, the fourth (or higher) power rule could still presumably provide the basis of an estimate of incremental maintenance costs; and the effect of different traffic growth rates on the justification for new road schemes should emerge as a result of the sort of sensitivity testing advocated by Leitch (Advisory Committee, 1977). Global estimates of congestion, accident costs and the environmental effects of road traffic have already been

published (although they are extremely crude), and they could presumably be reworked under alternative assumptions for rates of traffic growth.

The conclusion of all this work may turn out to be that road traffic is very insensitive to global tax levels. If so, the global *level* of road taxation ceases to have much allocative significance, although, as Harrison rightly stresses, the *structure* may still be important as an influence on factors such as vehicle type (see Jennings (1976) for a discussion of the importance of this point in relation to heavy goods vehicles). The implication is also, of course, that road taxes are a very good way of raising revenue from an allocative viewpoint, though equity and distributive objectives must obviously also be taken into account. One can scarcely dispute Harrison's statement that much of the political pressure for the allocation of road track costs is bound up with views on what is fair, rather than what is efficient. Whether pricing to cover costs is fair is itself, of course, questionable; it depends on whether one believes the distribution of income to be fair. But, in any case, it is important to keep the two issues separate; there can be no justification for the view that aggregate cost/revenue calculations are worth doing because they may suggest the existence of inefficiency.

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