ABSTRACT

Whilst the emphasis of European Union rail legislation to date has been on freight, measures such as separation of infrastructure from operations, infrastructure charging regimes and regulation have major implications for the passenger sector. However, a number of problems with the implementation of these measures have emerged; these issue are reviewed. The Commission would clearly like to completely open the passenger market to competition by a combination of competition for the market for subsidised services and in the market for commercial services. The member states have so far not agreed to this, but the first required market opening will come in 2010 in the case of international passenger services. Experience to date with rail passenger market opening and the prospects for the future are briefly reviewed. It is concluded that further action to clarify and enforce existing legislation is urgently needed. In the meantime the best way to liberalise rail passenger services remains unclear – whilst competitive tendering has generally worked well with tightly prescribed gross cost contracts, there are problems with both franchising and open access for more commercial services. Further research on these issues is still needed.

1. INTRODUCTION

To date the main priority of the European Commission’s policy regarding rail reform has been freight. To the extent that the policy has required structural changes, including the separation of infrastructure from operations at least to separate divisions, transparent and non discriminatory infrastructure charges and allocation of capacity and the establishment of a regulator to hear appeals, it has had obvious implications for the passenger sector, and many countries have in fact allowed competition for passenger franchises and in more limited circumstances new entry for operators of commercial passenger services. But attempts to introduce competition into the passenger sector, such as through amending Regulation 1191/67 to require competitive tendering for subsidised services or services with exclusive operating rights, have not been agreed by the member states. European legislation does require that governments award contracts for services operated under public service obligations in a transparent manner and compensate rail operators appropriately for operating them. The European Commission has also played a major role in the development of high speed rail passenger services in Europe through grants to develop the trans European network.

However, as from 2010, competition will be permitted on international passenger services, and these services will be able to carry domestic passengers, in competition with domestic operators, unless to do so would threaten the financial stability of services
carried under public service obligations. At the same time, the Commission is considering how best to set about liberalising the domestic passenger market. It is clearly of the view that competition either for the market or in the market should be extended throughout the rail sector.

We first consider the current legislation on the structure of the industry, and the action underway to enforce and recast it. We then consider the likely impact of the coming introduction of competition into the international rail passenger market and consider the prospects for liberalisation of the domestic rail passenger market before reaching our conclusions.

2. THE CURRENT LEGISLATION

The legislation comprising the First Railway Package is contained within 3 directives – Directives 2001/12; 2001/13; and 2001/14. In brief, these required:

1. separation of the management of infrastructure, freight and passenger services, at least into separate divisions with their own profit and loss accounts and balance sheets;

2. non discriminatory setting of access charges and allocation of paths (as a safeguard if the infrastructure manager was also involved in train operation then these functions had to be undertaken by an independent body);

3. the establishment of a rail regulator, independent of the infrastructure manager and any train operator, to whom appeal could be made in the case of dispute;

4. a performance regime to incentivise the infrastructure manager; and

5. financial equilibrium of the infrastructure manager to be ensured - either through the regulatory system or by means of a multi-annual contract lasting at least 3 years – whilst maintaining pressure for cost reductions.

Two further packages have introduced important measures regarding safety and interoperability, but most crucially have completely opened up the market for both domestic and international freight traffic, and will commence opening the market for passenger traffic with international traffic in 2010.

However, implementation of these Directives has been very variable. Partly this may be because of a degree of ambiguity in some of them, and the Commission is currently considering whether a recast of the package is necessary to improve clarity. But also there is a general issue of enforcement. In 2008, the Commission wrote infringement letters to no less than 24 of the 25 member states with rail systems warning them that it considered that they had failed to correctly transpose the first railway package, following
a review (CEC, 2006). Whilst in some cases the failure related to minor details in others it was more serious. Amongst the prominent issues were

- a failure to ensure adequate independence of the infrastructure manager from train operators where these were still part of the same company;
- insufficient implementation of the charging framework set out in Directive 2001/14, including a lack of the required performance regime
- a failure to establish an independent regulator with appropriate powers and accessibility and
- Insufficient incentives for the infrastructure manager to reduce costs and the level of access charges

We will consider these issues in the following sections.

3. SEPARATION OF INFRASTRUCTURE FROM OPERATIONS

The current legislation does not require complete separation of infrastructure from operations. What it does require is that if these are not in the hands of organizations which are independent in terms of decision taking, then a separate organization must be in charge of allocation of capacity and setting of infrastructure charges.

We have seen in previous conferences the variety of ways in which the legislation has been implemented, with a number of countries (including Sweden, Britain, the Netherlands and Denmark) going for complete separation, but others (Germany, Italy, Austria etc) retaining infrastructure and operations as separate subsidiaries within the same group. A third approach, for instance in France, is to have a separate organization responsible for planning, including allocating capacity and setting infrastructure charges, but to leave train operations and infrastructure maintenance and operations in the same company.

The issue of which is the best approach has provoked a lot of research in recent years but it still seems somewhat inconclusive. It is often argued that separation of infrastructure and operations will lead to excessive transactions costs in terms of the negotiation and enforcement of contracts between the train operator and the infrastructure manager. In a comparison of Germany, Sweden and Britain, Merkert (2009) finds that transactions costs are indeed higher in vertically separated forms, but that the difference in costs is less than 1% of total costs, and therefore not a conclusive argument against vertical separation if it has other advantages. Other reasons why vertical separation may increase costs include loss of economies of scope and reduced pressure on the infrastructure manager to provide good services in a cost efficient manner, because of their distance from the final market. There are a number of studies of this issue using European experience, including Friebel, G., Ivaldi, M. and Vibes, C. (2005) and Growitsch, C. and Wetzel, H. (2009), and the results vary from study to study and between countries, with a range from no effect to a 30% cost penalty for vertical separation.
Obviously the growth of on track competition reduces the degree of vertical integration, as does franchising unless the system can be divided into self contained regions and franchised with the infrastructure included. No European country has followed this model, preferring a single national infrastructure manager for most of the infrastructure. Thus a key issue is whether the benefits of more competition offset any disadvantages of vertical separation.

4. INFRASTRUCTURE CHARGING

Directive 2001/14 requires charges to be based on direct cost, with non discriminatory mark ups permitted where required for financial reasons, provided that they do not lead to the loss of market segments willing to pay direct cost. Governments have a responsibility to ensure that the total income of infrastructure managers including contributions from governments as well as track access charges is sufficient for the infrastructure manager to be in financial balance. There is some ambiguity about the terminology here which might usefully be resolved in additional guidelines or as part of the recast. It is clear from other documents that DGTRen equates direct cost with short run marginal cost, which is at least a clearer economic concept although – despite much research - there remains debate on how to measure it. The other source of ambiguity is what constitutes a market segment. Would a market segment constitute passenger services as a whole, suburban or regional services as a whole, or particular combinations of type of train, origin and destination?

ECMT (2005) - partly updated in ITF (2008) - shows the wide range of practices in rail infrastructure charging within Europe regarding which cost elements are covered by the charge and the form of the charge, which ranges from a simple charge per gross tonne kilometre in Finland, to a mix of reservation charges and charges per train kilometre differentiated by type of infrastructure and time of day in France.

Figs 1-3 show typical charges for different types of passenger train. According to the GRACE project Deliverable 7 (www.grace-eu) the marginal social cost of track access will rarely be outside the range of 1-4 euros per train km. It appears likely therefore that a number of countries are charging below marginal social cost for passenger services, and others above. In some countries the charges for high speed trains are very much higher than any likely estimate of marginal social costs. This may severely affect their competitive position, although as long as it does not exclude entire market segments, it is not illegal. Adler, Kroes and Nash,(2008) find that the social benefits of high speed rail are much greater if marginal cost pricing is used to promote efficient mode split than if very high charges are levied, leading to poorer utilisation of new infrastructure capacity. Moreover, at low infrastructure charges, a franchised operator can afford to pay a substantial lump sum towards infrastructure costs. This is a more efficient way of achieving this result than by high variable charges which discourage provision of high levels of service. But it is highly problematic when open access entry is permitted, as it may be judged discriminatory and open access entry will in any case reduce the profitability of existing services and therefore the ability of the train operator to pay for a franchise. Thus there is a real dilemma as to how to reconcile open access entry with recovering a high proportion of infrastructure costs from users.
Fig 1 Typical Access Charges for local and suburban passenger trains € per train-km in 2008

(source ITF, 2008)

Fig 2 Typical Access Charges for inter city passenger € per train-km in 2008

(source ITF, 2008)
5. REGULATION

Following the successful deregulation of railways in the US (Winston, 2006) it is often argued that regulation is undesirable. However that experience was on the basis of a system which was dominated by freight traffic, where alternative vertically integrated operators existed on most routes, and where there was believed to be strong concentration between modes and between alternative sources of materials. In the passenger railways of Europe there is no chance of creating competing routes for most traffic (where alternatives exist, typically one is dedicated to high speed and the other to regional passenger and freight traffic). Moreover, the strong commitment to the continuation of rail services by most governments limits the impact of competition from other modes even in those markets where it is otherwise strong. Thus the European approach to rail reform maintains a monopoly infrastructure manager, with competing operators using it. Where there is complete vertical separation, the commercial pressures on the infrastructure manager may be very limited, whilst it remains the case that dominant operators may use their market position to seek favourable treatment. Thus regulation is needed to ensure that infrastructure managers perform their functions efficiently and allocate capacity and charge appropriately. Where there is not complete vertical separation, the issue of ensuring non-discrimination becomes a much tougher task for the regulator.

A recent study (IBM, 2006) concluded that the regulatory arrangements were only satisfactory in Britain, Germany, Netherlands and Sweden. In many other cases, the regulator is within the Ministry of Transport, with few staff and a purely advisory role. Where that Ministry is also responsible for the infrastructure manager and the dominant train operator, the risk to objective decisions is obvious. A number of countries, including
France, are now considering reforming their regulatory arrangements to ensure that they are adequate to the task.

It will be noted that there is also a requirement to ensure that the infrastructure manager is under pressure to reduce costs but at the same time is adequately financed. This may be achieved through the regulatory system, or by means of a multi-annual contract with the state. In few countries does the regulator have the powers or ability to look into the efficiency of the infrastructure manager – Britain is exceptional, in that the regulator sponsors in depth studies, including international benchmarking, on the basis of which they determine the future level of funding for the infrastructure manager given an explicit statement of what the government wishes the infrastructure manager to produce (the High Level Output Specification) and the funds it is willing to make available (the Statement of Funds Available). Britain is also unusual in having a performance regime which compensates operators for delays for which they are not responsible whilst requiring them to pay for delays they cause (although this is required by Directive 2001/14, few countries have implemented it). However, given that the infrastructure manager is in every European country effectively a public sector body, doubt has been expressed about the effectiveness of a standard regulatory approach based on financial penalties. The alternative is for the government to negotiate a multi annual contract directly with the infrastructure manager essentially covering the same issues. This is the approach being taken in Germany.

6. FINANCING

A number of member states, in particular in Central and Eastern Europe, appear to have failed to ensure the financial equilibrium of their infrastructure manager, as they are obliged to do under Directive 2001/14. (CEC, 2008). In some of these countries, there is evidence that governments are failing to pay the costs of passenger services operated under public service obligations, including the avoidable cost of infrastructure for passenger services, and that they are, furthermore, failing to perform their duties under Directive 2001/14 to ensure the financial equilibrium of infrastructure managers. Infrastructure managers are unable to carry out even basic maintenance and renewals without borrowing, and the burden of debt adds to the financial crisis (CER, 2005). Table 1 illustrates how much less is typically spent on infrastructure by central and eastern European countries than western. In such cases, this then requires the infrastructure manager to borrow heavily and/or be inadequately funded to maintain and renew its infrastructure to the standard required by train operators. In some cases, where PSO payments from government to train operators are inadequate or not paid at all, train operators are actually not paying the infrastructure charges – further exacerbating the financial disequilibrium. The result is high charges for commercial traffic (mainly freight) and a decline in the quality of infrastructure, discouraging new entry and damaging the position of rail in inter modal competition.
<table>
<thead>
<tr>
<th>State</th>
<th>State Spending on rail infrastructure (in million €)</th>
<th>Traffic units (in billion p.km+t.km)</th>
<th>Track length(km)</th>
<th>State Spending per transport unit (in €)</th>
<th>State Spending per track.km (in €)</th>
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<td>147 €</td>
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</table>

Source: CER

In many of the new member states, cross subsidy has been the main way of funding social obligations in the past. However, with the opening up of the market for inter modal competition, it is no longer possible to rely on freight traffic as the main source of funding for all rail infrastructure. Amongst train operators, as the rail market is opened up to new entry, the possibility for cross subsidy becomes even more limited; if incumbent operators are forced to cross subsidise passenger services in order to fund social obligations, they will not only lose traffic to other modes but also to new entrants into the market. It was an inevitable consequence of opening up the market to competition that these systems of cross subsidy would break down. Thus there will either be a need for
more public funding, or infrastructure and services will have to be pruned. Tanczos and Bessenyei (2009) comment that some East European countries have maintained a network far denser than that of Western European countries, with very low levels of traffic on some lines.

The European Commission believes that there are inadequate incentives at the national level for individual governments to invest to improve cross border transport links. This is, essentially, because many of the benefits of such investment accrue to other countries – indeed in the case of key transit corridors this most of the benefits would go to other countries, particularly if marginal cost pricing of infrastructure is the practice.

Since their inception in the early 1990s, the development of Trans-European Networks (TEN) has been viewed by the Commission as a major element in integrating national markets to develop the “Single Market” for the entire EU and promoting economic and social cohesion via the freedom of movement of persons, goods and services throughout the EU. The White Paper’s investment objectives were, consequently, almost entirely bound up with development of the Trans-European Transport Network (TEN-T). The Trans-European Transport Networks (TEN-T) are multi-modal and multi-dimensional, consisting of roads, railways, airports, international sea ports, inland ports, traffic management systems and, since 2004, motorways of the sea.

There is a requirement that at least 55 percent of the projects in the TEN-T be rail and no more than 25% be road. This requirement has been questioned on the basis that if the appraisal process correctly takes account of all relevant factors then the selection process should be mode neutral. However, the bias towards rail is not justified exclusively on environmental grounds. Research has demonstrated that rail tends to have more spillover benefits from one member state to another (for instance in the FUNDING project some rail schemes were found to have spillover effects on other countries approaching 50% of all benefits, whereas for road schemes benefits tend to be much more concentrated on domestic traffic).

The level of funding provided from the EU’s TEN-T budget is very limited. EU provides funds for studies (50%) and towards construction (10%;or 20% exceptionally). However, in eligible countries regional and cohesion funds provide up to 80% of the cost. TEN-T projects also qualify for favourable lending terms from the European Investment Bank.

Table 2 shows the proposed levels and sources of funding for the seven years starting 2007. It demonstrates the importance of cohesion funds and of the European Investment Bank as sources of finance, but also that the plans rest heavily on funding from the member states themselves.
There is a heavy emphasis in the current priority projects on high speed passenger lines. These may be efficient where passenger volumes are high and existing lines congested, and may release capacity for freight traffic. According to de Rus and Nash (2007), the breakeven volume of passengers to justify a new high speed line is very variable, ranging from 3m to 17m in the first year of operation under possible assumptions examined, but typically even under favourable conditions at least 9m passengers per annum will be needed. Whilst it appears that all the French high speed lines comfortably exceeded this volume, it is clear that some proposals are being developed where traffic is very much less dense (the Madrid-Seville line, for instance, carried less than 3m passengers in its second year of operation and is still only at around the 5m level).

The financial difficulties of many East European railways have already been described. In such a situation, there is a particular need to ensure that cohesion funds are used effectively, particularly given the requirement for member states to find at least some matching funding. There is also evidence that the quality of appraisal of projects is grossly inadequate in many member states (ECORYS, 2005). It may be more appropriate to fund packages of reforms, including renewing and upgrading existing infrastructure with an economically justified future, tackling the issue of under payment for public service obligations and appropriate infrastructure charges, rather than simply contributing to projects.

7.  PASSENGER MARKET LIBERALISATION
In 2010, the process of opening up the market for passenger services will begin with international passenger services. These will be allowed to carry domestic passengers, unless to do so would disturb the financial equilibrium of existing services subject to a public service obligation. There are already signs of potential competition emerging in the profitable high speed sector on key international corridors, and indeed in the domestic market as well where legislation in the country concerned permits it. A new company in Italy (Nuovo Trasporti Viaggiatori), in which SNCF is a partner, has ordered 25 high speed trains, TRENITALIA has applied for paths in France, and a partnership has been formed between Air France and Veolia. It is widely expected that DB and SNCF will compete on a number of international routes. It is doubtful, however, as to the extent of potential new entry elsewhere.

It was mentioned above that further liberalisation of the domestic passenger sector is under consideration. A variety of ways forward on this is being examined, but the ultimate intention of the Commission seems to be that commercial services should be subject to open access competition, whereas services subject to a public service contract should be awarded by competitive tender. In this way the entire passenger market would be open to competition either in the market or for the market.

The first country in Europe to completely open up the market for new entry of commercial passenger operators was Germany which did so in 1994, but for intercity services, which are treated as commercial, so far only one or two operators have entered operating a handful of trains. This is not particularly surprising. Most intercity passenger services are not particularly profitable and there are strong network benefits to the incumbent. Services also sometimes face fierce competition from air transport, as well as car.

There is also evidence that competition in the form of cherry picking may emerge and that this is not socially desirable (Preston, Wardman and Whelan, 1999; and Preston, Holvad and Rajé, 2002). Where this emerges as a real problem, one option would be a regulatory system such as that in Britain, where the right of entry is not automatic, but subject to a public interest test undertaken by an independent regulator.

In the case of services subject to a public service obligation, competitive tendering is widely practiced in Sweden, Germany, Britain, the Netherlands and Denmark. However the attempt by the EU to legally require competitive tendering for PSO contracts has been abandoned, and whilst the more limited obligations placed on heavy rail by Regulation 1370/2007 require there to be a clear, transparent contract, setting out what has been paid, the specific requirements relating to tendering do not apply to heavy rail. Most other countries continue to secure services operated under public service obligations by means of direct negotiation.

Specifically relating to franchising of passenger services, ECMT (2006) provides a wealth of evidence about experience to date. Brenck and Peter (2007) conclude that German experience of competitive tendering has been very successful, with typically a 30% cost saving as well as improved services and more passengers. Results in Sweden
(Alexandersson and Hulten, 2007) and the Netherlands Van Dijk, (2007) were similarly favourable overall, although in all three countries, there were some problems with unrealistic bids, leading to bankruptcies or premature withdrawals from the market. But in Britain (Smith, Nash and Wheat, 2009) and Australia (Kain, 2007) the problem of unrealistic bids has been acute, and contributed to a significant failure to achieve the aims of the exercise with early cost reductions being more than offset by later increases in the case of Britain. Whereas in most countries, gross cost contracts to deliver tightly prescribed services predominate, in both Britain and Australia the problems have arisen in the context of net cost contracts where responsibility for developing and marketing the services lies at least in part with the operator. Further research is needed to find ways of overcoming these difficulties.

8. CONCLUSION

Whilst some commentators express dissatisfaction at the rate of change in the rail industry, in many ways the change over the last decade has been dramatic. There has been a substantial reorganisation, with infrastructure often in a different institution from passenger and freight operations, or at the least in a separate division. There are new entrants into both passenger – predominantly franchised services – and freight operations. NERA (2003) finds strong evidence of rising efficiency and improved cost coverage amongst European railways in the second half of the 1990s, suggesting that already the changes underway were paying off, but draws particular attention to the poor financial condition of a number of rail organisations - especially RFF - particularly in terms of inherited debt, despite the requirement in Directive 91/440 for member states to deal with this problem.

On the other hand we have seen that there remain problems with the workings of some of the new legislation, particularly relating to infrastructure charges, in the practical application of the provisions on regulation and access to ancillary facilities, whilst the problem of the financial position of the railways is acute and growing in many of the new member states (RebelGroup, 2007). Without tackling the issues of adequate funding both of infrastructure and of social obligations regarding passenger services, the liberalisation of railways cannot have the hoped for results.

Much of the legislation, (including the complete opening up of the freight market in 2007) has only taken effect very recently, and adaptation to it is still taking place. As we have seen, implementation of it has been inadequate in many member states. The first priority of the Commission must be to see that it is properly implemented (particularly through the mobilisation of Member States to establish strong regulatory bodies). At the same time, research to identify best practice on these issues is very important, and the Commission has an important part to play in encouraging dissemination and take up of the results.

Further liberalization of passenger services remains a controversial issue. As we have seen, the experience to date of both competition in the market and competition for the market is not entirely positive. Competitive tendering seems generally to have worked well as a way of delivering services tightly prescribed by franchising bodies on gross cost
contracts, but has had more difficulties where – as in Britain and Australia – operators are expected to bear revenue risk and to take at least some of the initiatives in developing services. On the other hand, simple open access for commercial services is also found to have disadvantages. A cautious approach is therefore justified, but further research to identify the best way of opening up the rail passenger market to competitive pressure is urgently needed.

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