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RAILWAY (DE-)REGULATION IN GERMANY

GÜNTER KNEIPS*

Railway (de-)regulation in the context of EU transport market liberalisation

Since the European Court of Justice ruled against the Council of Transport Ministers in 1985 for failing to ensure freedom to provide services in the sphere of international transport, the paradigm shift towards full competition on the European transport markets has become irreversible. The European Union has played a leading role in this process, and the benefits of free entry to transport markets throughout Europe are now largely unchallenged.

The transportation of persons or goods on roads, railways, waterways, and in the air, seems at first glance very heterogeneous. Nevertheless, the different transportation modes share as a common denominator the existence of an infrastructure of routes, of traffic control systems as well as vehicles to provide transportation services. For example, railroads are technical systems which can be divided into the following related parts:

- Tracks and stations (construction and maintenance);
- Train traffic control systems (scheduling and operating);
- Train services (transportation of goods and passengers).

There are obviously strong complementarities between the different parts of railroad systems. Train services can only be provided if access to tracks and stations is guaranteed and the operation of trains is coordinated, including ex ante scheduling as well as real time train control. These synergies have created the fable of vertical integration as the adequate or-

ganisational form of railroad systems. Lessons from the history of the nineteenth century that it might be more effective to organise railroad systems in a rather disaggregated way have been widely ignored.¹ It is by now well known that third-party access to railways is indeed technically feasible. Indeed, the process of regulatory reform during the last decade would otherwise have been pointless.

The disaster of reduced traffic and increased deficits of European railroad companies has led to a challenge of the vertical integration approach. The principles of non-discriminatory access charges to railway infrastructures were already laid down in the Council Directive 91/440/EEC² of July 1991 as the precondition for the competitive supply of railway services on the same track. Free entry of service companies should improve the quality and variety of train services as well as provide incentives for a more cost-efficient production of train services. Vertical integration is no longer considered to be the adequate organisational form of railway systems. Instead, EU policy has been to separate the supply of train services from the provision of infrastructure, separation of accounts being compulsory and organisational or institutional separation being optional. In the Council Directive 95/19/EC of 19 June 1995 the basic principles of infrastructure allocation were established on the Community level.³ These principles do not allow discrimination between national and international services, discrimination between different users of railway infrastructure and excessively high access charges. The design of the non-discriminatory allocation of track capacities, however, remained within the competence of the member countries. In particular, market power regulation has not been prescribed by the EU Directives.

Efficient competition on European rail transport markets is conditional upon the existence of non-dis-



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¹ In the specific German case, generations of transport economists had regarded the nationalization of the Prussian railways from 1879 onwards as the logical and cogent solution for railway systems as such, disregarding the fact that even then alternatives existed (Fremdling and Knieps 1993, 129).

² The Council Directive 91/440/EEC of 29 July 1991 on the development of the Community's railways, OJ L 237, 24.08.1991.

³ The Council Directive 95/19/EC of 19 June 1995 on the allocation of railway infrastructure capacity and the charging of infrastructure fees, OJ L143/75, 27.06.1995.

crimINARY access to rail infrastructure for all active and potential train service providers. In addition, however, efforts must also be made to ensure that scant infrastructure capacities are allocated efficiently and total costs of rail infrastructure are covered.

The German railroad reform

On 1 January 1994, the railway reform legal package was enacted. The transition from a public enterprise to a firm under private law in the form of a joint stock company can only be called formal privatisation (rather than a real privatisation by sale of publicly owned assets), because the state is still the sole owner of the Deutsche Bahn AG (Group). Separate branches for infrastructure (DB Netz AG), commodity transportation (DB Transport und Logistik), passenger long-distance transportation and passenger local transportation were founded. Financial reasons also played a non-negligible role for the privatisation initiative. The Deutsche Bundesbahn and the Deutsche Reichsbahn, its counterpart in East Germany, suffered from large amounts of debts. The first step of the privatisation thus consisted of the relief of the liquidation of debts and the endowment with new capital.

There has been an intense controversy over the issue of separating railway infrastructure from railway services and not only formally privatising the service companies of the Deutsche Bahn AG (Group) (Knieps 1996, 44; Wissenschaftlicher Beirat beim Bundesministerium für Verkehr 1997, 632). Such a real separation, however, has not taken place so far. Until now, German railways have only been formally privatised. Deutsche Bahn AG (Group) is the only shareholder of the subsidiaries mentioned here. The Federal Republic of Germany has so far remained the only shareholder of Deutsche Bahn AG (Group). Since private capital can only be raised if risk-equivalent interest rates can be expected, privatisation shifted public attention to the cost-covering possibilities of access charges to the rail infrastructure.

A major goal of the German railroad reform has been entry deregulation of train services in the context of the liberalisation of European transportation markets. Accounting separation between service level and infrastructure level was considered a necessary precondition to guarantee non-discriminatory access to the tracks for all providers of train services. The DB Netz AG is obliged to provide access to the service providers' tracks on a non-discriminatory basis. Access charges have to be paid by all users of the

infrastructure. To cover the gap between revenues from track access charges and total costs, the State contributes to the financing of the infrastructure.

First phase of (de-)regulation: Negotiated third party access

If the track owner no longer supplies all transportation services himself, it is vital to distinguish between the service tariff the customers have to pay to the transportation firm and the access charge the transportation firm has to pay to the track owner. According to the well-established subsidiary principle, in Europe only the basic principles of infrastructure allocation were established on the community level. These principles do not allow discrimination between national and international services, discrimination between different users of railway infrastructure or excessively high access charges. The detailed design of non-discriminatory allocation of track capacities, however, remained within the competence of the member countries.

The first phase of German railway (de-)regulation has been characterised by the requirement of non-discriminatory third party access without ex ante sector-specific regulation. According to the General Railway Act (AEG), §14, all railway companies located in Germany have the right of non-discriminatory access to railway infrastructures, irrespective of the kind of rail transport they offer. The design of three subsequent access charge systems as well as the allocation of track capacities was left within the competency of DB Netz AG. The newly founded Federal Railway Administration was in particular responsible for technical regulations, whereas the competency for issues of access discrimination was increasingly handed over to the Federal Cartel Office. The basic concept was based on negotiations between applicants and the DB Netz AG in its function as infrastructure manager. There was no ex ante regulation of access charges.

The access charges of the DB Netz AG were factually unregulated. The Federal Railway Administration was only responsible for settling conflicts between the DB Netz AG and third parties arising in the context of access conditions and access charges. Earlier criticism of the access charges policy of the DB Netz AG already indicated that the overall level of the access charges would be too high, in particular due to the overload of employees at the Deutsche Bahn AG (Group) (Aberle and Brenner 1994, 707 f.).

DB Netz AG issued its first access pricing system on 1 July 1994, consisting of separate catalogues of prices and conditions for access to its tracks for passenger transport and for freight transport. Its major characteristics were quantity rebates, based on the total amount of train kilometres undertaken on the track network of DB Netz AG. Its successor, the second access pricing system (TPS 1998) was issued by DB Netz AG in June 1998. This revised rail track tariff system featured a two-tier level of charges. After obtaining an "InfraCard", the track user was charged a lower variable price or, on the other hand, without using this card, he was charged higher rates according to the actual services made use of. Within each demand group, rail track users were treated on equal terms. In the case of capacity constraints arising from the sheer volume of rail track usage, customers using "InfraCards" or the "VarioPreis" (variable charges system) were treated equally. The third access pricing system (TPS 2001), issued by DB Netz AG in 2001, was characterised by a linear tariff without volume discounts or optional "InfraCard". Instead, elements of product differentiation in the form of different categories of track capacities are offered.

So far, revisions of the access charge systems of the DB Netz AG only seem to occur in reaction to public debate. In particular, the argument that quantity discounts or non-linear tariffs would unilaterally favour the position of Deutsche Bahn AG (Group) as the dominant supplier of rail transportation services and conditions of equal access to the tracks would therefore be disturbed has led to the introduction of linear access charges, which are obviously inadequate to attract more traffic to the railway systems (Knieps 1998, 466 f.).

Active competition on the German railroad market is focused on commodity transportation within Germany as well as on local passenger transportation. Entry into cross-border transportation can rarely be observed; cabotage on foreign networks within other EU countries is almost nonexistent. Competitive bidding for subsidies for local passenger transportation takes place only to a limited extent (Aberle and Eisenkopf 2002, 68).

Deutsche Bahn AG (Group) is the largest provider of rail services in Germany. Based on mileage, by the end of 2003 its market share was 91 percent for local and regional passenger services, more than 99 percent for commercial long distance and interregional

passenger services, and 94 percent for freight services (NEA 2005, 13).⁴

Since the reform of the railway sector there has been almost no entry of commercial long-distance and interregional passenger operators in the German rail market. Few examples are: two lines with low frequency run by Connex ("InterConnex") and one international night train run by GVG. The market share of the competitors of Deutsche Bahn AG (Group) in non-commercial passenger services was less than 10 percent in 2003, including direct awards to federal state owned railway companies.

More entry can be observed in the German rail freight market. Although Railion (former DB Cargo) is still the dominant operator for freight (>91 percent in 2003), there are other private operators emerging in specific freight markets. The four largest long-distance providers are Railion (Stinnes-Logistics/Deutsche Bahn Group), TX Logistics, HGK/SBB Cargo (Co-operation), and Rail4Chem. In passenger operations the four largest are DB Regio AG, DB Reise & Touristik AG, Arriva Deutschland GmbH, and Connex Regiobahn GmbH (Connex Group) (NEA 2005, 13, 37).

The second phase of (de-)regulation: Introduction of market power regulation

The shift again towards market power regulation of rail access, which was initiated by the EU Directive 2001/14 of the railroad infrastructure package⁵ of February 2001, introduces several regulatory obligations for the provider of track access and requires a regulatory body to be set up in each member state. In Germany, a new regulatory authority, the Federal Network Agency (Bundesnetzagentur) has been established. It is responsible for sector-specific regulation for the telecommunications and postal sector, the electricity and gas sector, and the railway sector. According to article 3, detailed statements of the infrastructure provider are required, including details of the charging system and the principles and criteria

⁴ Similar figures are also presented in Lindemann (2004, 122).

⁵ The Rail Infrastructure Package contains 3 Directives: Directive 2001/12/EC of the European Parliament and of the Council of 26 February 2001 amending Council Directive 91/440/EEC on the development of the Community's railways, OJ L75/1, 15 March 2001; Directive 2001/13/EC of the European Parliament and of the Council of 26 February 2001 amending Council Directive 95/18/EC on the licensing of railway undertakings, OJ L 75/26, 15 March 2001; Directive 2001/14/EC of the European Parliament and of the Council of 26 February 2001 on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification, OJ L 75/29, 15 March 2001.

for capacity allocation (Annex I). Train service companies have the right to appeal to the regulatory agency against decisions of the track provider (Art. 30). The railroad package neither prescribes tariff structures nor enforces price regulations. It leaves a large scope of discretionary power to the regulatory agencies of the member countries.

In the meantime a new Infrastructure Utilisation Regulation has been passed in Germany.⁶ Based on the new EU Directives, a set of detailed requirements has been specified in order to improve the transparency of the principles and criteria for the allocation of track capacities as well as the principles of access tariffs. Negotiations concerning the level of infrastructure charges will in the future only be permitted if they are carried out under the supervision of this regulatory body.

During the first phase of (de-)regulation the debate on access charging seemed to neglect the remaining regulatory problems. An essential characteristic with respect to the supply of train services is its network structure. Incentives may exist for train companies for bundling traffic either on a given line (economies of scale) or in serving several lines jointly (economies of scope). Nevertheless, if in a particularly sparsely populated area there is a lack of competition between active firms in the market, this may be replaced by efficient potential competition. The pressure of potential competition is sufficient to create incentives for the active supplier of train services to produce more efficiently. Thus the actual number of active competitors is of negligible relevance, as long as potential entrants can play the role of disciplining the active providers. Therefore, the condition for the functioning of potential competition for disciplining firms already in the market is that the incumbent firms do not have asymmetric cost-advantages compared to potential entrants. Whereas active and potential competition of transportation firms acting on the track initiates a trend towards cost-oriented transportation tariffs, railway tracks themselves must be regarded as monopolistic bottlenecks. The theory of monopolistic bottlenecks is central to the disaggregated regulatory approach in terms of locating network-specific market power in connection with the efforts to determine the minimum basis for regulation (Knieps 1997a, 327–31; Knieps 1997b, 362–68).

⁶ Verordnung zum Erlass und zur Änderung eisenbahnrechtlicher Vorschriften vom 3. Juni 2005, Bundesgesetzblatt Jahrgang 2005, Teil I Nr. 32, ausgegeben zu Bonn am 13. Juni 2005, 1566–77.

The conditions for a monopolistic bottleneck facility are fulfilled

- 1) If the facility is necessary for reaching consumers, that is, if no second or third such facility exists, i.e. if there is no *active* substitute available. This is the case if there is, due to economies of scale and economies of scope, a natural monopoly situation, so that one supplier can provide this facility at lower cost than several suppliers; and
- 2) If at the same time the facility cannot be duplicated in an economically feasible way, that is, if no *potential* substitute is available. This is the case if the costs of the facility are irreversible.

The special focus of regulatory activity should be on the design of a symmetrical regulation of the access to monopolistic bottlenecks, combined with a regulation of access charges. Therefore, if a potential competitor plans an entry with a parallel track, the incumbent railway owner could reasonably threaten to reduce his tariffs to the short-run variable costs. Once a railway network is completed, one cannot expect further entries with additional tracks. The decision-relevant costs of entry include the costs of tracks, which cannot be covered by tariffs based on short-run variable costs. In contrast to the supplier of rail-services, the track owner in question has therefore obtained market power. Since competition among lines is lacking, unregulated access charges create the danger of the track owner exploiting his monopoly power.

The shift towards sector-specific *ex ante* regulation of access to the track seems necessary in order to discipline the impact of market power on the bargaining for access conditions. In contrast to competitive networks, the market power involved in network infrastructures characterised as monopolistic bottlenecks fundamentally disturbs such bargaining processes. One extreme alternative could be (vertical) foreclosure of competitors on a complementary service market. A tying of this sort can be used as a method of price discrimination, enabling a monopolist to earn higher profits. Another way of abusing market power within the bargaining process on access conditions is to provide insufficient network access quality or demand excessive access charges.

An adequate starting point for regulatory intervention when market power is involved in access processes seems to be the “essential facility” doctrine. Well known and often applied in US antitrust law, the essential facility doctrine gains increasing impor-

tance also in European competition law. The focus is on access to monopolistic bottlenecks on equal terms for all competitors. It is through the application of the 1890 Sherman Act that the essential facility doctrine has developed in the US.

Liability under the essential facilities doctrine is based on the following criteria:

- 1) Control of an essential facility by a monopolist (endowing monopoly power);
- 2) A competitor's inability, in practical or reasonable terms, to duplicate the facility;
- 3) The denial of the use of the facility to a competitor; and
- 4) The feasibility of providing the facility.

In the context of the disaggregated regulatory approach the essential facilities doctrine is no longer applied case by case – as is common in US antitrust law – but to an entire class of cases, namely, monopolistic bottleneck facilities. The design of non-discriminatory conditions of access to essential facilities must be specified in the context of the disaggregated regulatory approach.

Whereas ex ante regulation of access to railroad tracks seems necessary, this should, however, not lead to over-regulation. It is important to differentiate between the price level, which has to be regulated, and the pricing structure, which must remain unregulated. Regulators should neither be allowed to prescribe pricing roles that focus on tariff structures within monopolistic bottlenecks nor to forbid per se the implementation of non-linear tariffs. Price cap regulation in the monopolistic bottleneck areas and accounting separation are necessary for disciplining the remaining market power and ensuring non-discriminatory access. Detailed input regulation contradicts the spirit of a price cap regulation. Not only in competitive subparts of networks, but also in the monopolistic bottleneck areas pricing structures should be flexible and the result of endogenous market processes. The welfare-increasing effects of price differentiation should not be impeded by asymmetrical regulatory intervention.

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