

**Competition for Cooperation - The Internal Market Program of the EC -  
Commission and the European Railway Reforms of the 1990's**

**Ira Denkhau**

*Max Planck Institute for the Study of  
Societies*

---

**Abstract:**

A mix of European and national reform motives and pressures lead most of the EC-Member states to encompass restructuring of their domestic railway industry. Although the reform models for the European railways differ, they nevertheless exhibit two peculiar features as compared with railway reforms in the rest of the world. Those features are the (vertical) separation of infrastructure management from transport operation and the contractualisation of the relationship between public authorities and the railways. This paper shows that these peculiarities of the European railway reforms are the result of a combination of the EC - Commission's railway policy in the context of the completion of the European Single Market with the diffusion of policy elements from one country to another. The Commission's principal policy objective is to overcome the traditional organisation of the Member state's railway industries as publicly owned and nationally integrated monopolies which it considers as the source of the predominantly domestic focus impeding the development of international railway transport in Europe and of anti-competitive state aid-practices

---

**Contact Author:**

Ira Denkhau  
Max Planck Institute for the Study of Societies  
Lothringer Straße 78  
D-50677 Köln  
Germany

telephone: +49 (0) 2 21 / 3 36 05-57 fax: +49 (0) 2 21 / 3 36 05-55  
email: denkhau@mpi-fg-koeln mpg de

---

## **Introduction**

The 1980s saw the surge of the EC Commission towards the completion of the internal market without frontiers to trade and services till 1993. In that context, liberalisation and deregulation became the ultimate rationale of EC-policy in general. At the same time, the public railway companies in virtually all the European states were facing a serious economic and financial crisis. Their market share in passenger as well as freight transport was dropping steadily, annually rising deficits accumulated to heavy debt burdens further aggravating the financial crisis. The European liberalisation of road transport followed by deregulation of most of the national road haulage sectors and obvious shortcomings of international rail transport further accelerated the loss of market share in the railways. Lacking technical interoperability of the European networks and poor cooperation among European public railway companies impeded the part-taking at the growing amount of international transport due to increasing economic integration in Europe. Willingness and ability of the national governments to assist their national railways with higher subsidies or deficit-coverage decreased. In the EC-member states the decrease was partly due to the objective of meeting the convergence criteria for the participation at the European Monetary Union (EMU) setting out maximum levels for annual state budget deficits (3% of the GDP) and public debt (60% of GDP).

The European railways were, therefore, confronted with a mix of European and national reform objectives. Meanwhile, most of them underwent or are undergoing encompassing restructuring and even privatisation. Having in mind the very homogenous initial situation those reforms departed from - a nationally integrated public railway company in each of the cases - it is surprising how widely the reform approaches differ. But in comparison to railway reforms outside of Europe, e.g. in Japan, the United States, Argentina and New Zealand, the European railway reforms of the 1990s are exhibiting two special features both of which can clearly be traced back to the influence of the EC-Commission in this policy area. Those characteristics are the (vertical) separation of infrastructure management from transport operation and the contractualisation of the relationship between public authorities and the railways via franchising, concessions or other forms of ordering public services provided by the railways.

This paper shows how those special patterns in the European railway reforms evolved as a mixture of the EC-Commissions policy initiatives and the diffusion of "successful" reform elements from one country to another. The first part will deal with the special features of the railway industry leading to the proposals for vertical disintegration of railways and for the contractualisation of the relationship between public authorities and the railways respectively. The next section discusses the rail policy of the EC-Commission and the turning point that the Swedish railway reform of 1988 marked for the liberalising ambitions of the Commission as directed towards the railway. The following part will give an overview of how vertical disintegration and contractualisation diffused as a policy pattern in European railway restructuring programs. Brief country reports will highlight the present situation in each of the European countries and the European situation will be compared with railway reforms internationally.

## Special features of the railway industry

### *Natural monopoly and the separation of infrastructure and operations*

Within the academic debate on market failure, railways served as the classical example to describe the case of a natural monopoly. A natural monopoly is defined as a situation in which a single firm is more efficient in producing the desired output than any other combination of firms in the industry (Sharkey 1982, 54). The sufficient condition for a natural monopoly is the sub-additivity of the firms' cost function (Baumol, Willig and Panzar 1982: 17). Sub-additivity of the cost-function occurs if the percentage of fixed or sunk costs of the industries' total costs is high and the industry has to suffer from long-sustained and recurrent periods of excess capacity. Both these circumstances, which are also cited as the major factors causing instances of destructive competition (Kahn 1971: 173), are common for railway enterprises. Economic theory, therefore, perceives situations of a natural monopoly, the occurrence of economies of scale and destructive competition as strongly interdependent and railways as a classical example of it (Sharkey 1982: 20). Along that line of argument the public ownership and regulation of nationally integrated railways has been justified first place (Nash and Preston 1994: 20).

However, since then, major changes occurred in mainly two areas: namely economic theorizing and the technology application in the railway industry. Progress in economic theory was initially marked by the concept of contestable markets (Baumol and Willig 1981; Baumol, Panzar and Willig 1982). The theory of contestable markets identifies three necessary conditions under which natural monopolies function as if they were proper markets. The monopolist is under those conditions "contested" by potential competition instead of real competition since he has to fear new entries to the market in case he exercises monopoly power. New entries to a natural monopoly market, that probably will take the form of hit-and-run-entries, are likely to appear only if

- no sunk costs occur, i.e. investments that are irreversible when exiting the market again, occur,
- all market participants are perfectly informed (no information costs) and
- all market participants show Bertrand-Nash-behaviour, i.e. the potential entrant to the market perceives the price set by the monopolist as fixed and takes his decision on that basis (Blankart and Knieps 1992: 75)

Since rail transport traditionally encompasses very large specific investments (tracks, stations, rolling stock, etc.), that would be lost in the case of a hit-and-run entry, whereas they lose their significance for the decisions of the monopolist once the investment is taken, the railway industry as a whole clearly can not be regarded as a contestable market (Dodgson 1995: 46).

The notion of contestable markets served as the basis for the development of a new approach in regulating natural monopolies. Since the sunk costs were discovered to play a decisive role, contestability can be created in the infrastructure network-based natural monopoly industries such as telecommunications, electricity supply and rail transport by separating the operation of services from the management and development of the infrastructure network. By vertically disintegrating those industries into separate companies for infrastructure and operations, the natural monopoly is restricted to the physical network. Therefore, only the infrastructure company has to remain subject to

public regulation, while the operating companies can be governed by market relations (Denkhaus and Schneider 1997).

A vertical disintegration can be effected in various ways. First, it is possible to provide simply for separate accounts for the infrastructure management (construction, maintenance, administration) apart from the operational sections within one integrated railway enterprise. The infrastructural functions may not even be organized in business units separate from the transport operating functions of that railway company. The aim here is to gain greater transparency of the costs related to the infrastructural responsibilities of the respective railway undertaking. This organisation, however, is not very useful if third parties are allowed to compete against this integrated railway enterprise on its' proper network. The possibilities for discrimination of new entrants to the market by the railway company owning the tracks are ample. If competition in the market is to be effected with vertically integrated railway undertakings, then, at least some parallel tracks are needed.

A second possibility of separating infrastructure management from transport operation is to create separate business units for those functions. This is referred to as organisational separation and usually takes the form of business units (with full result responsibility) for the different market areas in transport (e.g. freight, InterCity passenger, regional passenger transport), the rolling stock and the management of the infrastructure network under the umbrella of some kind of holding company. The latter integrates central functions such as controlling, personnel and training or strategic policy tasks. The clearest form of separation, however, is the one implemented in Sweden in 1989 and since named "institutional" separation of infrastructure network and transport operations. Here, separate organisations (institutions) are created to manage the rail network and to operate trains on that network independently from each other. This is clearly the best organisational form for the railway industry if the creation of competition on a single railway infrastructure network is among the primary objectives of the reform.

An alternative solution for the regulation of natural monopolies is their horizontal disintegration. Here again the natural monopoly is restricted, in this case regionally in the form of integrated regional companies. This refers to the understanding that the subadditivity of the cost-function establishing a natural monopoly can often be limited to different parts of the network as subsystems (Beesley and Littlechild 1986: 40-43). Both approaches have found application in the deregulation of European utility industries. The EC-Commission, however, with its inclination to create an open market with freedom of provision of services in Europe, favours the vertical separation approach (open network-access).

Prerequisite to the implementation of both the vertical and the horizontal disintegration schemes are recent major technological innovations in railway equipment. Without encompassing information systems such as modern train control systems separating the operation of trains from the infrastructure management would be virtually unthinkable (Denkhaus 1995). It was the technological innovations themselves, that first led economists to question the maintained monopoly character of those sectors traditionally treated as natural monopolies. Recalling the three conditions establishing contestability it can be stated that new technologies play a fundamental role in lowering information

costs and therefore enhancing the information of the market participants. But albeit with all economic theorizing, the efficiency enhancing results of the vertical as well the horizontal disintegration of the former public monopolies are far from being evident or proved (Mayntz 1993: 106).

***Rail transport as a public service: The case for contractualisation***

While railways represented a virtual transport monopoly for all of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> century, their significance nowadays has sharply declined. While in freight transport most of the European railway companies are at least theoretically regarded as viable on their own accounts, passenger transport is a different story. Here railways show fundamental public benefits as far as transport opportunities for the disfavoured, environmental sustainability and transport in urban agglomerations is concerned. These undeniable public benefits, however, are not balanced by equally economic benefits for the railways. Contrarily, especially the regional passenger and commuter transport by rail is in deficit virtually everywhere in Europe and some of the InterCity-links are non-profitable as well (for an example see Fournier 1993: 27-28).

This situation was further reason for the public monopoly status that the European railways had since the 1930s<sup>1</sup> The socially desirable transport operations were delivered by cross-subsidization from the profitable areas of the railway industry and by means of global public subsidization of the national railway company. The shortcomings of this organisation became quickly evident: The "soft budget constraints" (Kornai 1979) for the public railway corporations with public subsidies readily available led to virtually no effort in efficient resource allocation and poor management, the national railways became captured by various political interests, transport services quality and financial viability deteriorated<sup>2</sup> Together with the move towards deregulation and marketization of the railway industries, new solutions for maintaining socially desirable transport operations as public services had to be found.

Contractualisation here refers to the clarification of tasks and duties of the railway company on the one hand and the state on the other by means of the completion of legally binding contracts. Beesley and Littlechild (1986) in their initial proposition for rail privatisation in the UK called this a system of "explicit subsidies" from public authorities to transport operating companies. Within that broader context different systems of contractualization can be distinguished. A franchise can be defined as a contract between a public authority (the franchisor) and a company (the franchisee), by which the latter obtains the right to operate a certain transport system - either with payment to or with subsidies from the state (Nijkamp and Rienstra 1995: 229). The term concession is usually used synonymously. Public service contracts are legally binding agreements specifying the frequency and quality of the services to be provided by the transport company - in our case the railway operator - in public interest and the amount of compensation payments by the state for the provision of those services. Public service

---

<sup>1</sup> British Railways was nationalised in 1947, the rest of the European railway companies were taken into public ownership before World War II

<sup>2</sup> For alternative explanations of the empirically obvious inefficiency of public enterprises see the residual claimant-approach (Alchian/ Demsetz 1972) and the dispersed-knowledge theory (Hayek 1949)

contracts can, but aren't required to entail competitive tendering. Regardless of the concrete forms the contractualisation takes in each country, it is the clarification of the relationship between public authorities and the railway company that makes the difference - especially as far as the EC-Commission is concerned, as will soon be shown.

## **Rail policy in Europe: The efforts of the Commission and assistance from Sweden**

### ***Development of the European rail policy***

Transport policy, earmarked as common policy area in articles 74-84 of the Treaty of Rome, was among the first policy areas where the EC had genuine competences. The starting point for the common railway policy in the 1960s was the notion that the traditional organisation of the industry in national monolithic monopolies under public ownership was the reason for the dominantly domestic focus of rail transport that impeded European integration in rail transport. Infrastructure planning, time tabling and commercial policies of the railways were aligned domestically. Since the public railway corporations were buying exclusively national, technical incompatibilities in rail transport have been conserved till today creating massive problems for international transport operations. For instance, the railway current systems within the EC differ from country to country, necessitating a change of locomotive or of pantograph at each national border. At the same time, the international cooperation of the European railway industries effected through the UIC (Union Internationale des Chemins de Fer, International Railway Association) and from the early 1980s onwards the CER (Community of European Railways) remained relatively poor. International transport operation were subject to extended bi- or multilateral treaties between the relevant public railway corporations (Knieps 1996: 31).

Despite these insights of the Commission, the common transport policy remained fruitless until the mid-80s. The legislation of the European Council of Ministers on railway-related matters remained very restricted and reached only preliminary preparations for the creation of a European transport market. In addition, the early railway legislation of the EC suffered from a dispersed and partial implementation by the EC-member states. At any rate, several EC-legislations from 1965 onwards already contained the essence of the Commissions understanding of public service contracts as applied to the railway industry. Article 92 of the EC-treaty establishes the regime of state aids. Accordingly, state aids that distort competition are inconsistent with the treaties, if they affect international trade adversely. In respect to public services article 77 of the EC-treaty, however, provides for an exemption.

This was applied to the transport sector in the Council regulation 1192/69 on common rules for the normalisation of accounts of railway undertakings (Official Journal L 156, 28 June 1969) and 1107/70 on the granting of aids for transport by rail, road and inland waterway (Official Journal L 130, 15 June 1970). Alongside detailed provisions according to the railways finances these regulations set up the principle of contractualisation of the financial relationship between public authorities and the railway companies. The objective of the Commission was to clarify the financial relationship between the member states and their railways in order to prevent state aids

with distorting effects and in order to provide for a greater commercial autonomy of the public railway corporations. However, the national implementation of the Commissions' propositions, which left the decision-making process in the Council already in a watered down version, was relentless and led to little or no change in management and regulation of the national railway corporations. Furthermore, some of the public functions of the railways corporations with fundamental deteriorating influence on their financial situation such as serious overstaffing as part of public labour policy or the "buy national"-procurement policy were totally neglected by the EC-regulations (Waele 1993).

After consultation with the national railway companies the Commission took action towards liberalisation in the early 1980s. The Council decision 82/529/EEC of July 1982 (Official Journal L234 of 9 August 1982) provided for the free price fixing for international rail transport. Decision 83/418/EEC (Official Journal L 237 of 26 August 1983) laid down certain principles to ensure the commercial autonomy of railway corporations in respect to international passenger and luggage transport. Early in 1984, the Commission presented an initiative that foresaw a separation between infrastructure and transport operations in European rail transport and a liquidation of the public railway corporations' debts (COM (83) 764 final). The motives of the Commission inherent in the proposition of a vertical disintegration of the European railway industries were twofold:

- The Commission endeavoured to provide for competition in European rail transport by following the principle of open network access in the broader context of the Single Market program prescribing freedom to provide services. This has to be seen in close relation to the European competition policy and to the debate in the context of the Single European Act.
- The Commission aimed at increasing the performance of railways in international transport by overcoming the hitherto dominantly domestic focus of the public railway companies. This became especially urgent in the face of an ever-growing proportion of international transport due to tightening economic integration.

But the Council was not ready to take action on this initiative yet and it was dropped. This readiness to seize concrete action towards the creation of a common transport market essentially increased just only after the judgment of the European Court of justice on the Council's failure to act in the field of common transport policy in May 1985. The European Court of Justice called upon the Council to lay down common rules establishing full freedom to provide services in international transport and to determine the conditions for the complete liberalisation of transport services within the EC (Seidenfus 1994: 36).

This new momentum for transport liberalisation in the EC was further enhanced by the agreement on the Single European Act in 1986, which prescribed the completion of the European Single Market till 31 December 1992 at the latest. The common transport market to be created in the context of the completion of the Single market had to be organized according to market economy principles already laid down in the Treaty of Rome and was to provide for commercial freedom of all European transport enterprises. In the context of the completion of the Single Market, a good part of the infrastructure network-based industries have experienced or are undergoing liberalisation. Those liberalisations usually entail some kind of distinction between commercially viable and

public services, the contractualization of public services from public authorities to service providers, at best via competitive tendering, with some kind of vertical disintegration of network infrastructure and transport operation (Stoffaës, Berthod and Feve 1995: 133-134)

In its deregulation efforts the Commission, however, concentrated first on air and road transport and there again favoured liberalisation over harmonisation, especially since the latter was hard to attain due to resistance from virtually every Member state. The resumption of the rail liberalisation efforts of the early 80s required progress in road transport deregulation and a proof of practicability of the Commissions' proposals before it could become effective in the Council of ministers. The ongoing liberalisation of road haulage was challenging the railways in the few operations that had stayed profitable so far, while the tightening of economic integration due to the Single Market program lead to growing international transport operations and exposed the shortcomings of rail transport in that area. In this context, the example of Sweden with the first implementation of the so far only theoretically developed vertically disintegrated organisation structure of the railway industry was vital for the Commission to show the practical viability of the liberalisation proposals.

### ***The restructuring of Swedish Railways (SJ) in 1988***

After several unsuccessful attempts to enhance the economic and financial situation of SJ within its' traditional organisational form, the Swedish parliament in 1988 agreed on a reform proposed by the government. In January 1989 a "road transport model" was implemented. It entailed the Swedish state taking over the infrastructural responsibility from SJ and the creation of a new administrative body for the management of railway infrastructure (Banverket, BV) analogous to the organisation of the road administration.

Whereas the infrastructure manager BV was created as part of the general public administration, the remaining SJ - from now on responsible only for transport operation on the national railway network - was transformed into a joint-stock company. SJ is to be managed like a private enterprise, from 1989 onwards its' sole objective is to be commercially viable without any state-aid (Brandborn and Hellsvik 1990: 342). A privatisation of SJ is so far not envisaged. SJ has to pay infrastructure usage fees that are composed of a fixed part as a remuneration for the wear on the railway infrastructure and a variable part representing the social costs of accidents and environmental damage. The fees, however, are not payed to BV but directly into the public budget. The total amount of fees represents about a fifth of BV's annual budget (Larsson and Ekström 1993: 59).

With most of Swedish regional transport as well as some InterCity-relations being highly in deficit, however, a solution had to be found for the continued flow of public funds without distorting the clear management objectives and financial relations of SJ. The problem was solved by implementing a competitive tendering system for the grant of exclusive concessions. At the regional level, the county transport authorities, founded in 1978, were decided upon as public authorities responsible for the tendering and concessioning process. The county transport authorities in turn are controlled by the county governments and parliaments. The concessions to be granted cover the whole

range of public transport in the 25 Swedish counties. Instead of tendering, the county transport authorities may either take over the respective regional railway lines in their own operational responsibility or close them down, as well. At the national level, the non-profitable InterCity-lines that are to be maintained in public interest are subject to contracts between the Swedish government and SJ (Larsson and Ekström 1993: 60-61). The freight transport of SJ had to be commercially viable and depicted a monopoly of SJ until in 1996 the open access for all freight operations to the Swedish railway network was implemented.

The initial proposition of the vertical separation between infrastructure and operations as an element of the Swedish railway restructuring seems not to have been influenced by the EC-Commissions' initiative in 1984 (Aberle and Brookshire 1990: IV-1), but rather appears as a consequence of the endeavour to implement an equally legal and administrative status of road and rail. At the same time some other European states were experimenting with a separation between network and railway operations in the accounting sense, but none went as far as Sweden (Freeman 1992: 663). With the practical feasibility of vertical disintegration the Swedish railway reform represented, the Commission could follow its plans for the implementation on a European scale with a new momentum. The Commission made use of the experience with reforming SJ when preparing the initiative for the directive on the restructuring of railways in Europe in 1991 (Interview of the author with a representative of the Deutsche Bahn AG (German railways) at Brussels in May 1996). The European legislation of the years 1991 and following - interdependently with the example of Sweden - then in turn acted as a catalyst for the successor railway reforms in Europe, as will be shown (Larsson 1992: 31)

### *The significance of the Swedish rail reform for European rail policy*

Early in 1990 the Commission forwarded a new initiative for the liberalisation of European railway transport to the Council of ministers (COM (89) 564 final). This proposal was more successful than its predecessor and led to two legislations by the Council:

- Directive 91/440/EEC on the development of the Community's railways (Official Journal L 237, 24 August 1991) and
- regulation No. 1893/91 amending regulation No. 1191/69 on action by Member States concerning the obligations inherent in the concept of a public service in transport by rail, road and inland waterway (Official Journal L 169, 29 June 1991)

The directive 91/440 provided for the autonomy of the management of railway undertakings, a fundamental reorganisation of the public railway companies' financial situation, track access rights for international passenger and freight transport organized by international groupings of railway corporations and internationally combined transport organized by single railway companies and a vertical separation of the infrastructure network from transport operations at least in the accounting sense. The initiative of the Commission originally called for an institutional separation of infrastructure from transport operations, that is for the creation of separate companies for the rail infrastructure network and the transport operations on that network respectively according to the Swedish example. The proposition was strongly opposed by

most of the European railway companies as well as some national governments represented in the Council, e.g. France (Interview with a representative of the Deutsche Bahn AG (German railways) at Brussels in May 1996; Jakubyszyn 1996).

Regulation No. 1893/91 contains detailed regulations with regard to the release of the railway companies from global public service requirements and the delivery of public services in rail transport by means of contracts with public authorities. According to a member of the EC-Commission a regionally delimited concessioning of exclusive transport operating rights by EC-wide's competitive tendering is regarded as the optimal solution (Philip Lowe (Chef de Cabinet to the European Commissioner on transport, Neil Kinnock) at the "European Rail '97" conference 13./14.3.1997 Amsterdam). Article 90 of the EC-treaty provides for the control of the EC-Commission over public enterprises and enterprises that provide services of general public interest, such as utilities. The application of article 90 represents the strongest influence the Commission can exert over companies and could be used in European rail transport in order to enforce the national implementation of the provisions of regulation 1893/91 (Jakubyszyn 1996).

In 1995 the directive 91/440 was complemented by the directive 95/18/EEC on the licensing of railway undertakings (Official Journal L 143, 27 June 1995) and the directive 95/19/EEC on the allocation of railway infrastructure capacity and the charging of infrastructure fees (Official Journal L 143, 27 June 1995). In November 1995 the EC-Commission initiated the full liberalisation of railway transport, but again failed due to opposition in the Council.<sup>3</sup> When this failure became clear, the transport Commissioner Neil Kinnock took further action to avoid a new period of inactivity in common rail transport policy and to keep momentum for rail liberalisation in Europe (Philip Lowe (Chef de Cabinet to the European Commissioner on transport, Neil Kinnock) at the "European Rail '97" conference 13./14.3.1997 Amsterdam). A group of railway experts were put in charge of a report on the future of European rail transport. The report from this group of experts then served as basis for a White Paper from the EC-Commission presenting the strategy for revitalising the Community's railways, published in summer 1996 (COM (96) 421 final). Broadly speaking, the White Paper provides for a more moderate strategy of rail liberalisation in Europe - without the endeavours of contractualisation and vertical separation being abandoned. The Commission seems to have postponed its plans for full liberalisation until a better moment arrives to pass them through the Council. As the glance on the recent developments in the Member state's railway industries now to follow shows, time may well be working in favour of the Commissions ambitions.

### ***Proceedings towards liberalisation of rail transport***

Originally, the directive 91/440 was to be implemented in the EC-Member states by the end of 1993. But little happened till then. Most of the European countries simply implemented a separation of infrastructure and operation in accounts and made no efforts in the direction of an encompassing reform of their national railway industries.

---

<sup>3</sup> Since violent strikes of the railway and other public service workers were paralysing France in November and December, France had no possibility to agree to any new EU-liberalisation initiative.

That situation began to change in 1995 with a growing number of member states initiating comprehensive restructuring schemes for their domestic railway industries. The following section will highlight the reform efforts taken and the restructuring programs implemented in the European countries so far.

***Railway reforms across Europe and the impact of diffusion-processes***

Table 1 in Appendix A provides an overview of the railway reforms implemented or planned in western Europe. All EU-member states except Ireland - which is, as an island without connection to the pan-European railway network, of little interest to the European Commission's competition policy - engaged in at least minor railway reforms from 1989 onwards.<sup>4</sup> The table is ordered chronologically with Sweden being the starting point. If two dates are indicated in the row "date of reform", the second figure refers to a second round of railway reform supplementing the initial reform initiative. The data provided in the table shows that some form of vertical separation of infrastructure and operation has been implemented or is due to be implemented everywhere in the EU. Contractualization also forms part of all the reform approaches. The same holds for Switzerland and Norway, though both are not members of the EU. This hints at the strength of the combination of the Commission's efforts with the transfer of "successful" policy solutions: Even the institutional landscape of non-EU-states in Europe is influenced.

Another striking feature is the common shift towards the institutional separation between infrastructure and operation in the EU, although a majority of member states was opposing this solution in the negotiation of Directive 91/440. Meanwhile, all the EU-member states except Belgium, Luxembourg, Austria, Germany and Italy have implemented the institutional form of vertical separation. In the latter two countries, further steps towards institutional separation are anticipated. Luxembourg and Belgium have chosen to limit their reforms to a mere separation of the units accounts. The latter is still deciding on the form of a more comprehensive railway reform. Austria and Switzerland have chosen the organisational form of vertical separation while the other non-EU-state, Norway, followed the institutional separation approach.

The information given in the last row of table 1 concerns the degree of liberalisation of the access to national networks. The fact that the vertical separation forms such a prominent feature among the European railway reforms stands in no direct relation with the degree of competition allowed on the national networks. This finding strongly hints at a diffusion process leading to the spread of the policy solution of vertical separation rather than a success of the European Commission's open access regime. In order to substantiate this idea, the European experience has to be compared with the developments at the international level.

---

<sup>4</sup> For recent publications on the railway reforms in France see Blier (1997), in the UK see Harris and Godward (1997) and in Germany see Denkhäus and Schneider (1997)

**Table 2** Railway reforms international: Overview of reform models (6/97)

	USA	JAP	NZ	CAN	ARG	BRA	MEX	CHI
<i>Date of reform</i>	1986	1987	1990-1993	1995	1992-1994	1996	1992	1995-1997
<i>Vertical separation</i>	none	none	none	none	none	none	none	none
<i>Horizontal separation</i>	yes	yes	none	yes	yes	yes	yes	yes
<i>Contractualization of public services</i>	in some cases competitive tendering	none	in some cases competitive tendering	competitive tendering	in few cases concessioning			
<i>Liberalisation</i>	regional monopolies	regional monopolies	monopoly in the domestic railway industry	competition in the domestic railway industry	regional monopolies	regional monopolies	regional monopolies	regional monopolies

Source: Own data assessed by a questionnaire and content analysis of the media. Shires *et al* (1994) and Kopicki and Thompson (1995) provide overviews of railway reforms.

The analysis thus far has shown that the separation between infrastructure and operation and the contractualization of public services are distinctive features of European railway reforms and can be traced back to the Commission. These findings are further strengthened, when the railway reforms in the EU are compared with those of states outside of Europe (USA, Japan, New Zealand, Canada, Argentina, Brasil, Mexico, Chile). Table 2 above depicts those railway reforms.

In none of the cases a vertical separation of infrastructure and operation was implemented. Instead, the horizontal form of separation of the industry into several independent regional companies in the domestic market serves to restrain the natural monopoly character of the market.<sup>5</sup> As far as contractualization is concerned, the data shows that this is not as widespread as in Europe, with the USA and New Zealand using competitive tendering only in some cases. The Latin American states attempt concessioning schemes only in a few cases for the provision of non-profitable public services. Japan, where no non-profitable rail passenger services exist depicts a special case.

<sup>5</sup> Exemptions to that rule are New Zealand, where neither a vertical nor a horizontal disintegration has been implemented, and - inside of Europe - the United Kingdom, where both, vertical and horizontal separation formed part of the railway privatisation

## **Conclusions**

Two particular features distinguish railway reforms in Europe from reform approaches taken in countries outside of Europe. These particular features are the vertical separation of the railway industry and the contractualisation of public services between the state and the railway company(ies). All reform approaches chosen in the European context include some form of vertical separation, mainly taking the form of institutional disintegration, i.e. the creation of separate institutions for the management of the railway infrastructure network and the operation of rail services (Denmark, Finland, France, Netherlands, Portugal, Spain, Sweden, UK). But the vertical separation of the railway industry can take the form of either an organisational separation into distinct business units (Germany, Italy) or a mere separation of the railway companies accounts (Austria, Belgium, Luxemburg) as well. As for the second reform feature particular to Europe, some form of contractualisation of the relationship between state and railway company has been implemented in some form in virtually all European railway reform models.

Both these elements can be traced back to the influence of the EC-Commission, which aims at the completion of an internal market in the EU allowing for free, non-discriminatory market access for service providers. Within that context, the EC-Commission took the chance for new policy initiatives in the transport sector and managed to unsettle the traditional vertically and nationally integrated organisation of the member states' railway industries. Exceptional is not the mere fact that the Commission's policy has an impact on the Member states level, but it is the scale and scope that the impact has had - particularly evident when contrasted to the developments outside of Europe. In neither of the examples highlighted (USA, Canada, New Zealand, Japan, Argentina, Brasil, Chile, Mexico) has an organisational form of vertical separation been chosen. Nor do contracts between public authorities and the railway companies play a role as dominant as in Europe. On the other hand, the examples of two non-EU-states in Europe (Norway, Switzerland) show the strength of policy diffusion patterns which the Commission could utilise to promote its own policy ambitions. Therefore, the railway reforms across western Europe are clearly distinguishable from those taking place on a worldwide scale. Nevertheless, as the description of the various European restructuring models has shown, the EU-member states are left with a wide scope for discretionary decision-making that they use according to their national preferences, economic policies and institutional structures.

Table 1 Railway reforms in Europe: Overview of reform models (June 1997)

	SWE	BEL	ITA	LUX	AUT	GER	UK	FIN	NL	FRA	DEN	NOR	SPA	POR	CH
<i>Date of reform</i>	1989, 1996	1992	1986, 1992	from 1993 onwards	1993/94	1993/94 1996	1994 - 1997	1995	1995/96	1996/97	1996/97	1990, 1996	from 1996 onwards	expected in 1997/98	1997/98
<i>Vertical separation</i>	institutional separation	separation in the accounts	organizational, institutional separation planned	separation in accounts	organizational separation	organizational, institutional separation planned	institutional separation	institutional separation	institutional separation	institutional separation	institutional separation	institutional separation	institutional separation	institutional separation	separation in accounts organizational planned
<i>Horizontal separation</i>	none	none	none	none	none	none	yes	none	none	none	none	none	none	none	none
<i>Public services ensured by</i>	competitive tendering	public service contracts	competitive tendering planned	public service contracts	competitive tendering	competitive tendering	franchising (concessioning)	public service contracts	competitive tendering planned	competitive tendering (test stage)	public service contracts	public service contracts	competitive tendering	franchising (concessioning) planned	competitive tendering planned
<i>Liberalisation</i>	partly implemented, further steps planned	monopoly, track access only according to 91/440	full liberalisation planned	monopoly, track access only according to 91/440	far-reaching liberalisation planned	track access fully liberalised	far-reaching liberalised	far-reaching liberalisation planned	far-reaching liberalisation planned	monopoly, track access only according to 91/440	monopoly, track access only according to 91/440	monopoly, track access only according to 91/440	far-reaching liberalisation planned	monopoly, track access only according to 91/440	far-reaching liberalisation planned

Source: Own data assessed by a questionnaire and content analysis of daily newspapers, transport magazines

## References

- Aberle, G and K Brookshire (1990) *Ausländische Modelle einer Trennung von Fahrweg und Betrieb bei den Eisenbahnen. Untersuchung im Auftrage der Regierungskommission Bundesbahn* Gießen: Universität Gießen
- Alchian, A and H Demsetz (1972) Production, information costs, and economic organisation *American Economic Review* 62 (4), 777-795
- Baumol, W J, J C Panzar and R D Willig (1982) *Contestable markets and the theory of industry structure* New York: Harcourt Brace Jovanovich
- Baumol, W J and R D Willig (1981) Fixed costs, sunk costs, entry barriers and sustainability of monopoly *Quarterly Journal of Economics* 95, 405-431.
- Beesley, M and S Littlechild (1986) Privatisation: principles, problems and priorities, pp 35-57 of Kay, J et al (eds) *Privatisation and Regulation - The UK Experience* Oxford: Clarendon
- Blankart, C B and G Knieps (1992) Netzökonomik *Jahrbuch für Neue Politische Ökonomie* 11, 73-87.
- Blier, G (1997) *La nouvelle géographie ferroviaire de la France* 3 vols Paris: La Vie du Rail
- Brandborn, J and L Hellsvik (1990) Die neue Eisenbahnpolitik in Schweden *Internationales Verkehrswesen* 42, 342-348.
- Denkhaus, I (1995) *Verkehrsinformationssysteme. Durchsetzbarkeit und Akzeptanz in der Bundesrepublik Deutschland* Wiesbaden: Deutscher-Universitäts-Verlag
- Denkhaus, I and V Schneider (1997) Privatisation of infrastructures in Germany, forthcoming in J-E Lane (ed.) *Public sector reform. Only deregulation, privatisation and marketization?* London: Sage
- Dodgson, J (1995) Railway privatisation and network access in Britain, pp. 35-58 of European Conference of Ministers of Transport (ECMT) (ed) *Why Do We Need Railways?* (International Seminar 19th-20th January 1995) Paris: OECD
- Fournier, J (1993) *Le Train, L'Europe et le service public* Paris: Édition Odile Jacob
- Freeman, A G (1992) Privatisation - world status report *Modern Railways* 49, 662-665.
- Harris, N and E Godward (1997) *The privatisation of British Rail* London: The Railway Consultancy Press
- Hayek, F von (1949) *Individualism and economic order* London: Routledge & Kegan Paul
- Jakubyszyn, C (1996) Le gouvernement français s'oppose à la déréglementation européenne dans les chemins de fer *Le Monde* (4 October 1996), 4
- Kahn, A E (1971) *The economics of regulation: principles and institutions* (Vol. II) New York: Wiley
- Knieps, G (1996) *Wettbewerb in Netzen. Reformpotentiale in den Sektoren Eisenbahn und Luftverkehr* Tübingen: Mohr

- Kopicki, R and L S Thompson (1995) *Best methods of railway restructuring and privatisation* (CFS Discussion Papers Series, Number 111) Washington D C.: The World Bank
- Kornai, J (1979) Resource-constrained versus demand-constraint systems *Econometrica* 47 (4), 801-819
- Larsson, S (1992) Die Schwedischen Staatsbahnen SJ, pp. 138-144 of H Dürr and K Reimers (eds) *Die Bahnen Europas* (Jahrbuch des Eisenbahnwesens Folge 43) Darmstadt: Hestra
- Larsson, S and A Ekström (1993) The case of the Swedish railways, pp. 51-80 of European Conference of Ministers of Transport (ECMT) (ed) *Privatisation of railways* (Report of the 19th Round Table on Transport Economics held in Paris 4th-5th February 1993) Paris: OECD
- Mayntz, R (1993) Grosse technische Systeme und ihre gesellschaftstheoretische Bedeutung *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 45, 97-108
- Nash, C A and J M Preston (1994) Competition in rail transport: a new opportunity for railways? *Netzwerke - Berichte aus dem Institut für Verkehrswissenschaft der Universität Münster* (7), 19-37
- Nijkamp, P and S A Rienstra (1995) Private sector involvement in financing and operating transport infrastructure *Annals of Regional Science* 29, 221-235
- Seidenfus, H St (1994) Europäische Verkehrspolitik auf dem Prüfstand - Illusionen und Realitäten *Österreichische Zeitschrift für Verkehrswissenschaft* 40 (1/2), 33-42
- Sharkey, W W (1982) *The theory of natural monopoly* Cambridge, MA: Cambridge University Press
- Shires, J D et al (1994) *Rail privatisation: the practice. An analysis of seven case studies* (ITS Working Paper 420) Leeds: Institute for Transport Studies
- Stoffaës, C, J-C Berthod and M Feve (1995) *L' Europe: Avenir du Ferroviaire* (Rapport au Ministre des Transports) Paris: ASPE europe
- Waele, A de (1993) Foreword, pp. 7-23 of European Conference of Ministers of Transport (ECMT) (ed) *Privatisation of railways* (Report of the 19th Round Table on Transport Economics held in Paris 4th-5th February 1993) Paris: OECD