

4. The aims of access pricing: Stephen Glaister

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Introduction

This presentation put the railway problem in the context of general access pricing principles covering the special problems that are faced in this situation.

The starting point is the position in 1993/94. This was an administered system of pricing and it is essentially what exists now. Unlike many of the other utilities there was very little information which was market based. A lot of time was spent worrying about costs, but very little information was incorporated about market valuations of the uses of these assets. That is the source of a lot of the problems that are to be discussed, especially the problems about allocating capacity.

Public interest.

The public interest is changing very quickly in this particular industry. One difference from the other regulated utilities comes from the fact that this is a subsidised industry. That brings with it all the baggage of direct political interest. That political interest will change extremely quickly over the next few months because of the new transport policy, the Strategic Rail Authority, and other things which may be going on like the Treasury's adoption of capital accounting for roads.

All of these things are likely to fundamentally change the access charges for complementary and competing modes of transport. It may affect the function which access charging in railways is supposed to perform, in the sense that subsidy may be coming to Railtrack in other ways than through the charging mechanism. That may fundamentally change the aims of access charging. There is all the change to do with devolution, particularly the change in London Government, that is going to have fundamental effects on charging for Railtrack and related assets.

Charges

There are two sets of charges; the interface between the train operators and Railtrack, and that between the end user and the train operator. This complicates the situation. Apart from anything else there is the question of the load factors on the trains. We are selling train capacity, they are selling passenger or freight loads, and there is a flexibility about the number of passengers on the

train which has not really been thought about. If there is concern about capacity shortages, then clearly load factors on the trains should be taken into account. There is a complexity of quality which is much greater than in many other industries. There is phenomenal heterogeneity in access rights, in the sense that there are both passengers and freight, and there is enormous geographical variation in the markets that are served, both on the cost side and the demand side.

Moving from the starting point the need is to end up with something that is very simple and transparent. One should not be trying to strive for what is best, but to try and avoid some of the worst stupidities, i.e. move from the starting point in the right direction, identifying the biggest failures in the system. That is not to say a few simple economic principles should not be adhered to. Because the issues are complicated, the principles are needed rather more firmly than might otherwise have been the case.

There are two quite distinct functions of access charging in this situation. Firstly, to provide a signal between train operators who are buying the capacity and Railtrack who are providing it - on one side, to signal to Railtrack when it is worth expanding capacity and when it is not, and on the other side to signal to train operators when it is worth running more trains and when it is not. Second, to provide signals between train operators who are competing for the same space so the existing capacity is allocated in an efficient way. That second function would not be necessary if there was a unified train operator because all the issues would be internalised, but because there is a mixture of train operators, the second dimension is of concern.

Objectives

Most documents on access pricing list the following objectives:

- fairness; and
- efficiency which has two aspects:
 - not being wasteful with commercial incentives to minimise costs;
 - allowing an activity if the benefits exceed the cost and preventing an activity if the costs exceed the benefits.

Efficiency

Efficiency is a much more subtle thing than many people recognise. There is the obvious point about giving incentives to Railtrack and other service providers to act in the least cost way, not to be wasteful in that sense, which is taken for granted. But there is also efficiency in the sense that the assets should be used in the most economically beneficial manner. That must mean at the end of the day that the highest value users get onto the system and the lower value ones get turned off. If the benefits exceed the costs a change should be allowed to happen, and vice versa. This is not being done at the moment and that is one of the reasons why there is a problem with capacity allocation.

In the public interest, it is the benefits net of the costs that is of interest. It needs to be specified what is going to change and the relevant cost attached to that change. There will be an incremental benefit and an incremental cost associated with the change. The incremental benefits would, of course, reflect the user's willingness to pay for this change. That is where value of time comes in, because it is the value of time of the passengers on the train, or the value of whatever it is for the freight shippers, that matters.

Thinking of the access price as a signal dividing Railtrack from the train operators, once the prices are established the train operator is expected to be looking at the price it faces and making its decisions about what is worth doing, what it wishes to expand, and what it wishes to contract. Quite simply, to get efficient use of the system both the demand side and the supply side have to be examined, i.e. what people are willing to pay, price, and how much it costs on the margin for this incremental decision. A lot is known about the cost side but almost nothing is known about the demand side.

A final observation which people so often forget is that, if the demand did not respond to the price at all, there will be no interest in efficiency as far as access pricing is concerned because nothing would change in response to different access prices. It would be a matter of allocation of money between the different parties. It is the responsiveness of the demand side that gives a legitimate interest in thinking about principles of access pricing.

Full cost recovery

The relation of interest is balancing incremental benefits with incremental costs. Because of the structure of railway costs it is generally accepted that that will lead to prices which fall below average costs, as incremental costs tend to be lower than average costs. The consequence is that

efficient pricing will require one of two things, either subsidy to cover the gap between incremental cost and long run average cost, or the gap has to be covered in some other way. Efficient pricing will not generate enough to keep the system going in the long run and the gap will have to be filled.

The Ramsey pricing notion is easy to denigrate as a theoretical toy but actually it is terribly important. It is a fundamental idea: to achieve fully efficient pricing, people are not taken off the system if there is more benefit to them than the cost of provision. But this solution cannot be adopted in full because of the deficit problem, so the system of pricing needs to be adjusted in such a way that as little damage as possible is done. That involves the standard idea of putting the prices up more in inelastic markets where the demand responds less. The whole point about these pricing solutions is to achieve the right quantities, i.e. adjusting the prices in such a way that the quantities are as little as possible away from where you would like them to be.

There are other kinds of solution which can and should be considered. For example, a multi-part tariff where there is a lump sum charge which covers the fixed costs and a variable charge which relates to the incremental costs. The EW&S contract is just such a thing. Arguably, the whole of the tariff structure is a multi-part tariff. However, the split between the fixed and the variable part is not right.

Other solutions that have been suggested include equi-proportionate mark-ups, meaning that the incremental costs are determined as they vary across the system and then all raised in the same proportion. One advantage is that it is very simple. It does not require anything explicit to be known about demand elasticities and it does keep the relative incremental costs in balance. That may or may not be a good thing to do, because it is the quantities that need to be right, not the relative costs. Alternatively, some system of negotiation between the parties. This was attempted the first time round but it has not worked terribly well.

The inheritance is an administered system which gives some consideration to incremental costs. At the time that the first set of charges was worked on, it was thought that much more was being done in the way of understanding the full impact of expanding the system on the cost base, long run marginal costs. The actual result was something much more limited, i.e. only 9% of costs that vary with track damage, power and so forth. Incremental infrastructure costs are neglected.

Little is known about the incremental benefits and there is no way of finding out at the moment through any kind of market test, because Railtrack just does not work in any kind of a market. There is no way of knowing how much freight operators would be willing to pay to bid capacity

away from train operators. All that exists is a calculation about how much people might be willing to pay for quality improvements and time saving, rather than using any kind of market test.

Capacity

In principle, where there is excess capacity, incremental costs will be very low. The general view was that there was plenty of capacity, with few exceptions. Capacity was not conceived as being a serious problem. The situation is now quite different, where the biggest problem is understanding how and where to expand capacity. When doing this, the long run incremental costs should include the cost of expanding capacity. They should also include congestion costs, because there is a standard congestion pricing problem.

What needs to be understood much better is what it really costs to increase capacity in the long run. If this is done, and capacity constraints are reflected in access charges, Railtrack will have appropriate incentives to expand the system, in principle at least, and an efficient allocation of the existing capacity can be achieved. This does not mean eliminating congestion, it is almost never appropriate to get rid of congestion completely.

Part of this process should be to get the use of capacity to those that value it most. The present system does not allow that. The low value users are stuck on and have "grandfather" rights to the capacity, and many of those grandfather rights are held on behalf of the state. A lot of empty trains are running around on capacity that could be used much more efficiently by higher value users, but the state is holding the rights for perfectly legitimate social reasons. That is inefficient, and it is something that should be thought about very carefully. At the very least, signals should be given to holders of those rights showing the opportunity cost of that space.

One of the things that ought to be thought about in the review is how a mechanism can be generated whereby high value users get on to the system at the expense of low value users. One implication is that there would be quite substantial variations of the capacity charge by time and by geographical location.

There is a regulatory problem that in a growing system Railtrack may have a real incentive not to expand capacity, because that gives the opportunity to exercise a standard monopolist's trick of failing to provide enough output and raising the price and extracting the rent as profit. That is something to watch out for - people do talk about Railtrack refusing to taking risk on expanding capacity.

However, there are very genuine problems both for Railtrack, and the regulatory regime, in understanding what incremental long run costs are - capacity needs to be modelled and the cost of increasing it estimated. For example, there is the question of the cost of increasing capacity of tunnels and embankments on the margin.

Risk assessment

The last issue is the question of dealing with risk. None of the papers I have seen on this discuss this adequately, but it is at the heart of the whole thing. If there is no risk in the system, if everything was known by everybody all the time, Railtrack could not make any profit. The Regulator would know what to extract and would extract it.

Railtrack can only make profits above the cost of capital in the presence of risk. It is the risks that provide the incentives to good behaviour, and the misunderstanding of risks that create bad outcomes. However, this is a subject that is greatly under-researched. More careful thought needs to be made about where the risks are and how to manage them. Revenue sharing, as in PUG2, is one mechanism of shifting risk in a particular way. More discussion is needed to understand the nature of the risks and to handle them efficiently in access charging in the future.

The US Interstate Commerce Commission (Now known as the Surface Transportation Board.) document on Constrained Market Pricing (CMP) for coal shippers (Coal Rate Guidelines, Nationwide. Interstate Commerce Commission Reports. Ex Parte No. 347 (Sub-No. 1), August 8, 1985.) says very clearly and elegantly what the aims of access pricing are. The Commission believe that *"CMP will provide the necessary protection for captive shippers, while providing railroads the opportunity to earn adequate resources". The principles of CMP are that users "should not be required to pay more than is necessary for the rail carriers involved to earn adequate revenues. Nor should it pay more than is necessary for efficient service. A captive shipper should not bear the costs of any facilities or services from which it derives no benefit. Responsibility for payment for facilities or services which are shared (to its benefit) by other shippers should be apportioned according to the demand elasticities of the various shippers. Finally, changes in the rates structure should not be so precipitous as to cause severe economic dislocations. Taken together, these constraints should ensure that a shipper will not be asked to fund long-term excess capacity, fund inefficiencies. Cross-subsidisation of other shippers is effectively precluded."*

Discussion

Paul Prescott: "Much more is said to be known about costs than about the demand side of the equation and by implication it is incremental costs that are important. However, much less is known about incremental costs than some think. The existing data is derived from the British Rail studies from the late '80s. If it were hypothesised, for example, that the current incremental cost of traffic is wrong, and if it were the case that it is lower than the true cost, one would expect to see people rapidly putting on extra trains, and congestion rising, which is indeed what is seen. Yet it would be rather hard to justify moving beyond the initial position and into creating significant slugs of further capacity. The contention is that this is very much the case."

Stephen Glaister: "This exposes a real issue which is that if the long run incremental costs carry on being too low they will (a) encourage over-use of the existing system and (b) encourage commercial interests to invest too much which, in the long run, could not be afforded to supply. There would be false signals and that is a very serious regulatory issue."

John Ellis: "A further point raised was the issue about low value and higher value users. It is more complex than inferred because there are non-fare benefits arising from increases in services both for passenger and freight and there is a very inefficient mechanism for recognising these wider benefits. There is a mechanism on the freight side which goes some way to recognising this, the Freight Facilities and Track Access Grant structures. There could be a similar mechanism for assessing the social value of increments in passenger services."

Stephen Glaister: "In the past the decision was made, and it is considered a good one, that any social payments would come through the TOC to Railtrack. It may well be that the new Rail Authority will start subsidising Railtrack directly, rather than through train operators."