

Network Charges Consultation

Response from Institute for Transport Studies, University of Leeds

As we are a research institute rather than a train operator, we do not feel it helpful for us to try to answer the precise questions listed in the consultation. Rather we comment on where we believe that research we have undertaken could help illuminate the issues.

a) Infrastructure costs package.

We believe there is scope for improving the efficiency of the provision and maintenance of infrastructure by making fixed charges more cost reflective, by requiring franchisees to bear the risk of changes in these costs (though see the caveats set out below) and by extending fixed charges to open access and freight operators in some circumstances. The principle should be that train operators signing long run track access agreements bear the avoidable costs of providing infrastructure of the quality and capacity they require. Charging avoidable (or incremental) cost would provide train operators with an incentive to work with Network Rail to reduce these costs. Lack of such incentives seems to be a reason why vertical separation in railways raises costs, at least for more densely used systems (Fumitoshi Mizutani, Andrew Smith, Chris Nash, and Shuji Uranishi, 2015, 'Comparing the Costs of Vertical Separation, Integration, and Intermediate Organisational Structures in European and East Asian Railways', *Journal of Transport Economics and Policy*, Volume 49, Part 3, July 2015, pp. 496–515). They would also provide improved incentives to franchising authorities - a key issue when devolution takes place – by more accurately reflecting the costs of their decisions about the services they wish to commission.. Such changes are likely to be more effective when combined with an alliance and where franchises are longer than at present. Careful implementation will be required in order to ensure that franchises do not become overly complex and risky (e.g. TOCs would need to have some safeguards with regard to infrastructure cost increases over which they have no control); otherwise franchise bids would need to reflect a risk premium which may not be good value for

money. They should be fixed charges, not charges per train km; the latter would distort incentives regarding frequency of service (unless geared to reflecting scarcity, as discussed below).

But it should be noted that whilst some costs may be avoidable if all services of a particular category cease running, they remain joint between all operators of that category of service. An example is a cost category specifically mentioned in the consultation document – the fixed cost of maintaining overhead wires for supply of electricity. These costs do not vary with electric train km run, so allocating this to train km would give an incentive to reduce electric train km with no resulting cost saving (unless all electric operation ceased). Nor are they avoidable by the withdrawal of electric traction by any one operator if more than one operator uses electric traction. Prior to privatisation, under British Rail, this problem was solved by allocating joint costs to the prime user of the asset concerned, and we suggest that this approach would make sense today. Normally the prime user will be the main franchisee. A freight or open access operator would only pay for any additional facilities they required; if they entirely used spare capacity, they would not bear such a charge (but we do think there is a case for PSO levies on open access operators reflecting loss of revenue to franchisees, to make sure they only enter when they will yield net benefits rather than purely abstracting revenue. We see this as a separate issue from track access charges).

Under British Rail assessing avoidable and prime user costs was a process requiring detailed application of judgement. More recently ITS had a small involvement in peer reviewing work for ORR which considered whether a more statistical approach to development of avoidable cost is possible (Chris Nash and Phill Wheat, 2005, 'Structure of Costs and Charges Review – review of work on avoidable costs and on cost variability', Institute for Transport Studies, University of Leeds) and we believe this approach to be worth revisiting.

b) Value-based capacity package.

We do not fully accept the argument for not implementing scarcity charges, although we recognise the opposition within the industry to the increased complexity these imply. The context to the review is said to be the scarcity of capacity resulting from growth in traffic and the possible future transfer of paths from franchisees to open access operators. We think it is a criticism of the existing charges that they give inadequate incentive to train operators to use

parts of the system and times of day when there is spare capacity as opposed to when capacity is constrained. The social value of the path to the franchisee can be calculated from available data (D. Johnson, C. Nash (2008). Charging for Scarce Rail Capacity in Britain: A Case Study (2008), Review of Network Economics, Vol. 7, Issue 1) although measuring the external benefits or costs of the entrant is more difficult. We have undertaken work on this for ORR in the past which we believe is worth revisiting (Chris Nash, Daniel Johnson and Jonathan Tyler (2005) Scoping study for scarcity charges. Final report for the Office of Rail Regulation. Institute for Transport Studies, University of Leeds). We accept that there is an issue regarding the application of such charges to freight, given the inadequacy of current road pricing systems for heavy goods vehicles.

c) The package of improvements to the current short-run variable charges.

Econometric evidence for Britain and several other European countries from studies we have been involved in suggests that existing variable charges are too low (see, CATRIN (Cost Allocation of TRansport INfrastructure cost), Deliverable 8 - Rail Cost Allocation for Europe, Funded by Sixth Framework Programme: authors, Wheat, P., Smith, A. and C. Nash, 2009). Econometric evidence also suggests that marginal wear and tear costs vary with infrastructure quality (see CATRIN Deliverable D8), although charging lower variable charges for heavily used high quality track might be problematic in its incentives if introduced without a scarcity charge. The CATRIN research, which informed the European Commission in its drafting of relevant legislation, has been extended in subsequent work (in particular, the FP7 Sustrail project). The latest evidence would put rail maintenance cost variability in the range 0.2-0.45 (depending on usage of the network). Renewals cost variability evidence is more sparse, partly because of the difficulty of modelling this cost category. Some studies, for example, Andersson M; Smith ASJ, Wikberg T, Wheat P (2012) Estimating the marginal cost of railway track renewals using corner solution models, Transportation Research Part A: Policy and Practice, 46, pp.954-964, have sought to estimate a cost variability proportion for renewals costs only – this evidence suggesting that up to 55% of track renewals cost may be variable with traffic (note that this is a relatively narrow and variable component of infrastructure costs).

Taking all the evidence together, including that from the Sustrail project (Sustrail Deliverable D5.3: Access Charge Final Report: Phill Wheat, Andrew Smith and Bryan Matthews) suggests that

the cost variability of maintenance and renewals together may be in the region of 40-45%. This cost variability applies to a fairly general definition of M&R (including track, signalling and telecoms electrification and plant and some other categories). The variability implied by the current British track access charge system (for wear and tear costs) is considerable lower than the evidence from the above econometric studies.

We would also like to draw attention to the work of our PhD student, John Haith, on congestion charges. (John Haith, 2015, *Understanding the Relationship Between Capacity Utilisation and Performance and the Implications for the Pricing of Congested Rail Networks*, unpublished PhD thesis, University of Leeds). He found that the existing measure of capacity utilisation used in estimating congestion charges, the capacity utilisation index, generally understates capacity utilisation by failing to take adequate account of the heterogeneity of trains in their speeds and stopping patterns and the resulting pattern of headways. Using a measure of capacity utilisation developed from Dutch research, he showed that congestion charges should be higher for heavily used stretches of track.

We would be very happy to provide further information or discuss any of the above mentioned studies with you if that were helpful.

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