

Railway Mergers and Railway Alliances: Competition Issues

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1. Introduction

Railway mergers and alliances have the potential to significantly affect competition under certain circumstances, with adverse results for shippers and final consumers as well as in broader areas such as road congestion, air pollution, fuel consumption, and global warming. However, the nature of the effects, if any, along with the lessons that this sector may provide for other network industries, depends crucially on the setting in which they take place – especially on the model of rail sector structure and competition chosen by a country’s policymakers. We may focus in particular on two separate models: competition among vertically integrated train and infrastructure enterprises, and competition among independent train operating companies over a monopoly infrastructure. We will focus on freight rather than passenger operations, since the latter are typically subsidized and thus tend to raise different policy issues.

Competition among vertically integrated train and infrastructure enterprises is the rail sector model chosen by policymakers in the geographically large, freight-dominated countries of the Americas – originally by the United States and Canada, more recently by Mexico, Brazil, and Argentina as well. At the risk of oversimplification, we may further break down this “American model” into a “North American model” – the US and Canada, with an emphasis on origin-destination competition between “parallel” vertically integrated railways – and a “Latin American model” – Mexico, Brazil, Chile, and Argentina, with an emphasis on competition for the business of shippers and customers at particular points served by more than one railway (Pittman, 2004a).

Competition among independent train operating companies over a monopoly infrastructure is the model chosen by Brussels for adoption by the members of the European Union. Again at the risk of oversimplification, we may further break down this “above-the-rail competition model” into a complete “vertical separation” model – the prohibition of the network operator from operating its own trains, a policy urged by DG-Comp – and a “third party access model”, with a vertically integrated infrastructure and train company forced to allow access to its infrastructure to competing, non-integrated train operating companies.¹ These models tend to blur a bit, as intermediate solutions such as “accounting separation” are accepted as means of preserving ownership

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¹ More broadly, vertical separation has become something of a reformers’ “default option” for infrastructure sector reforms around the world; see, *e.g.*, Newbery (1999) and Pittman (2007).

integration while making third party access terms more transparent, and thus (it is hoped) preventing discrimination.

In general, the degree to which complete separation of train and infrastructure operations in Europe has actually taken place – as well as the degree to which actual competition among train operating companies has appeared – varies a good deal by country.² “Third party access” tends to be what we observe in countries that have nominally chosen the vertical separation model but have moved only part way toward achieving it – i.e., countries that have taken steps to open up the train sector to competition but have not, or not yet, fully separated the incumbent freight operator from its infrastructure operations. Germany may be the most salient example of this – it has instituted “accounting separation” but not yet “ownership separation” of train and track – but Russia is another – though in Russia the competing train operating companies are mostly theoretical only.³

The role and impact of mergers and alliances have varied and will vary among these different settings. In North America, the competing parallel vertically integrated freight rail enterprises have merged up to the point that further mergers and/or alliances seem more likely to be of the end-to-end variety – and even these appear problematic from the regulator’s standpoint. In Western Europe there are fears of similar dominance or even monopoly above the rail as a single, state-owned company continues to make acquisitions, with some likelihood of competitive problems spilling over into Central and Eastern Europe as well; however, to the degree that vertical separation in particular countries is incomplete, there is a countervailing fear that vertically integrated incumbents will be successful at entrenching their monopoly positions.

Let us consider these different settings in more detail.

2. *The Americas: Competition among Vertically Integrated Railways*

Recent decades have seen a massive consolidation of the North American railway system. Canadian railway shipping has remained divided between two transcontinental carriers, the Canadian National (CN) and Canadian Pacific (CP) railways. However, on the US side, the number of class I railways has declined over the past 30 years from 41 to five: the Burlington Northern Santa Fe (BNSF) and Union Pacific Southern Pacific (UPSP) in the west, CSX and Norfolk Southern (NS) in the East, and the Kansas City Southern (KCS) in the center. Both horizontal (“parallel”) and vertical (“end-to-end”) mergers were part of this consolidation. Most recently and significantly, the number of major competitors was reduced from four to two in the west, with the BN combining with the ATSF and the UP combining with the SP, and from three to two in the east, with CSX and NS carving up the assets of Conrail in 1998.

This process of consolidation came to at least a temporary end at the turn of the 21st century. Faced with the first proposal to form a transcontinental railroad in the US –

² See, e.g., Gómez-Ibáñez and de Rus (2006), part 1; Molnar (2006); and Pittman, *et al.* (2007).

³ ECMT (2004); Friebel, *et al.* (2007); Pittman, *et al.* (2007).

the proposed merger of the BNSF with the CN – the Surface Transportation Board first imposed a moratorium on class I rail mergers (in 2000) and then issued a new merger policy statement (in 2001) that significantly increased the burden of proof on merger applicants to demonstrate that a merger would be pro- rather than anti-competitive.⁴ No mergers of class I railroads have been proposed in the meantime.⁵ From a competition standpoint this set of developments is rather remarkable, since it has traditionally been parallel mergers that have raised the most serious competitive concerns, and the STB has approved a number of those, while the BNSF/CN combination would have been mostly end-to-end, a kind of merger likely to have a much smaller effect on competition as a general matter.⁶

The academic literature generally suggests that broad railways deregulation in the US – the 4R Act of 1976 and the Staggers Act of 1980 – had strongly positive effects on productivity in the industry, and that mergers had some additional positive effects as well, at least through the mid-1990s.⁷ However, the long-term impacts of the most recent wave of large horizontal mergers is not so clear; the UP/SP combination resulted in dramatic and expensive service problems for shippers in some areas of the country, and the overall positive trend in customer surplus for freight rail shippers found by Ivaldi and McCullough (2005) reaches a peak and turns downward after 1998.⁸ A related literature suggests that the class I railroads are large enough that they have exhausted available economies of system size, but that some economies of density may remain – and thus that any further horizontal mergers would confront losses of competition with non-trivial further reductions in costs.⁹ Finally, the evidence is strong that, for those commodities that cannot economically be shipped by motor carrier or other modes, the presence of competing, vertically integrated railway companies leads to lower prices for shippers.¹⁰

There is some cross-border ownership involving the major North American railroads: KCS owns one of the three vertically integrated Mexican railways, the Grupo Transportación Ferroviaria Mexicana, the CN owns the U.S. carrier Grand Trunk, and the

⁴ “Because of the small number of remaining Class I railroads, the fact that rail mergers are no longer needed to address significant excess capacity in the rail industry, and the transitional service problems that have accompanied recent rail mergers, we believe that future merger applicants should bear a heavier burden to show that a major rail combination is consistent with the public interest.” STB, Docket EP_582_1, *Major Rail Consolidation Procedures*, Decision, June 11, 2001, at 9.

⁵ Kwoka and White (2004) describe these events in greater detail.

⁶ See, for example, the decision of the Surface Transportation Board regarding the division of Conrail between CSX and NS: “With very minor exceptions, the combination ... will be end-to-end and not parallel. It has been our experience that end-to-end restructurings of this kind rarely result in a diminution of competition.” STB, Finance Docket 33388_0, *CSX Corporation, Norfolk Southern Corporation – Control, Conrail Inc.*, Decision, July 23, 1998, at 50.

⁷ Berndt, et al. (1993); Wilson and Bitzen (2003); Ivaldi and McCullough (2005). Chapin and Schmidt (1999) are not so positive regarding the effects of mergers.

⁸ On UP/SP, see especially Kwoka and White (1999). Karikari, et al. (2002) and Breen (2004) attempt to show positive results from the UP/SP merger, but their arguments are not convincing.

⁹ The literature on the cost structure of US freight railways is extensive. See, e.g., Wilson (1997), Bitzan (1999 and 2000), Schmidt (2001), Ivaldi and McCullough (2001 and 2008), and Bitzan and Keeler (2007).

¹⁰ For parallel competition, see Grimm (1985) Winston et al. (1990) Burton (1993) and Schmidt (2001). For competition among railways serving common points – “source competition” – see MacDonald (1987, 1989a, 1989b) and Majure (1996).

CP owns the U.S. carrier Soo Line. In addition, there are a number of situations where one railroad runs trains over the track of another railroad – sometimes as a result of a voluntary bilateral agreement and sometimes as ordered by the regulator. Furthermore, a great deal of freight moves over “interline” moves involving more than one US and/or Canadian carrier. There are various formal “alliances” among the different railways that may facilitate this interline traffic, for example through joint marketing and maintaining a unit train at the point of interchange; among these are an alliance between NS and KCS that involves NS investment financing for a KCS line connecting the two, as well as formalized interchange and marketing agreements between NS/UPSP and CSX/BNSF.

There is some skepticism within the US rail industry as to how significant and meaningful these interchange alliances are; as one analyst wrote, “I had a hard time understanding what marketing alliances gave the railroads that they didn’t already have – they were going to interchange with each other anyway.”¹¹ To the degree that these end-to-end interchange alliances between eastern and western carriers tended to become exclusive agreements, they could raise competition issues (and the broader “public interest” concerns of the regulator). On the other hand, it has been one of the disappointments of the Mexican freight railways restructuring that the three vertically integrated carriers created by the reforms have so far neither interchanged much traffic nor negotiated private trackage rights agreements (OECD, 2006).

3. *Europe: Aspirations of Vertical Separation*

European Commission policy makers have been seeking to open up the European freight rail business to above-the-rail competition since at least 1991. In that year the Commission issued Directive 91/440, which required incumbent national railways to provide access to their infrastructure for international intermodal (i.e. container) freight carriers under non-discriminatory prices and terms of service. This was followed in 1995 and then 2001 by Directive 95/18 (as amended, Directive 2001/13) ordering the further opening of access to all international freight operators over a number of years, and then by Directive 2001/14 ordering the opening of access to domestic as well as international freight carriers by 2007 (Stehmann and Zellhofer, 2004; Nash, 2006). While none of these directives required complete vertical separation of train operations from infrastructure (i.e. “ownership” separation), during this period the head of DG-Comp was stating that he considered such separation necessary if competition was to be effective.¹² The main policy objective has been to create smoothly operating cross-border train operators that would ease road congestion and air pollution by competing away some of the business of the motor carriers.

The state of actual competition that has followed these directives is something of a mixed bag. On the one hand, there has been some entry by new, non-integrated freight

¹¹ Cited in John Gallagher, “Rail Joint Venture: Another Means for East to Meet West,” *Pacific Shipper*, December 16, 2005.

¹² See, e.g., Monti (2002).

train operating companies, in particular in Poland, Romania, and the UK.¹³ Even with small numbers of entrants, concerns have been expressed that entry will drive prices down to near marginal costs, that entrants (especially shippers integrating into transporting their own products) will take the high margin, “block train” traffic only, and thus that the system may deteriorate in the long run, and especially that service to shippers of smaller “wagonload” volumes will be lost to motor carriers.¹⁴ This scenario calls attention to the importance of the fixed costs of infrastructure in the rail sector and thus issues regarding access pricing and price discrimination to which we will turn presently.

On the other hand, concerns have also been expressed that the German incumbent freight carrier, DB Cargo – still connected organizationally with the infrastructure owner and still state owned – may be in the process of precluding the development of above-the-rail freight competition in western Europe, as it has successively purchased NS Cargo (Netherlands), DSB Gods (Denmark), EWS (UK), Transfesa (Spain), and SFM (Italy), was rumored to have sought to purchase Green Cargo (Sweden), and is reported now to be considering the acquisition of CTL Logistics (Poland) and Romtrans (Romania).¹⁵

A separate and potentially contradictory problem is that many of the countries of western Europe have not imposed full ownership separation on their incumbent, vertically integrated railway enterprises, raising the possibility of continued national level freight monopolists, likely surrendering access to international carriers only grudgingly, as opposed to a single dominant Europe-wide carrier.

Since the railways of western Europe are predominantly passenger rather than freight dominated, and since the countries are small relative to the larger countries in the Americas, the econometric results cited earlier for the US system can be applied to Europe only very carefully. Nevertheless the policy goal of greatly increased cross-border train operations – including but not limited to freight – suggests that the results for the US concerning economies of system size (exhausted at relatively low levels) and density (apparently less easily exhausted) may be relevant in the future; they would seem to suggest the feasibility of a regional train companies, either vertically integrated or not, that would have a tendency to possess market power within their regions but the ability to compete at points of intersection and overlap with other, similar companies.¹⁶ (Such “points of intersection” need not be precise, since many commodities are hauled by motor carrier to a railhead in any case. See, *e.g.*, Pittman 1990.) In general, the literature on

¹³ On Poland and Romania (and other Central and Eastern European countries), see Pittman, *et al.* (2007). On England, see, *e.g.*, Glaister (2006) and Posner (2006 and 2008).

¹⁴ See, *e.g.*, Posner (2006 and 2008).

¹⁵ “Europe’s private freight operators under siege” (*Railway Gazette International*, 1 July 2007); “Deutsche Bahn could buy Romtrans” (*The Railway Insider* [Bucharest], 21 August 2008); “Deutsche Bahn Is Interested in Acquiring CTL Logistics” (*RZD Partner*, September 4, 2008); and “Railion” (<http://en.wikipedia.org/wiki/Railion>). The dominance of DB Cargo within Germany is discussed by, *e.g.*, Locher (2006).

¹⁶ Savignat and Nash (1999) make a similar suggestion. If these regional “monopolists” remain vertically integrated, this is precisely what I have called above the “Latin American model”.

vertical economies (*i.e.*, economies of scope between train and infrastructure operations) is less consistent, but mild economies are at least suggested.¹⁷

The contradictory problems would seem to raise contradictory implications of further mergers and/or alliances for competition. If the problem is the remaining power of an incumbent national carrier like CFR Marfă in Romania, for example, then a purchase by DB of an independent Romanian train operating company such as Romtrans or of a potential entrant into Romania like CTL would appear to be procompetitive, a way to continue to wrest the market from the incumbent dominant carrier. If, on the other hand – which seems more likely in the long term – the problem is likely future dominance of DB or another company in a Europe-wide above-the-rail freight market, then a strengthening of a company like CFR Marfă through mergers and/or alliances – or, correspondingly, the proposed merger of the incumbent Czech and Slovak freight carriers and the proposed merger of the incumbent Austrian and Hungarian freight carriers – look like steps to maintain some competitive options.¹⁸ And behind all these considerations is the issue of recovering network costs in a model of vertical separation: the setting of access prices will be crucial.

4. Access Prices

As noted above, when competition “above the rail” is created, one crucial issue becomes the financing of maintenance and improvement to the infrastructure. In this regard rail is no different from any other network industry, except that the share of fixed network costs in total delivered costs is probably higher for rail than for any other sector other than water. As with other network industries – telecoms is probably the most studied in this regard – there are real tradeoffs that must be made between encouraging competition and supporting investment.

The principal problem is the traditional one of seeking the most efficient method for the recovery of fixed costs.¹⁹ An access charge set at the level of marginal infrastructure cost achieves the most efficient level of usage in the short term, but then the fixed costs must be recovered in some other way, for example through taxation, with the accompanying losses measured by the shadow price of public moneys (fairly high in developing countries). An access charge set at the level of full infrastructure cost recovery results in the inefficient turning away of potential users that could pay the marginal cost of their usage but not the “fully allocated” cost. An access charge seeking a second best middle ground through Ramsey prices or two-part tariffs is likely to be judged “discriminatory” – as of course it is, by definition – and thus illegal by a competition enforcement authority.

¹⁷ Bitzan (2000); Ivaldi and McCullough (2001 and 2008); Growitsch and Wetzel (2006); Wills-Johnson (2007). A non-econometric discussion is in Pittman (2005).

¹⁸ “CTL Logistics want to enter the Romanian market” (*The Railway Insider* [Bucharest], 14 December 2007); “Czech Republic/Slovakia: Ready to merge rail freight companies” (*RZD Partner*, 26 August 2008); “EU inquiry deadline for Rail Cargo Austria buy of MAV Cargo Sept 29,” *Forbes*, 28 August 2008, citing Thomson Financial News.

¹⁹ I have discussed this in the context of railways in Pittman (2004b).

EU Directive 2001/14 essentially calls for marginal cost access pricing for rail – charges must be based on “costs directly incurred as a result of operating the train service” – with a broad interpretation for marginal cost that includes reservation and scarcity charges, environmental costs, and volume-related savings (Nash, 2005 and 2006). However, mark-ups above marginal cost are permitted where necessary for financial reasons, and where such mark-ups are non-discriminatory. Nash believes that the latter requirement probably rules out two-part tariffs – consistent with the reaction of the Bundeskartellamt to such a proposal by DB – but may possibly permit Ramsey pricing.²⁰

Perhaps a bit surprisingly, the issue of access prices turns out to be a relative weakness of the “above-the-rail competition” model. Nash (2005) notes the inability of an infrastructure operator to have complete knowledge of the cargo or cargos being hauled by all trains, while BTRE (2003) reports that in practice attempts by infrastructure operators to discriminate in access charging among a small number of train operating companies has led to rent dissipation through bargaining, regulatory challenges, and litigation. Based on the more successful North American experience setting shipping charges rather than access charges, it appears that it is easier for a vertically integrated railways company to discriminate among large numbers of shippers than for a vertically separated rail infrastructure company to discriminate among a smaller number of train operating companies. (See also Bouf, 2002.)

What is the relevance of this issue for the question of mergers and alliances among railways companies? Many such agreements – in any of the policy contexts discussed here – will involve voluntary arrangements for the use of one company’s track infrastructure by another company’s trains. Presumably the two companies involved will negotiate an efficient pricing regime, though this may of course turn out to involve standardized contract terms rather than attempting to reach terms precisely correct and appropriate for each separate situation. A problem in the experience with the American model – in Mexico in particular – has been a fear by the companies that any terms that they agree on for private, voluntary track sharing arrangements will be adopted by the regulator and the courts and imposed for mandated track sharing arrangements. This has been one reported reason for the paucity of such voluntary agreements. A similar problem in Canada, where the two principal railways have statutory access to some of each other’s “captive shippers”, is that both railways seem satisfied to pursue a “live and let live” policy rather than starting a battle for each other’s captive shippers (Ouellet, 2000).

A second problem in Europe – especially in the context of the policy of encouraging cross-border freight and passenger train operations – has been the lack of harmonization of national access pricing regimes. The EU Directive discussed above provides principles for access price setting but does not impose uniformity, and in practice the regimes differ a great deal by country (Nash, 2005; Pittman, *et al.*, 2007). This is not the only factor discouraging cross-border operations; difference in other terms

²⁰ The DB access pricing episode is discussed in Dagmar Haase, “New Train Path Pricing System at Deutsche Bahn,” DB Netz, n.d. See also Pittman (2004b).

of access are a factor, and anticompetitive behavior has been charged as well.²¹ But certainly the multiplicity of access pricing regimes has played a part. This is a bit ironic since most of the western European rail systems are passenger- rather than freight-dominated, so that some would argue that they should have to contribute little to fixed charges in any case.

5. Lessons for Other Network Industries?

What lessons may we derive from the experience in railways for competition issues regarding mergers and alliances in other network industries?

I would argue first that the potential for competition among vertically integrated providers has been undervalued in policy debates, both as a restructuring model on its own and as a factor in understanding mergers and alliances. This option has taken a poor second place to vertical separation in the worldwide debate among economists regarding restructuring of the infrastructure sectors broadly, but it has many virtues – not least the (self-evident) one of maintaining whatever economies of vertical integration are available (Pittman, 2007). The experience of Mexican railways restructuring in general, and of “source competition” for rail shippers in the US and Canada, have made it quite clear that there are circumstances in which competition may be created without having to break up going concerns.

It seems conceivable that restructuring along these lines has at least some potential in both the electricity and water sectors (In Australia there is already some discussion of competition to traditional water purification plants from future desalinization plants.) Correspondingly, it is important for competition authorities and regulators to be alert to the possibility that mergers or alliances between providers in adjacent territories – vertically integrated or not – may harm actual or potential competition at points of intersection. If one railway or long-distance electricity transmission line or gas pipeline or water pipe serves Brussels, or comes close to Brussels, from the southwest, and another serves it or comes close from the southeast or northeast, the two may be able to compete with each other to provide the service to Brussels, and a merger or alliance that appears to be of the relatively innocuous end-to-end variety could eliminate the only competition available.

A second lesson may be that firms are sophisticated players in the regulatory and competition law processes, and they may behave strategically – in particular, they may decline to behave competitively to make short term profits if they fear that the result will be a less profitable future. This has apparently been the case in both Canada – where shippers captive to the CN or CP have a statutory right to competitive service from the other under some circumstances, but where neither of these has provided the cooperation necessary – and Mexico – where the three vertically integrated incumbents have eschewed voluntary track-sharing agreements, apparently out of a fear that the terms of such agreements would be used by regulators under less voluntary conditions. (Some

²¹ See, e.g., Italian Competition Authority, Case 1681, “Rail Traction Company/Rete Ferroviaria italiana-Ferrovie dello stato,” 18 January 2007, Provvedimento no. 17327, Avvio istruttoria, Bollettino no. 33/2007.

would argue that this problem has characterized the US local telecommunications sector under the Telecommunications Act of 1996 as well.) This may be an especially relevant consideration when considering remedies that rely for their competitive outcomes on market entry by other large firms.

Finally, a more optimistic lesson: it is not always true, but certainly it is often true that customers in network industries have many options that may protect them from monopolistic behavior by otherwise “monopolistic” service providers. Regarding rail freight, the most obvious protection is provided by other transport modes; motor carriers can for many commodities – especially non-bulk commodities – provide more competition than rail carriers can handle, and water carriers can in many cases provide similar competition for shippers of bulk commodities. Shippers in “American model” countries may be protected by source competition even if they lack parallel competition, while shippers in “above-the-rails competition” countries may begin operating their own trains if they think they are paying too much to their incumbent supplier.²² Of course these factors are sector specific, but certainly the technological convergence between telecommunications and cable television providers – with electricity perhaps on the way – provides a similar example.

This goes to the heart of competition issues in network industries, and it may be a good point with which to close. Network industries are almost by definition industries with significant fixed costs that must be somehow recovered if the network is to be built in the first place and then maintained and improved. This means that we should be satisfied with a market structure far short of perfect competition, with the accompanying prices competed down close to marginal costs; a not unrelated point is that efficient usage of the network may involve some kind of price discrimination, charged either by the network operator as an access price or by an integrated service provider. Marginal cost pricing in a network industry is a recipe for long term disaster – or, as Henry Posner (2006) summarizes, “Open Access advocates should be very careful what they ask for because they just might get it.”

²² And, as railroader Posner laments (2006), they are likely to run these operations “as cost centers, not to be confused with profit centers” – i.e. with no concern for infrastructure cost recovery unless forced to consider it via access charges.

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