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Blame the Switchman? Russian Railways Restructuring After Ten Years

by

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Abstract

The Russian economy relies on the Russian freight railways to an extraordinary degree. In 2001, after years of debate, the Russian government adopted an ambitious plan to transform this vertically integrated, government owned monopoly into a system that would rely more on private investment and competition and less on government ownership and regulation. This paper examines the state of the industry after ten years of reforms, with a focus on competition, tariffs, and private sector participation. Much remains to be decided, in particular the question of whether Russia will settle on its own unique model of railways restructuring or will move in the direction of one of the three standard models seen in other countries: vertical separation as in the UK and Sweden, third party access as in Germany and France, or horizontal separation, as in the US, Canada, and Mexico.

Keywords: freight railways, restructuring, competition, Russian Federation, vertical separation, third party access, horizontal separation

"во всем винить стрелочника"

("Blame the switchman" – old Russian railways proverb)

1. Introduction¹

The Russian railways are one of the economic wonders of the 19th, 20th, and 21st century world. In length of track they are second globally to the railways of the United States (though China is trying to catch them from below). In volume of freight hauled, they are third behind the United States and China, using the standard measure of ton-kilometers. And in overall density of operations – here the standard measure is (freight ton-kilometers + passenger-kilometers)/length of track – Russia is second only to China. (See Table 1.)

Russia is a much larger country than either the United States or China, so its rail density (rail track/country area) is lower than that of these other two – much lower in the case of the United States. Since Russia's population density is also much lower than that of these other two (excluding Alaska from the U.S. measure in this case), the Russian railways carry their freight and passengers over very long distances, often through vast, nearly empty spaces; their average length of haul is second in the world, behind only the United States and essentially tied with Canada. Coal and coke make up almost one-third of the freight traffic and have average hauls of around 1500 kilometers, while ferrous metals make up another 10 percent of freight traffic and travel an average of over 1900 kilometers. Many remote shippers and customers have access

¹ A valuable discussion of the recent state of the Russian Railways and their reform is provided by ECMT (2004), from which some of the information in this Introduction is taken.

either to only very poor alternative shipping options by road or water, and/or access to those alternative options for less than the entire year.

Though like most railways RZhD carries both freight and passengers, it is one of the most freight-dominant railways in the world, behind only Canada, the United States, and Estonia in the ratio of freight ton-kilometers to passenger-kilometers. Measured by the share of freight carried, RZhD is second to none among the world's largest railways in its importance to its country's economy.

The Russian railways are divided into seventeen regional railways, from the October Railway serving the St. Petersburg region to the Far Eastern Railway serving Vladivostok, with the free-standing Kaliningrad and Sakhalin Railways on either end. (See Figure 2.) However, the regional railways are closely coordinated by the central authority – the Ministry of the Means of Communication, MPS, until 2003, and the Joint Stock Company Russian Railways, Rossiiskie Zheleznnye Dorogi or RZhD, since then – including the pooling and redistribution of revenues. This has been crucial to two long-standing policies of cross-subsidization: to passenger operations from freight revenues, and to coal shipments from other freight. These cross subsidies have important implications for reform proposals, as will be discussed below.

The Russian railways were a collection of mostly privately owned and operated companies during most of the 19th century, though many had been constructed with heavy government involvement and financing.² The tsarist government began mobilizing and nationalizing the rail system as World War I approached, and the new

² Valuable historical discussions include Meyer (1905), Westwood (1964, 2002), Haywood (1969, 1998), and Marks (1991).

communist government finished the nationalization process. With the dissolution of the USSR in 1991, the Russian Federation was left with three-fifths of the railway track of the Union as well as nine-tenths of the highway mileage – though only two-fifths of the port capacity.

In this century, substantial changes in the Russian railways have been discussed and implemented in the context of two government reform documents: Decree No. 384 of 18 May 2001 of the Government of the Russian Federation, “A Program for Structural Reform of Railway Transport”, and Order No. 877 of 17 June 2008 of the Government of the Russian Federation, “The Strategy for Railway Development in the Russian Federation to 2030”. The former focused on restructuring the railways from government-owned monopoly to competitive sector; the latter focused on ambitious plans for equipment modernization and network expansion.

2. The Structural Reform Program of 2001

Although wide ranging railway reform debates took place throughout the 1990s, it was only in 2001 that the broad new “Program for Structural Reform in Railway Transport” was adopted. The reform program traced its roots back to generalized dissatisfaction with the performance of all of the country’s “natural monopoly” sectors in the mid-1990s (Capelik and Slay, 1996; Oding, 2000; Dementiev, 2006), as well as a direction by President Yeltsin to Railways Minister Nikolai Aksyonenko in 1997 to “draw up a [railways] reform plan that would increase the transparency of ... spending and operations while bolstering ... profitability”.³ After much discussion and deliberation,

³ Alla Startseva, “Railways Reform Off the Tracks,” *Moscow Times*, December 21-23, 2001.

the ten-year reform plan for the railway was approved by the Cabinet in 2001 and enacted by the Duma in early 2003.

The plan called for a distinct set of reforms to be achieved in each of three time periods, though with the details becoming increasingly vague the further one projected into the future. The three period plan may be summarized as follows:⁴

First stage, 2001-2003:

- Formal creation of the Joint Stock Company Russian Railways (RZhD), which was to remain state-owned;
- Separation of this company and its business operations from the regulatory and policymaking functions of government agencies;
- Divestiture from RZhD of non-core, non-commercial assets and activities such as hospitals, hotels, and schools.

Second stage, 2003-2005:

- Creation of RZhD subsidiary or “daughter” companies for freight hauling, long-distance passenger operations, commuter operations, construction and repair, and infrastructure;
- Implementation of non-discriminatory infrastructure access conditions for independent train operators, and sale of some RZhD rolling stock and locomotives to those operators;
- Implementation of a transparent structure for government subsidies for passenger operations, to replace the historic cross-subsidies from freight.

⁴ For a more detailed discussion, see, *e.g.*, V.A. Shermanayev and Boris E. Lukov, “Reforming Russia’s railways,” *Rail International*, March 2004, 12-25.

Third stage, 2006-2010:

- Partial or complete privatization of non-infrastructure subsidiary companies;
- Creation of a competitive market for freight and perhaps long-distance passenger operations.

This reform program may be seen to include many standard components of pro-market economic reforms urged by entities such as the World Bank and the IMF, including the spin-off of non-core activities, the removal of internal cross-subsidies, privatization, and the creation of competition (World Bank, 2002; Kessides, 2004; Xu, 2004). However, it was not precise as to just how the restructured system would operate. Early drafts of reform laws specified that private companies could never control the infrastructure, even under long-term franchise agreements – the sort that have appeared in other rail reform plans internationally, including those of Argentina, Brazil, and Mexico (Pittman 2004a; Friebel, *et al.* 2007). However, this provision did not survive the legislative process, and the public summaries of the reform plan provided by RZhD listed as one component of the third stage “to estimate the opportunities of setting up several railway companies, competitive and vertically integrated.” In addition, the plan details called for more than half of railway rolling stock in Russia to be owned by entities other than RZhD by the completion of stage three – in retrospect, a possible hint at a reform outcome qualitatively different from those that had made up the public debate.

As of this writing, a number of the goals of the three stage reform plan have been

achieved, but progress on the others has been slow.⁵ RZhD is a “joint stock company” that has raised money on public capital markets and is fully separate from ministries and regulators – though it remains fully government owned. Non-core activities have for the most part been spun off or eliminated. Private companies own about a third of Russia’s freight rolling stock – more than half in some categories – and perhaps two-thirds of the rolling stock that remains in the public sector is now controlled directly by RZhD “daughter companies” Freight One and Freight Two (on which more below).

On the other hand, the list of important tasks to be completed remains a long one. A 2009 report by the Federal Antimonopoly Service (FAS), “On the state of competition in the Russian Federation”, lists in its chapter on freight rail the following goals that remain unmet:

- “competition in the transport of goods -- ... no new carriers ... [to challenge] the monopoly OAO RZD on the transport of goods”;
- “Tariffs for infrastructure services – the main financial instrument for the formation of independent goods have not been developed”;
- “develop[ing] private property in the main line locomotives (deadline – 2004-2006)”;
- “improving the regulatory framework for access by all interested users to infrastructure services”;
- “develop[ing] and implement[ing] ... the regulatory framework of the operators of rolling stock”.

⁵ The same view was expressed in ECMT (2005a), of which this author was a co-author.

In addition, significant government-mandated cross-subsidies remain, both supporting passenger operations from freight revenues and supporting some freight movements – especially long-distance coal movements – by revenues from other freight movements. None of the largest RZhD daughter companies has been privatized, though discussions have intensified, especially regarding Freight One and Freight Two. Most importantly, though, as emphasized by FAS, there remains virtually no real competition at the level of train operations; indeed even the legislative and regulatory authority for independent train-operating companies remains to be enacted.

Let us consider the state of the reforms, and of the Russian railways, in more detail.

3. Competition Issues

A number of difficult decisions and hard tasks remain for the achievement of a primary component of the third stage of reform, “to develop competition in the freight traffic sphere”. The most basic of decisions as to what freight rail competition would look like in the Russian context apparently remain to be made: whether the restructuring model for the Russian railways will be that of a) complete vertical separation, with RZhD operating the infrastructure but having no train operations of its own, as in the UK and Sweden, b) third-party access, with RZhD operating both infrastructure and trains, and allowing operations by independent train operating companies under regulated conditions, as in Germany and France, c) horizontal separation, with multiple vertically integrated railway companies competing with each

other over parallel routes and to and from common points, as in the US, Canada, and Mexico, or d) something else entirely.⁶

Russian reformers, like European reformers, have generally and vocally preferred the first option, complete vertical separation, as evidenced by statements from Russian Ministers of Transport and Economic Development and the head of the Federal Antimonopoly Service.⁷ The president of RZhD, Vladimir Yakunin, has just as vocally rejected this option:

Don't cherish these illusions – we'll never have such conditions [permitting complete vertical separation]. But if we separate them anyway and ruin the company, quite a few in the West will applaud us.⁸

What has been permitted thus far has been movement in the direction of the second option, third-party access, with both a) the creation of multiple “daughter” freight hauling companies of RZhD, some perhaps to be separated from the company in the future (on which more below), and b) slow movement in the direction of permitting access to the infrastructure to new freight train operating companies (TOCs). The first option, complete vertical separation, is certainly not on the horizon any time soon, and

⁶ On these competing models, see, *e.g.*, Gómez-Ibáñez and de Rus (2006) and Pittman (2007). A different perspective on the models is provided by the RZhD president in Vladimir Yakunin, “The Right Rail Reform to Meet the Needs of the Economy,” *RZD-Partner International* (2009) 4 (20), 6-9, translated and reprinted from *Ekspert Magazine*, 31 August 2009, and by a group of Russian business and academic specialists in Committee on Investment Policy and PPP (2010).

⁷ For example, here is former MEDT Minister German Gref: “I think it is important to accelerate the restructuring of natural monopolies. The current policy of separating competitive operations from monopolies and establishing tight control over these monopolies is absolutely correct and has no alternative. At least I haven't heard anything different. If someone has something else to propose, I am ready to discuss it.” Federal News Service, Remarks by Presidential Staff and Government Top Officials at a Conference of the Higher School of Economics, April 6, 2004.

⁸ Andrey Guryev, “OAO RZD Voices New Objectives,” *RZD-Partner International* 3, 50-54 (2005); see also Yakunin, *ibid.*

the third option, horizontal separation, has enjoyed little recent public discussion and may have fallen out of consideration.

At least three significant hurdles remain to the creation of competition through third-party access (or, for that matter, vertical separation). First, as noted above, RZhD continues to be required by the government to cross-subsidize passenger operations from its freight revenues, and to cross-subsidize some long-haul bulk freight movements from the revenues received from other freight hauls. As RZhD quite rightly points out, there can be no fair competition between RZhD and independent train operating companies if the former but not the latter is subject to expensive “public service obligations” such as these.⁹ There has in fact been some progress in addressing cross-subsidies on the passenger side, with a portion scheduled to be eliminated in 2011 through the separation from RZhD of all suburban passenger services; on the other hand, an announced cut of one-quarter of the central government’s subsidies of long-distance passenger service seems to constitute a step backwards unless those funds are to be made up by local and regional governments. Elimination of cross-subsidies within freight hauling would require a major revision of the entire freight tariff system (on which more below), and that does not appear to be in the cards any time soon.

The second hurdle has to do with the legislative and regulatory framework that would permit and support the operation of independent freight TOCs on the RZhD infrastructure. On the one hand, shippers, forwarders, and potential TOCs have been waiting literally for years for the enactment of the laws and regulations that would

⁹ Oding (2000) provides a valuable set of calculations that give a rough estimate of the magnitudes of the cross-subsidies involved. See also Filina (2008).

enable and support above-the-rail entry and competition. Russian legislation does differentiate between “operators” and “carriers”; operators own or lease rolling stock but do not own locomotives or run trains, while carriers – mostly a theoretical concept thus far – own or lease locomotives as well as rolling stock and run their own trains on the common infrastructure.¹⁰ However, serious questions and complaints continue concerning the adequacy of the legislative and regulatory framework necessary to support the presence of operators and (especially) carriers on the RZhD infrastructure.

For example, an interagency reform study prepared in 2007 calls for “government decrees ... on the legal framework for regulating activities of rolling stock operators and of their interaction with carrier” (RZhD, 2007a). The president of the Guild of Freight Forwarders has lamented

the absence of any legislative or legal documentation.... The concept ‘operator’ is not defined in the RF Civil Code.... Private operators responsibilities to cargo owners and RZD are not legally defined anywhere.... It seriously constrains the development of competition.¹¹

Similarly, the deputy head of the Federal Antimonopoly Office has argued that

The adoption of the decree on company operators by the RF [Russian Federation] Government would partly solve the problem.... For example, the interaction of Freight One and RZD in this aspect is regulated in the framework of

¹⁰ The two terms are defined in Federal Law No. 17, “On Railway Transport in the Russian Federation”, and Federal Law No. 18, “Charter of Railway Transport in the Russian Federation”, both enacted in 2003. See, e.g., RZhD (2007b), and Elena Ushakova, “New Plan, Old Problems,” *RZD-Partner International* (2010) 3 (23), 22-25.

¹¹ Elena Ushakova, “Second Cargo Company: An Operator? A Carrier? Or a Freight Forwarder?” *RZD-Partner*, December 3, 2009.

corporate relations. But for independent companies, a legislative base is required as well as a technology base for their interaction with RZD.¹²

A third issue concerns what legislative provisions exist concerning carriers. Both the Russian Federation Civil Code (Article 789) and the more specific railways legislation (Federal Law No. 17, “On Railway Transport in the Russian Federation”) require that any new TOC act as what is called in the United States a “common carrier” – that is, accept any cargo for haulage from and to any geographic location on the infrastructure network.¹³ Since in most liberalizing countries the entrants into independent train operations have been either shippers vertically integrating to haul their own inputs or outputs or smaller freight forwarders trying their hand at train operations (Pittman, *et al.*, 2007), this requirement is on its face unfriendly to TOC entry. RZhD and in fact the Federal Antimonopoly Service (FAS) as well defend this requirement as necessary for the prevention of “cream skimming” by entrants, but that argument probably has validity only so long as the requirements for cross subsidies are in place. In any case this requirement is likely is the explanation for the absence in the list of existing operators and potential carriers below of any small, regional enterprises.

The fact that the reforms have succeeded in opening up the ownership and control of rolling stock to private firms – both operators and shippers – and that the rolling stock controlled by the private share continues to grow both absolutely and in relation

¹² Tamara Andreeva, “Time for Bold Decisions,” *RZD-Partner International* (2009) 2 (21).

¹³ RZhD (2007b) cites the Civil Code for the requirement that “only those businesses can operate as carriers within the framework of transport in common use, who realize their obligations to transport freight, passengers, or luggage upon request of any citizen or legal entity” (p. 7), and railways legislation for the requirement that a carrier “work on the basis of public contract across the entire railways network” (p. 20). See also Andrey Guryev, “Market Awaits New Big Subject,” *RZD-Partner International* (2006) 1, 51.

to the RZhD share, and particularly if the advanced age of much of the RZhD rolling stock is taken into account, suggests that at this stage of the overall reforms, the Russian government has in effect created its own unique reform model for the rail sector: vertical separation, but separation at the level of the back of the locomotive – i.e., with locomotives included as part of the “monopoly infrastructure” – rather than between trains and track.

4. Freight Tariffs

Tariffs for domestic movement of freight by RZhD are generally tightly regulated under a complex document called Price List No. 10-01.¹⁴ Price List 10-01 separates freight tariffs into three broad classes of commodities that may be roughly categorized as raw materials, intermediate goods, and final products:

- Class I commodities include coal, ores, timber, and construction materials such as sand, stone, and concrete.
- Class II includes oil, grain, fertilizers, food, and a broad collection of intermediate goods.
- Class III contains finished chemicals and metals, machinery, and most finished manufactured goods.

Individual tariffs in each category are then determined using a declining scale for distance of haul and adjusting for shipment size and charges for loading and unloading. The overall rationale behind the tariff structure is basically twofold: to encourage long-distance shipments, especially of coal, at affordable rates, and to charge for shipping

¹⁴ The relationship between domestic tariffs set under these rules and tariffs on goods intended for export is a complex and controversial one that we do not examine here. See, for example, Dementiev (2006).

each commodity no more than a target percentage of its delivered price.¹⁵ Rates above the regulated tariffs are forbidden, in order to protect shippers from monopolistic abuses by RZhD; rates below the tariffs are likewise forbidden, in order to protect independent operators and carriers from predatory abuses by RZhD.

Even with a multitude of commodity-specific adjustments to this tariff regime, it has been no more consistent with a regime of incipient competition than was its historic U.S. regulatory counterpart. On the one hand, it is widely believed that many of the longest-distance moves of Class I commodities are priced below cost, forcing RZhD to cross-subsidize these hauls by charging higher rates than would otherwise be required for other freight hauls.¹⁶ As with cross-subsidies to passenger operations, RZhD argues that real competition among train operating companies is impossible so long as RZhD alone bears this burden. On the other hand, so far RZhD has been mostly unsuccessful in seeking to adjust its rates downward from the regulated levels when it is faced with competition from either independent operators or motor carriers.

According to the Law on Natural Monopolies, it is a long-term government policy to replace the regulation of freight rail rates by creating competition to RZhD among freight operators and carriers, subject to regulation of the price and terms of access to the infrastructure (on which more below). When RZhD seeks permission to adjust rates for a particular commodity on a particular route, it must demonstrate to the rate regulator (the Federal Tariff Service, FTS) that it faces significant competition there. If it

¹⁵ See, for example, ECMT (2004) and Dementiev (2006). The second rationale is similar to the traditional system of “value-of-service” pricing applied in the United States in the days when rail freight shipments were closely regulated (Kahn 1970).

¹⁶ See Yakunin, *supra* note 5.

can so convince the FTS, then the transport by rail of that commodity over that route is no longer subject to FTS jurisdiction but is rather subject to the Competition Law, the same as other goods and services sold in Russia.

Under the Competition Law, in turn, freight tariffs would be subject to the jurisdiction of the FAS in the context of enforcement to prevent the abuse of a dominant position in a market. Thus the FAS would investigate whether RZhD held a dominant position in a particular “market” – probably a) the shipment of commodity X from point A to point B, though conceivably b) all shipments of commodity X leaving point A, or c) all shipments of commodity X arriving at point B – and if that were determined, RZhD would be prohibited from the “establishment and maintaining of monopolistically high or monopolistically low price” (Law on the Protection of Competition, 10.1.1).

In practice there has apparently been little activity by RZhD in seeking to convince the FTS that particular origin/destination/commodity triptychs are competitive. This could be because in fact competition to RZhD from motor, water, or other rail carriers has been so rare; however, as a deputy head of FAS notes, so far what intermodal competition there is has not led to tariff deregulation:

An example may be fish transportation from Murmansk to Moscow. Railwaymen lost this segment to road hauliers. Why should the tariffs on railway transportation be regulated there? We can speak of deregulation of tariffs on oil bulk transportation by railway on the markets where there is intersectoral competition with pipelines and water transport.¹⁷

¹⁷ Tamara Andreeva, “Time for Bold Decisions,” *RZD-Partner International* 2 (21) 2010, 23-26.

This raises the possibility that in practice the FTS has considered only the issue of whether RZhD faces competition from other rail service providers for particular origin-destination pairs – obviously a much higher hurdle in the current situation than if motor and water competition were taken into account.

Freight tariffs charged to shippers by “operators” – companies other than RZhD that own or control their own rolling stock – are partially unregulated. As each regulated tariff consists of two components – an infrastructure and locomotive traction charge (combined) and a rolling stock charge – operators may quote a price to shippers that includes the regulated infrastructure and locomotive charge (which either they in turn pay to RZhD, or the shipper pays directly to RZhD) but an unregulated rolling stock charge. Somewhat remarkably, this deregulation of the rolling stock component of the tariff extends to daughter companies of RZhD such as Freight One and Freight Two (RZhD, 2007a). The combined RZhD rate is reported to serve as a sort of benchmark for the combined private rate in many situations – but not for commodities like oil and cement, where demand for shipping is high and the RZhD rolling stock inventory is small or outdated or both. In those cases, the market rate charged by private operators may be significantly above the regulated tariff.¹⁸

5. Access charges

If independent operators and/or carriers are to provide service to shippers under either a third-party access or a vertical separation regime, the issue of the price of

¹⁸ The private operator Globaltrans includes a brief but useful discussion of tariff regulation on its website, at www.globaltrans.com/about-us/rail-industry-market/tariff-regulation. A more lengthy discussion is provided in Globaltrans (2008).

access (and other conditions, but we focus on price) to the infrastructure replaces the regulated tariff for freight hauling service at center stage. Especially so long as RZhD is operating trains as well as providing infrastructure service, this in turn is related to the broader issue of how the regulated tariff for a particular commodity move for a particular transport corridor is divided into its individual components.

Thus far the most widely discussed aspect of this issue has concerned the freight car component of payments by shippers and TOCs to RZhD, since a) the reform plan was intended to encourage, and has succeeded in encouraging, the private ownership of rolling stock, and b) a shipper or operator providing its own rolling stock reduces its payment to RZhD by the amount of the rolling-stock component in the tariff. The primary point of debate and complaint (other than the comparatively small magnitude of this component of the tariff) has been the treatment of empty rolling stock by RZhD and the question of whether any allegedly unfair, discriminatory treatment in the speed of return and/or other RZhD treatment of privately owned rolling stock is taken account of adequately by the magnitude of this reduction in payment.¹⁹

A second issue that will be of increasing importance going forward is the locomotive component of payments to RZhD. As of this writing, there is no formal ability for a TOC to subtract such a component from its payment, and this may account for the fact that there are only about 400 locomotives in private ownership in Russia, most owned by

¹⁹ A related issue is the degree to which FAS is able to prevent and sanction such allegedly discriminatory behavior; see FAS (2010).

companies that operate their own local trains over proprietary “industrial tracks”.²⁰ Nevertheless there is a nominal locomotive component in the Price List 10-01 tariffs that averages about 20-30 percent, and the FTS has proposed making that component more explicit and thus subtractable by operators or carriers supplying their own locomotives – a proposal that RZhD has been resisting.²¹

If on-track competition is to be encouraged, however, the more important issue in the longer term is the corresponding charge paid for access to the infrastructure by TOCs. The issue of the efficiency, fairness, and effectiveness in encouraging competition of particular access charge regimes has been widely debated both in infrastructure sectors broadly (Laffont and Tirole, 2000; Armstrong, 2002; Tardiff, 2006) and in the rail sector in particular (BTRE, 2003; Pittman, 2004b; ECMT, 2005b; Nash, 2005). It seems to be generally accepted by now that no single access pricing regime can achieve all the goals that might be assigned to it, which include not only encouraging competition among TOC infrastructure users but also efficient allocation of infrastructure users, non-discrimination among users, the recovery of fixed infrastructure costs, and internalization of externalities.

Most countries that have created a rail access pricing regime have set prices somewhere between short-run marginal cost (with longer run and fixed costs to be made up from government subsidies) and average total cost, with a good deal of

²⁰ David Briginshaw, “Russia’s Private Railfreight Boom,” *International Railway Journal*, June 2008; Laisi, 2010.

²¹ Ivan Stupachenko, “From regulation towards deregulation,” *RZD-Partner International* 4 (20) 2009-10; Otkritie Financial Corporation, “Globaltrans [BUT; TP \$14.7]: RZD proposes changes to liberalization plan,” 22 March 2010.

variation in between. Multi-part tariffs have been introduced in some countries in an attempt to improve the terms of the inherent tradeoff between short-run efficiency and full cost recovery, though such regimes have caused competitive concerns regarding discrimination in favor of dominant incumbent TOCs (Pittman, 2004b).

Russia has addressed this problem in a unique way. First of all, it has tilted the scales strongly in favor of infrastructure cost recovery by RZhD (and thus arguably against independent train operations) by setting implicit access prices at what appears to be the world's highest level in terms of percentage of average freight tariffs: around 55 percent (ECMT, 2004). Second, it has chosen its own form of efficiency-seeking price discrimination by setting access price as a fixed percentage of the regulated tariff for the haul. Thus, since tariffs for shipping coal are systematically lower than those for shipping grain, which are systematically lower than those for shipping auto parts, the access prices for trains carrying those commodities bear the same relationship to each other, all else equal. The result may be the direct opposite of the efficient discriminatory scheme known as Ramsey pricing – the charging of customers a price inversely related to their demand elasticity – and thus may, all else equal, hasten the departure of manufactured goods from the rails to the roads or, in the case of shipments to and from the Far East, to the water.²²

One advantage of high charges for network access, according to the general economics literature, is that these should remove or at least lessen the incentives of the

²² A superb source of information and analysis regarding the competition between ocean carriers and trains over the Trans-Siberian Railway for the haulage of freight between Europe and the Far East is the various short papers of Hisako Tsuji of the Economic Research Institute for Northeast Asia. See, for example, Tsuji (2004; 2009) and Tsuji and Sergachev (2006).

infrastructure operator to discriminate against unaffiliated network users – in this case, the owners of private rolling stock and, eventually, independent carriers (Laffont and Tirole, 2000). Such anticompetitive incentives are the principal problem with – indeed the Achilles heel of – the third-party access model of natural monopolies restructuring (Newbery, 1999; Pittman, 2003). However, the FAS has not found RZhD’s practices to be consistent with this reassuring argument. The FAS has accused RZhD of violating the provisions in the competition law prohibiting the abuse of a dominant position on the market with some regularity over the past 10 years, including the following reported specifics:

- Discrimination against the owners of private rolling stock in the provision of rolling stock repair services (2005, 2008, 2009);
- Discrimination against the owners of private rolling stock for the carrying of beer, thus artificially encouraging use of the services of RZhD daughter company Refservice (2005, 2007);
- Refusal to service privately owned rolling stock at RZhD stations – first oil tank cars, then more generally (2006);
- Refusal to reload private containers, thus artificially encouraging use of the services of RZhD daughter company TransContainer (2006);
- Refusal to provide weighing services to privately owned rolling stock (2006);
- and
- Discrimination against the owners of private rolling stock in the allocation of return traffic to avoid empty hauls (2010).

Indeed the charges of discrimination have advanced one step down the vertical chain, as the FAS is currently reported to be investigating allegations of discrimination against the owners of private oil tank cars by the service facilities of RZhD daughter company Freight One, to which RZhD has leased its oil tank car shops.

6. The Strategy for Railway Development in the Russian Federation to 2030

Though no one says that all the steps in the Structural Reform Program of 2001 have been completed, the focus of attention in railway policy discussions has shifted sharply in the direction of steps to be taken to make the railways more efficient and effective over the next twenty years. This new Strategy in turns envisions two distinct phases of future action, the first of “modernization” and the second of “system expansion”.²³

The years from Strategy enactment in 2008 through 2015 are to focus on modernization: first of all of the rolling stock, but also including technological upgrades of the entire system and the refurbishment, improvement, and to some degree expansion of the infrastructure. Most conspicuously, the inventories of both the freight and passenger cars and the locomotives – especially those owned by RZhD itself and its daughter companies – are quite old and heavily depreciated; RZhD has been warning for years that the Russian railways were not as efficient and effective as they could be so long as their rolling stock was becoming obsolete. These concerns have in turn been related to a perceived inadequacy of capacity within Russia for the manufacturing of

²³ Pamela Luică, “Railway Strategy 2030: Russia’s most ambitious programme,” *Railway PRO*, 20 May 2010; Oleg Toni, “Future Investment Program of the JSC “Russian Railways,” Slide presentation, Vienna, 16 November 2010, <http://www.eurasia-railway.org/images/content/file/101114%20Broadliner%20Toni%20LW%5B1%5D.pdf>.

both freight and passenger cars and rolling stock.²⁴ In addition, the Strategy calls for some refurbishment and expansion of the track network – most notably, a) of the Baikul-Amur Mainline (BAM), long the neglected junior partner to the Trans-Siberian for long-distance freight traffic in the east, along with b) a broad new rail complex supporting the 2014 Olympics in and around the Black Sea resort town of Sochi, and c) the beginnings of Russia’s planned high-speed passenger lines, including a line from Moscow to St. Petersburg.²⁵ All in all, this first stage of the Strategy calls for electrification of 3500 km of existing lines and construction of 6000 km of new lines.²⁶

The Strategy then envisions that the years from 2015 through 2030 will be devoted to a more significant expansion in the coverage and capacity of the overall rail infrastructure, including harmonization of the Russian portions of planned “international transportation corridors” with their connecting lines in the European Union to the west, to Azerbaijan and Iran (and thence to the Persian Gulf) in the south, and to North Korea, South Korea, and China in the east. In addition to the BAM and Trans-Siberian upgrading, a dramatic new increase in overall trans-European capacity is slated to come from a new broad gauge line connecting Moscow with Vienna through Ukraine and Slovakia.

²⁴ Boris Lukov, “Three-stage programme to update RZD’s fleet,” *Railway Gazette*, 3 April 2009. Globaltrans (2008) expresses more optimism – but then that document is a Prospectus seeking investors in an operator’s GDRs.

²⁵ Recent reports suggest that plans for a high-speed line between Moscow and Sochi in time for the 2014 Winter Olympics have been abandoned, but discussions continue for lines between Moscow and Nizhny Novgorod, Kazan, Samara, and Yekaterinburg in time for the World Cup matches in the summer of 2018, and eventually for high-speed lines between Moscow and Kiev and Minsk. Roland Oliphant, “Foreign Investors Sought for \$68Bln High-Speed Rail,” *Moscow Times*, January 31, 2011.

²⁶ Lukov, *supra* note 18.

In total, up to 20,000 km of track may be added to the system under this Strategy, with perhaps the most ambitious and expensive components being a) further expansion of capacity on the Trans-Siberian, BAM, and related track in support of very long distance international shipments, and b) reconstruction and development of a Moscow rail “ring road”.²⁷ Likewise, the Strategy calls for the purchase of 30,000 locomotives, 1 million freight wagons, 30,000 conventional passenger wagons, and 24,000 “EMU cars” – electric-powered passenger wagons that run without locomotives, frequently used in transit and suburban trains.²⁸

This raises the issue of money. The estimated cost of the full program outlined by the Strategy between 2008 and 2030 is 13812.4 billion rubles – US\$463.3 billion at the current exchange rate. This appears to be an undiscounted sum of the streams of payments envisioned over 22 years. The sources of funds reportedly planned for the Strategy are as follows:²⁹

RZhD	42.7%
Private investors	32.2%
Russian government	20.6%
Regional governments	4.5%

The requirement that RZhD come up with this large amount of investment funds has not led the government or RZhD to the conclusion that, since opening up rolling stock ownership to private firms was so successful in attracting private investment (not to

²⁷ Toni, *supra* note 17.

²⁸ Boris Lukov, “RZD adopts long-range development strategy,” *Railway Gazette*, January 22, 2008.

²⁹ Toni, *supra* note 17.

mention creating incentives for aggressively competitive conduct), opening up locomotive and infrastructure ownership to private firms would be a similarly promising strategy for the same purpose. Instead, the need for investment funds is apparently the driving force behind the serious discussions and various moves toward selling off shares in the RZhD “daughter companies” to private investors. It is to these “daughter companies” that we now turn.

7. RZhD “Daughter Companies” and Independent Operators

7.1 The Elder Daughters: Refservice and Transcontainer

Two of the first “daughter companies” created by RZhD were Refservice, specializing in arranging for the transportation of frozen and chilled products on RZhD trains, and TransContainer, specializing in arranging for the transportation of cargo in containers on RZhD trains.

Refrservice was established as a joint-stock company in 2006, with RZhD holding 100 percent of its shares minus one. The primary business of Refservice is the transport of fresh and frozen fish from the Russian Far East to Moscow and St. Petersburg, but it carries a variety of perishable cargo, including products such as beer and fruit juices that are perishable but not necessarily required to be refrigerated. Refservice owns about 15-16 thousand refrigerated or insulated freight cars, which constitutes at least 80 percent of the total of such rolling stock in Russia. In 2009, an appeals court upheld a verdict by the Federal Antimonopoly Service that RZhD had discriminated in favor of Refservice and against independent rolling stock owners in the transport of perishable goods.

TransContainer is the leading provider of container transportation in Russia, with company ownership of about 25,500 flatcars and a network of 46 container terminals in Russia (and one in Slovakia). The company, like Refservice, was established in 2006, but TransContainer has had a more interesting ownership story. First of all, a reported rationale for its very creation was the capturing for RZhD and its affiliates of the revenues that had been earned by freight forwarders in arranging for container traffic; RZhD vice president Khasyan Zyabirov memorably described freight forwarders as “like ticks on an elephant’s body.”³⁰ Second, for most of the history of this daughter company, RZhD held 85 percent of TransContainer’s shares, with the European Bank for Reconstruction and Development holding 9.25 percent and the rest divided among three private investment funds.³¹ Recently, however, the Russian government has approved a plan for RZhD to sell an additional 35 percent of TransContainer shares as part of its plan to raise capital funds for its long-term investment strategy, and RZhD president Yakunin has raised the possibility that his company’s holdings of TransContainer may eventually be reduced to 25 percent.³²

A second interesting story concerns the purchasers of these TransContainer shares.

8.75 percent of the shares were purchased by VTB Capital, and 5.2 percent by

³⁰ Lyuba Pronina, “RZD Declares War on Forwarders,” *Moscow Times*, May 17, 2004.

³¹ Interfax News Agency, “IPO bank values TransContainer at \$1.3 bln-\$1.6 bln,” part 2, October 15, 2010.

³² “Russian Railways chief: Company may cut stake in TransContainer to 25%,” *RZD-Partner*, 26 November 2010. Sarah Reynolds of Reynolds Associates notes that “the 25% + 1 blocking share ... makes any of the decisions requiring a ¾ majority of shareholders – or of the board if the board is proportionally constituted – impossible without the approval of that shareholder. Those include changes to the corporate charter or to the authorized capital, reorganization or liquidation of the company, and changes in the number and means of selection of the board. Perhaps more importantly, from the point of view of ... control of the company’s day-to-day business behavior, stockholders with 25% have a right of access to the accounts of the company and to the records of meetings of management bodies.” (private communication with the author, January 2011)

TransFinGroup, two private investment funds. 12.5 percent were purchased by the Far Eastern Shipping Company, FESCO. FESCO's website calls the company the "#1 Russian [Ocean] Shipping Line" and describes the company and TransContainer as "leaders of the Russian container market." FESCO also owns 50 percent of another container operator, Russkaya Troyka, in a joint venture partnership with RZhD and NPF Blagosostoyaniye, which is RZhD's pension fund operator, whose funds are in turn managed by the TransFinGroup.³³ In other words, three of Russia's largest providers of rail transport of containers – almost certainly Russia's three largest such providers – are enmeshed in a complex ownership web among themselves and with RZhD. Add to all this the fact that FESCO envisions a "long-term strategic partnership" with TransContainer that includes buying a controlling stake in the company within the next few years, and there seems to be real cause for concern about the importance of competition in the restructuring of this important and growing part of the Russian railway system.³⁴

7.2 The Younger Daughters: Freight One and Freight Two

Freight One (PGK), established in July 2007 as a fully-owned subsidiary of RZhD, is Russia's largest rail transport operator, with 220,000 units of rolling stock – about 21 percent of the rolling stock inventory of the entire country. The creation of the company was controversial from the beginning, with the Federal Railway Transport Agency, Roszheldor, arguing that the creation of competition that was announced as

³³ Interfax News Agency, November 19, 2010; see also www.en.toutlemonde.ru/news/14-generation-z.

³⁴ "Fesco, TransContainer partner up," top.rbc.ru, November 2, 2010; "Fesco Wants TransContainer," *Moscow Times*, November 18, 2010; "Officials are offering to sell 'Transcontainer' control," *RZD-Partner*, November 18, 2010.

one goal of the railways restructuring program would be better served by selling RZhD rolling stock to some of the private operators already in existence at the time and expressing interest – in particular, the Independent Transport Company (NTK, a subsidiary of Novolipetsk Steel), the New Forwarding Company (NPK, a subsidiary of Globaltrans), Transgarant (a subsidiary of FESCO), and TransOil – rather than by establishing a new freight operator as an RZhD daughter company.³⁵ However, the Federal Antimonopoly Service did not sign on to the Roszheldor initiative, instead joining with RZhD itself in supporting the creation of Freight One as a step in increasing system transparency.³⁶

More recently, RZhD and the Russian government have discussed the possible sale of a controlling share of Freight One to a private company, though with RZhD maintaining a “blocking shareholding”, i.e. 25 percent plus one share. In fact, Deputy Transport Minister Andrey Nedosekov “considers it important that the blocking shareholding should be owned by RZD. In this case the transporter will act as a strategic partner defining the cost of the service on the market amid a large number of railcars.”³⁷ A number of private companies have been reported to have an interest in

³⁵ “Drifting Apart,” *Kommersant*, October 24, 2006. The English translation of the report lists the “New Carriage Company”, which we interpret as the “New Forwarding Company”, since we have found no record of the former.

³⁶ Tatiana Tokareva, “Model of Transportation Market: Discussion Goes On,” *RZD-Partner*, October 26, 2006.

³⁷ “Deputy Transport Minister: RZD must sell 75% minus 1 share in Freight One”, *Interfax*, translated and reported by *RZD-Partner*, October 19, 2010

buying shares, even a controlling share, in Freight One, including Globaltrans, NLMK, and TransOil.³⁸

The Ministry of Transport reportedly proposed that RZhD sell its controlling share in Freight One before it created a second general freight hauling daughter company, Freight Two (VGK).³⁹ However, like other reform goals related to competition, this one was apparently ignored, and Freight Two began operating on September 30, 2010. The initial allocation of RZhD rolling stock to the two general freight hauling daughters created two companies with somewhat different specializations – Freight One owns a diverse inventory that includes a very large number of tank cars (for hauling bulk liquids such as oil), while Freight Two’s initial stock consisted of 50,000 gondolas (cars that carry bulk solids such as coal). However, the plan is for the inventories of the two companies to become more similar as a total of up to 180,000 cars are transferred to Freight Two before the end of 2011.

Now that there are two general freight hauling daughter companies, it is reportedly the intention of the Ministry of Transport and the Ministry of Economic Development and Trade to require RZhD to sell a controlling stake in one or the other but not both.⁴⁰ In the same vein, RZhD president Yakunin has expressed the view that “It would be contrary to the spirit of reforms, in terms of the state’s interests, for us to sell controlling stakes in both companies.”⁴¹ News reports suggest that the same

³⁸ Pamela Luică, “Potential investors may buy First Cargo and Second Cargo shares,” *Railway Pro*, July 15, 2010; “RZD estimated Freight One at \$8bln,” *RZD-Partner*, October 26, 2010.

³⁹ “RZD may sell a controlling stake in The First Cargo Company before The Second Cargo Company is created,” *RZD-Partner*, April 2, 2010.

⁴⁰ “Launch of Freight Two Delayed,” *Vedomosti*, March 19, 2010.

⁴¹ “Globaltrans May Acquire 50% of VGK Freight,” *RBC Daily*, May 28, 2010.

enterprises that expressed an interest in buying a controlling share in Freight One would likely be interested in Freight Two if that were the company chosen for sale.

In either case – or if neither sale goes through – for the foreseeable future the collection of large freight operators seems to consist of a “big three”, Freight One, Freight Two, and Globaltrans – which of course raises concerns about the competitive outcome if Globaltrans turned out to be the successful bidder for a controlling share in either of the other two.⁴² As noted above, in what seems to an outsider to be a quirk in Russian law, despite the fact that Freight One and Freight Two are controlled by RZhD, since they are *not* RZhD, the rates that they charge to shippers are unregulated to the same extent as those charged by private operators.

7.3 Private Companies: Friends, Rivals, Suitors of the Daughters?

“Notwithstanding the large number of private operators in the market, it remains significantly concentrated in the hands of a few large players, including the rail transport companies captive to large Russian industrial groups.” (Globaltrans, 2008)

Globaltrans and FESCO are certainly first among equals within the ranks of independent Russian operators. (Recall that none of these are “carriers”, that is, enterprises that run their own trains over the public infrastructure to any significant extent – RZhD remains the only carrier in Russia at this point.) Globaltrans is a large operator specializing in carrying metals, petroleum products, construction materials, and coal.⁴³ The company began life as Severstaltrans, the transport subsidiary of the

⁴² Ivan Stupachenko, “Freight Two Enters the Market,” *RZD-Partner International* 4 (16), 2008.

⁴³ A company presentation to investors describes Globaltrans as the #1 Russian private operator in metals, #4 in petroleum products, #8 in construction materials, and #5 in coal.

international steel manufacturer Severstal, but became independent in 2008.

Globaltrans is the parent of the New Forwarding Company (NPK). Globaltrans owns around 21,000 freight cars and 18 locomotives, the latter now used only for very short hauls.⁴⁴ The company has at different times offered to acquire a controlling share in either Freight One or Freight Two. As noted above, the Russian trade press refers to Globaltrans as the third member of the “Big 3” of Russian rail operators, along with Freight One and Freight Two. In 2010, Globaltrans won a seven-year loan from the EBRD for renewal and expansion of its rolling stock inventory. Interestingly, the owners of Globaltrans held a 50 percent share in rival operator Transgarant until 2006 and continue to own a “beneficial interest” – apparently not publicly quantified – in rival operator MMK-Trans (Globaltrans, 2008, 2010).

The Far Eastern Shipping Company, FESCO, is the second largest private Russian rail operator and the largest private operator specializing in containers. The company and its subsidiaries (the most important for our purposes is Transgarant) own almost 16,000 freight cars and 5 main line locomotives (plus 2 shunting locomotives). As noted above, FESCO and RZhD (including affiliated companies) each own 50 percent of Russkaya Troyka, an intermodal container operator, and FESCO, having already acquired a 12.5 percent share in its RZhD-controlled competitor TransContainer, has expressed the

⁴⁴ Laisa (2010) reports that Globaltrans “owns 18 locomotives, which are used to operate services down to 500 km in areas, which do not interfere with RZD. Longer distances are hauled by RZD. The own locomotives are utilized while training Globaltrans’ crew. Company intends to be ready for rapid expansion when the traction market is liberalized.” Globaltrans (2008) concurs.

intention to purchase eventually a controlling interest in the company.⁴⁵ FESCO began its corporate life as a steamship operating company in 1880.

One of the newest freight operators is the somewhat less conspicuous Far Eastern Transport Group, DVTG, whose first unit was formed in 2000 and which owns a good deal of transport infrastructure such as rail, sea, and truck terminals both in Russia and in foreign countries. The company and its subsidiary units controlled over 13,000 freight cars as of the end of 2008. The financial press reported in early 2009 that the worldwide economic crisis had forced the firm to miss scheduled bond payments and to seek extensions from its creditors.⁴⁶

The fourth largest of the private operators, also less well known than the likes of Globaltrans and FESCO, is Eurosib SPb, a firm set up immediately following the collapse of the former Soviet Union by executives of the October (St. Petersburg – Moscow) Railway. Eurosib SPb owns almost 12,000 freight cars and specializes in the hauling of wood products, from saw timber to pulp and paper. The company won a loan from the International Finance Corporation of the World Bank in 2005 for the purchase of a portion of its rolling stock inventory.

TransOil characterizes itself as “the largest private company specializing in the transportation of oil and petrochemicals.” The company is reported to own or control over 9 million freight cars. Interestingly, two different Globaltrans GDR prospectuses (Globaltrans 2008, 2010) describe TransOil successively as “a related party” to

⁴⁵ “It will happen,” says FESCO chief executive Sergei Generalov. “Fesco Wants Transcontainer,” *Moscow Times*, November 18, 2010.

⁴⁶ “Far Eastern Transport Group is unable to pay off debt,” *Rusmergers.com*, January 30, 2009, citing RBC daily.

Globaltrans and “a company under common significant influence” with Globaltrans, but no details appear to be available.

As in the reforming railways of Central and Eastern Europe (Pittman, *et al.*, 2007), several of the privately owned rail operators are subsidiaries of large shippers of bulk commodities.⁴⁷ Russian examples include:

- Metalloinvesttrans, the transport subsidiary of Metalloinvest, one of Russia’s largest iron ore miners and steel producers. Metalloinvesttrans is reported to control over 9,000 freight cars and to specialize in the haulage of iron ore from its own mines to its own steel mills, but also to haul other materials such as coal and stone for other shippers such as large mining companies NLMK (Novolipetsk Steel) and Mechel.
- The Independent Transport Company, NTK, a unit of NLMK which hauls raw materials and steel for its parent company. NTK purchased 10,000 gondola cars from RZHD in September 2010, to add to the approximately 5,000 it already owned or controlled. The owner of NTK, businessman Vladimir Lisin, has expressed an interest in purchasing shares of and/or establishing an “operational association” with Freight One.⁴⁸
- MMK-Trans, a unit of steel maker MMK, like NTK mainly a hauler of raw materials and steel, reported to own 3,400 freight cars. As noted above, the owners of Globaltrans hold an unspecified “beneficial interest” in MMK-Trans, a

⁴⁷ A good general discussion of the Russian situation is Nadezhda Vtorushina, “Captive Operator as a Safety Measure,” *RZD-Partner International* 4 (16), 2008.

⁴⁸ “PGK sees an operational association with NTK possible in case of purchasing its shares by Mr. Lisin,” *RZD-Partner*, June 23, 2010, from Interfax.

company to which Globaltrans provides freight rail services, leases rolling stock, and provides rolling stock maintenance and payment agency services (Globaltrans 2008, 2010).

A manager for one of the “captive” operators, Dmitry Ryabov of Uralchem-Trans, has predicted that “the captive companies will have up to 50% of the rolling stock fleet, but they will have to perform as operator companies [i.e. to serve shippers other than their parent companies] to lessen their logistical costs.”⁴⁹

8. The Future

While much has changed about the Russian railways since the beginning of the reform program in 2001, clearly some things remain the same. In particular, the Russian railways remain a monopoly network infrastructure over which a monopoly carrier – the same monopoly – runs locomotives pulling freight cars. These days a little over one-third of those freight cars are owned by private companies and about one-quarter more by the daughter companies of RZhD, and in those cases the tariff charged to shippers may differ from the tariff set by the FTS to the extent that the owner of the rolling stock wishes to charge a different rate for its use than the rolling stock component of the FTS tariff. Thus at this point one may say that Russia is in a state of third party access to the monopoly infrastructure, perhaps on its way to complete vertical separation – but only in the globally unusual sense in which “access” is by rolling stock only, not train operating companies, and the “infrastructure” is defined to include locomotives and locomotive and train operation, and with the further caveat that the two largest “third

⁴⁹ Quoted in Vtorushina, *supra* note 40.

parties” whose tariffs are partly unregulated are subsidiaries of the infrastructure owner.

Will there ever be independent “carriers”, operating their own locomotives and running their own trains over the RZhD track network? Either (but not both, at least any time soon) Freight One or Freight Two seem logical candidates, but if a “controlling” share in either is sold to a private firm only under the condition that RZhD maintains a “blocking” share, that is not independence as usually defined in (for example) competition laws. At least three private operators – Globaltrans, TransOil, and Baltransservis – own small numbers of locomotives and reportedly have some type of “carrier license” (Globaltrans 2008), which suggests that they, at least, may be anticipating progress on this front at long last. Of course, to the degree that RZhD were to remain in control of both infrastructure and some TOCs, the usual concerns about nondiscriminatory access to the infrastructure under a regime of third party access would remain.

A final question concerning competition is whether the horizontal separation option is truly off the table, as all appearances suggest but has apparently never been definitively stated. This is the only one of the standard models for railways restructuring that creates competition while fully maintaining economies of vertical integration.

One weakness of this option in the context of the debates in Russia was always the difficulty of creating competition east of Omsk, over the Trans-Siberian Railway.⁵⁰ It is interesting in this respect to note that the Strategy for Railway Development in the

⁵⁰ ECMT 2004; Friebel, *et al.*, 2007. See also Anna Belova and Louis Thompson, “Russian Railways Move Ahead”, *Railway Gazette*, October 2005.

Russian Federation to 2030, described in Section 6 of this paper, includes a plan to double the capacity and as much as triple the traffic on the Baikul-Amur Mainline (BAM).⁵¹ In that case, RZhD president Yakunin believes that the BAM – constructed, after all, as a “strategic alternative” to the Trans-Siberian – would have sufficient capabilities to handle all the bulk freight traffic of the Far East, while the Trans-Siberian took the speedier container and passenger traffic.⁵² Such a division of traffic sounds quite efficient for a vertically separated infrastructure monopolist, but if the BAM is that strong, might another sort of efficiency be promoted by having two privately owned, vertically integrated parallel railroads competing with each other? The great British economist Alfred Marshall had an opinion almost one hundred years ago:

“One of the most interesting and difficult applications of the theory of monopolies is to the question whether the public interest is best served by the allotment of a distinct basin to each great railway, and excluding competition there.... It must be admitted that, other things being equal, the ... [cost-driven] price fixed by a railway will be lowered by every increase in the demand for its services.... But, human nature being what it is, experience has shown that the breaking of a monopoly by the opening out of a competing line accelerates, rather than retards, the discovery by the older line that it can afford to carry traffic at lower rates.” (Marshall 1920, at V.XIV.5)

⁵¹ “Freight volumes via BAM to reach 100m tons a year by 2050,” *RZD-Partner*, March 24, 2010, from www.en.portnews.ru; “RZD almost doubled the forecast of the BAM capacity,” *RZD-Partner*, September 27, 2010.

⁵² Leila Mustafaeva, “The Second Birth of BAM,” *RZD-Partner International*, 4 (16) 2008.

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Table 1. Russian railways compared with other major world railways

Country	KM Track	Freight ton-KM(M)	Passenger-KM(M)	(Freight + Passenger)/Track	KM Track/Land Km ²	KM Track/Land Km ² (USA lower 48)	Population (2010)/Land Km ²	Population/Land Km ² (USA lower 48)
China	60,809	2,511,804	772,834	54,015,656	0.0063		139	
India	63,327	521,371	769,956	20,391,413	0.01926		357	
Russian Federation	84,158	2,400,000	175,800	30,606,716	0.0049		18	
USA	227,058	2,788,230	9,935	12,323,569	0.0231	0.0296	14	40

Sources: US Census, CIA World Factbook, World Bank

Table 2. Russian Railways in 2003



Source: Louis S. Thompson, World Bank