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Part C: Central and Eastern Europe

Foreword

The European rail market has been the subject of major reform over the last two decades. But there are major differences across Europe. Some countries started on this process almost 20 years ago whilst, in others, reforms have begun only recently. Also, several different basic models are emerging and there are many contrasting views on what remains to be done to create a competitive rail sector.

In our daily work in Brussels, we regularly meet national rail experts. But there are few people who have a comprehensive overview of developments across Europe as a whole. The sheer pace of reform and the fact that much material only appears in the national language make it difficult to keep up.

In this book, we try to bridge this gap, by inviting distinguished national experts to write an overview on reforms within their country. In particular, we asked them for their opinion on what has worked, and what has not. We are honoured to publish the work of one CEO, the Chairman of UIC, two former ministers of transport, two senior administrators, ten senior academics and five consultants of international repute. Inevitably, given the differences in backgrounds and cultures, the chapters differ in emphasis, approach and conclusions. Such diversity only reinforces the importance of countries organizing their rail markets based on their own political and commercial realities.

We are pleased to include four chapters on reforms outside the European Union. The greatest successes of reform have arguably been in the United States and Japan, whilst Latin America has the most experience in concessioning. With the exception of Russia, the reforms in these countries are all based on strikingly different models of reforms to those being applied in the European Union.

Within Europe, this book also shows the differences in the political and economic conditions between member states – particularly between East and West. These have led to a variety of solutions and results. To recognize these differences is the first step towards making reforms which suit all conditions, not just those in Western Europe.

This book is relevant to the European political process. Our view – also reflected in many of the chapters below – is that whilst much progress has been made on introducing competition within the European rail freight market, far less progress has been made in introducing a socially efficient pricing system across the transport modes. Indeed, important amendments to the principles of tolling trucks in Europe (Eurovignette Directive) were first discussed in the 1990s and included in the Commission's 2001 White Paper on transport, but member states are still not allowed to charge heavy goods vehicles for the external costs that they cause. Also, in many member states, there is inadequate investment in rail infrastructure.

Despite these problems, we remain confident in the future of the European rail industry. It will take time – but the pressure to serve the customer, and to reduce the influence of governments on internal management processes, will translate into better products provided at lower cost. Increasing road congestion and concern about climate change will also favour rail. Moreover, the enlargement of Europe creates new opportunities for the rail freight market as trade grows based on a new division of labour in Europe. If complemented by a more modern infrastructure and proper pricing between the modes, rail will play a central role in the European transport market of the future.

Dr. Johannes Ludewig
CER Executive Director

List of authors

Introduction – Jeremy Drew

Jeremy Drew has worked at the World Bank and Coopers & Lybrand Management Consultants (now IBM Business Consulting), the UK Office of Rail Regulation and most recently CER. He now runs his own consulting company and has provided advice on railway issues in many countries to development and private banks, governments, regulators and rail operators on rail economics, regulation and business issues. He is also a Visiting Research Fellow at the Institute for Transport Studies, University of Leeds, and holds degrees in engineering and economics from the Universities of Oxford, Leeds and City (London).

Japan – Yoshio Ishida

Yoshio Ishida joined the Japanese National Railways (JNR) in 1967. In 1987, when the Japanese Government privatized the JNR, he was assigned to the East Japan Railway Company (JR East) as General Manager of the Train Operating Division at Tokyo Headquarters. Since then he has assumed various responsibilities in JR East, primarily in train operations and rolling stock management as Director of the Transport & Rolling Stock Department, and then as Director of the Tokyo Branch Office. In 2000 he was appointed as Executive Vice President to control overall railway operations. Since 2004, he was in charge of all technical and international matters as Vice Chairman of JR East. In April 2009 he was appointed Chairman of UIC (International Union of Railways). Mr Ishida is a graduate of Tokyo Institute of Technology.

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John Winner is President of Harral Winner Thompson Sharp Klein, Inc., a transportation consulting firm specializing in rail transport. Mr Winner has worked on railways around the world and has been working in Russia since 1991 where he directed the EBRD's first major investigation into Russian railways, The Rail Sector Survey. Mr Winner was Vice President at Mercer Management Consulting and Director of Rail Management Consulting Services at Booz Allen Hamilton, Inc. He served as head of strategy and operations planning at a major US railway. He has an engineering degree from Carnegie-Mellon University.

Andrei Evdokimov has been working in the Russian rail sector since his involvement in the Rail Sector Survey in 1991. He has served as consultant to the World Bank, was Director of Russian Financial Services for GE Capital (Russia), and served as the Russia and CIS representative for NACO Inc (a US-based rail equipment manufacturer and the world's largest foundry group). He holds a degree in economic geography from Moscow State University, a certificate in business studies from the American Institute of Business and Economics in Moscow, and an MBA from London Business School.

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Lou Thompson has worked in engineering and economic consulting. He held senior positions at the U.S. Federal Railroad Administration, including Associate Administrator for the Northeast Corridor Improvement Project and for rail assistance programs and policy development.

From 1986 to 2003 he was Railways Adviser for the World Bank where he advised in all of the Bank's railway lending. He is now a private consultant in railway economic and strategic issues. He holds degrees from MIT and Harvard.

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Emile Quinet is Emeritus Professor of École des Ponts ParisTech and member of the Paris School of Economics research team. He is also a member of the French National Academy of Technology. He is the author of about 20 books and 200 articles, communications and research reports on transport and public economics. He works as an expert in transport economics, strategic management, project assessment, regulatory process and competition issues for public, semi-public and international organisations.

Britain – Chris Nash and Andrew Smith

Chris Nash is Research Professor in the Institute for Transport Studies, University of Leeds (ITS), where he leads research in the fields of rail policy and transport infrastructure charges, in which fields he has led many projects for both the British government and the European Commission. He has acted as expert advisor to many groups, including the High Level Group on Transport Infrastructure Charges of the EC and the Transport and European Union Select Committees of the British Parliament. His recent work includes coordinating the DGTREN-funded GRACE project on measuring the marginal social cost of use of transport infrastructure, and – as part of the IMPRINT-NET project – leading Europe-wide expert groups on road and rail infrastructure charges and the use of funds from road pricing.

Andrew Smith was appointed Lecturer in Transport Economics at ITS and Leeds University Business School in 2004, after completing his PhD at the University of Cambridge. He is currently or has recently been involved in a number of transport cost modelling projects, including: an econometric study of British TOCs; an international econometric study of rail infrastructure companies; and an international econometric investigation of marginal rail infrastructure costs. Andrew has also been involved in advising the London Underground Office of the PPP Arbiter on efficiency and wider regulatory issues.

Italy – Lanfranco Senn and Tatiana Cini

Lanfranco Senn is Professor of Regional Economics at Università Bocconi, where he is the Director of the CERTeT – Centre for Research on Regional Economics, Transport and Tourism. He is also the President of Metropolitana Milanese SpA (the Subway Company of Milan). He

is a member of numerous scientific committees, publishing committees and national and international study centres that deal with territorial economics, economics services, economics of transports and tourism. He has directed numerous researches and development programs for the European Community, public administrations and private organisms. He is also the author of numerous scientific publications.

Tatiana Cini is a Fellow at CERTeT. She conducts research and consulting on subjects concerning the support of local and regional development projects, transport and tourism. She carries out analyses of local requirements, economic/financial feasibility studies of infrastructure and management projects and social-economic impact analysis. She has gained research experience in both the transport and tourism sectors at European level.

Sweden – Gunnar Alexandersson and Staffan Hultén

Gunnar Alexandersson has recently finalised his doctoral thesis at Stockholm School of Economics on regulatory reforms in the Swedish bus and railway sectors. His research has focused on the driving factors behind regulatory changes, but also on the effects of these changes upon market structure and firm behaviour and their relevance for initiating new reforms. A related area of research has been the increased use of competitive tendering in the transportation industry. During 2010, Gunnar Alexandersson moved his main employment from Stockholm School of Economics to the Association of Swedish Train Operating Companies (ASTOC) where he works as a policy adviser.

Staffan Hultén is an Associate Professor at Stockholm School of Economics and recurrent Visiting Professor at École Centrale Paris. He has written a large number of book research reports, chapters, journal articles and books on innovation, regulation and standardisation in different industrial sectors. A research area of particular interest is technological and regulatory change in the railway industry. In 1993 he co-edited the book “High Speed Trains. Fast Tracks to the Future”. High speed trains was also the topic of a 2009 Swedish research report, co-authored with Gunnar Alexandersson.

Switzerland – Andreas Meyer and Bernhard Meier

Andreas Meyer joined Swiss Federal Railways (SBB) as Chief Executive Officer on January 1, 2007, a position he is still holding today. He began his career with ABB in 1990, where he started as a legal counsel to ABB Management AG, Baden. Mr Meyer also held the positions of Project Manager and Assistant to the Executive Board of W+E Umwelttechnik AG, Zürich before being appointed Managing Director of the German company BABCOCK-IKR Rohrleitungsanlagen GmbH in Oberhausen and Bitterfeld. In 1997 he became CEO of DB Energie GmbH, Frankfurt am Main. In addition, he held several senior positions in DB's technical and services divisions. He was appointed Head of DB Stadtverkehr GmbH, Frankfurt am Main in 2004 and Member of the Executive Board of Deutsche Bahn AG, Berlin, occupying these posts until taking up his current position. Mr Meyer holds a law degree from the University of Basel, is admitted to the Bar and completed an MBA at INSEAD in Fontainebleau (France) in 1995.

Bernhard Meier is Public and Government Affairs Delegate for SBB. Before joining SBB he held positions in the cantonal and federal administrations and headed the public and public-private enterprises staff unit in the General Secretariat of the Federal Department of Environment, Transport, Energy and Communications (UVEK). In 2007 he became Head of

Transport Policy at SBB Cargo, Basel, and in 2008 he was promoted to Head of Corporate Services before taking up his current position in 2009. Mr Meier holds a diploma in economic geography and regional research from the University of Berne and a PhD in geography and is a qualified economist.

The Netherlands – Didier van de Velde

Didier van de Velde is partner at inno-V consultancy (Amsterdam). He is also researcher at the Faculty of Technology, Policy and Management, Delft University of Technology (The Netherlands). He provides advisory and research work on institutional reform issues in the public transport sector including the introduction of various forms of competition in these sectors. During the past years, he has provided advice to local, national and international authorities on issues related to competition and contracting in public passenger transport. He was involved in the discussions on the reform of the European legislative framework pertaining to public service obligations in the European public transport sector and advised the European Commission on this topic.

Poland – Juliusz Engelhardt

Professor Juliusz Engelhardt has since 2008 been Undersecretary responsible for rail in the Polish Ministry of Infrastructure. Previously he was Head of the Department of Economics of Enterprises at Szczecin University. He has also participated as an expert to the Parliament's Commission and Economic-Technical Council under the General Director of the Polish Railways, as well as adviser to the General Director of PKP. Between 1994 and 1996 he was a deputy of the General Director of PKP. He has been a member of the Section on Organisation and Management of Transport Committee of the Polish Science Academy, and also participated as an expert in international projects and feasibility studies on railway transport issues. Prof. Engelhardt is author and co-author of more than 200 publications.

Romania – Marin Stancu

Marin Stancu is at present Deputy Director of the Directorate for Infrastructure and Railway Transport of the Ministry of Transport and Infrastructure in Romania. He has 23 years' experience in railways and was involved in the process of railway reform in Romania during the last 12 years. He was actively involved in the process of European integration during the period of accession of Romania to the European Union. Dr. Stancu is also an Associate Professor at Politehnica University of Bucharest. Previously he worked as scientific researcher in railway for about 10 years at the Institute for Research and Technology in Transport Bucharest.

Czech Republic – Petr Moos

Professor Petr Moos is now Vice-Rector at the Czech Technical University in Prague following many years as Dean of the Faculty of Transportation Sciences and Head of the Department of Informatics and Telecommunications. He is also a former Minister of Transport and Communications with the Czech Government. As Minister of Transport, he took part in the team formulating the official transport policy of the Czech Republic. He is a Fellow Member of IEE and the member of scientific boards at several universities.

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Raivo Vare was the Minister for Transport and Communications in Estonia from 1996 to 1999. As Minister, he was responsible for drafting and realizing the major railway reforms. He has also worked as Director of Tallinna Bank, CEO of Pakterminal, the largest single customer of the Estonian national railways, and Development Director for the Estonian railway company. Currently, he is a member of the President's Academic Advisory Board and works as a business consultant.

Introduction

Jeremy Drew[1)]

This book begins with four chapters on rail reforms in countries and regions outside Europe. It then contains seven chapters on countries in Western Europe and four in Central and Eastern Europe. This introduction reviews the general messages that emerge from these chapters. It considers why reforms have been necessary, how reforms have been implemented and, finally, the evidence as to which reforms have been most successful or which have not.

Why were reforms necessary?

The traditional organisational structure for most of the world's railways in the post-war period was that of a vertically-integrated monopoly owned by the public sector. Given the high fixed costs associated with providing infrastructure and the importance of providing affordable and attractive public transport to all income groups, basing a national rail service on a publicly-operated monopoly seemed to make sense. This is partly because it was assumed that the railway as a whole was a natural monopoly (average cost falls with output). In the USA and Canada, tight regulation of prices and services provided by private companies was usually seen as the solution. However, over the last 30 years, all these assumptions and solutions have been fundamentally challenged. Considering the starting point, it is impressive how much progress has been made in reforming railways in such a wide variety of ways.

As is clear from the chapters in this book, reform was driven in many countries by rail's inability to compete with other modes of transport, particularly road transport. The rapid expansion of motorways, which reached its peak in Western Europe during the 1970s and in Central and Eastern Europe over the past 15 years, has reduced road transport times and costs dramatically. This was accompanied by a sudden increase in permitted weights and dimensions for heavy goods vehicles, following EU's Directive 96/53 which was transposed into national legislation in 1997.

Apart from high speed rail, which only makes sense in certain corridors, there have been no comparable changes for the railways and this has made it increasingly difficult for rail to play its optimum role in the transport system. This has ultimately meant that many railway companies, particularly their freight businesses, have run into traffic decline and financial difficulties. At the same time, there has usually been political support for promoting rail as an environmentally friendly alternative to road and air transport, and an increased role for rail is seen by many as a way to reduce the external cost of the transport system. This has taken on a new urgency with the growing concern about climate change - rail is the only mode for which it would be relatively easy to break dependence on fossil fuels, which are rapidly depleting and whose use is a major cause of greenhouse gas emissions (CER 2008a). These concerns have led and continue to lead many countries to reform their rail sectors.

The chapters on the United States/Canada and Japan show that reforms there were driven by crises in which railway companies became bankrupt. The massive social cost and economic

1) The author would like to thank Chris Nash, Gunnar Alexandersson and Johannes Ludewig for their comments on this chapter. This chapter contains sections from the introductory chapter, written by Edward Calthrop, in an earlier CER book on Reforming European Railways (CER, 2005). Most of the chapters in this book are updates of chapters in the earlier book.

disruption caused by these crises highlights the importance of embarking on reform before crises occur. In Germany, in contrast, it was fear of bankruptcy following re-unification that led to reforms and, because these reforms were well planned, a crisis was thereby avoided.

In Western Europe, the market share of most railways began to decrease in the 1950s. This reflected in an underlying shift in the economy away from traditional heavy industry – to which rail had been well suited – towards a service and retail economy, combined with increasing car ownership and road building. In Central and Eastern Europe, by contrast, the decline in rail transport occurred much later but was much more abrupt and severe, and concentrated on the period of intense economic reform beginning in the early 1990s. Rail's share of the freight market in Central and Eastern Europe will soon fall to the level of Western Europe unless drastic action is taken.

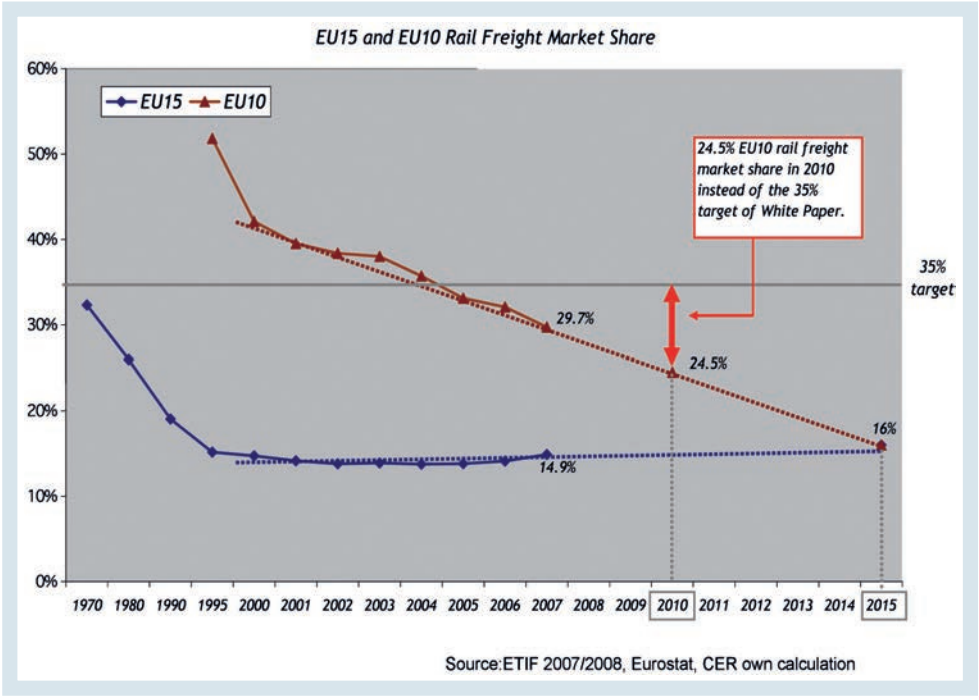

Figure 1: Rail freight trends and the White Paper target

There has been much discussion about the reasons behind the rail sector's difficulties in competing with other modes, highlighting political involvement. Two issues stand out in particular.

Firstly, railways were traditionally managed as part of a government ministry, with few incentives for managers to meet market requirements. To make things worse, management had to deal with often conflicting incentives from different branches of government: ministers representing transport, finance, industry, labour, regional development and even defence all had interests in the rail sector, not to mention constituency politicians, including local mayors, all of whom had a strong interest to promote local interests over national ones.

Secondly, in many cases, politicians have required railways to improve and expand railway infrastructure and services without necessarily wanting to pay for this. Faced with insufficient funds, yet unable to alter politically-determined service patterns and tariffs, railways have had little choice but to accumulate debt. This has been a major driving force behind the reform of railways across the world in recent decades.

Governments remain, nevertheless, important strategic players in the rail market. But their strategic goals need to be clear, consistent and properly funded. As discussed in the chapter on Switzerland, railways there have benefited from operating within a favourable and extraordinarily consistent political environment with few changes of ministers or transport policy. Internalisation of external cost for road transport and major investment in railways, partly with the proceeds, has stabilised rail's already high rail market share in freight (40 %) and increased its share of passenger transport to more than 15 %.

This is in stark contrast to much of the rest of Europe and, indeed, to much of the rest of the world. The chapters in this book bear testimony to the almost continual process of reform in many countries. Whilst a step-by-step process, based on a long-term but adjustable plan, is probably the best way of reaching objectives, reforms in several countries give the appearance of trying to hit a 'moving target' – one reform leads to unintended consequences, which further reforms try to address. But there is often no coherent government strategy towards the transport sector as a whole. Indeed, there is a danger of the same thing happening at EU level as new legislation is introduced before the last has been properly enforced and given time to have its effect. To be effective, any changes in legislation should be based on adequate experience and sound research (Nash et al, 2009).

This takes us on to another important factor driving reform in recent years in the European Union and in nearby countries, which is European Union legislation. Three packages of rail directives over the past decade have been adopted at the European level and are reproduced and summarised in a recent book (CER, 2008b). The main ultimate objectives of these packages and previous directives are to require member states to establish rules which allow open access to railway infrastructure and fair competition between railway undertakings for freight and international passenger services, in the context of a single market for railways in the European Union, and to ensure the financial viability of companies operating in the rail sector.

How to reform?

The chapters in this book demonstrate the complexity of railway reforms and how much they have varied between countries. A forthcoming publication of the World Bank will set out in detail all the various considerations. That said, in the European context, there are four major issues that directly concern rail reform and that we discuss further below:

- How to liberalise the rail market by introducing non–discriminatory intramodal competition;
- How to organise the relationship between the state and railway management;
- How to deal with historic debt and prevent new debt from building up;
- How to involve the private sector.

A related issue is that of intermodal competition. Whilst this does not directly concern rail reform, changes in the competitive environment have caused many of the recent problems

for rail. This may get even worse if proposals to further increase weight limits for heavy goods vehicles are passed and the Eurovignette Directive is not revised to allow charges to be imposed for the external costs of heavy goods vehicles.

Liberalisation

In the European Union and some other parts of the world, particularly Australia, a major feature of rail reforms has been liberalisation to allow new entrants to compete with each other and usually with incumbent operators.[2] In the European Union and those adjacent countries which follow the same rules, the freight market was fully liberalised in January 2007 and international passenger services in January 2010. Liberalisation of domestic passenger services is currently under discussion within the Commission. All member states have opened up access for freight. Some have already done so also for passenger services, but the chapter on the Netherlands shows that the original intention there, of developing competition in the market for passenger services, had to be abandoned in favour of competition for the market (franchising). There are now wide variations in the details of market opening in different member states (Alexandersson, 2009, pp. 46–47).

To ensure all railway undertakings have fair access to infrastructure, some structural change is required in the industry, particularly the establishment of an infrastructure manager with at least separate accounts from any railway undertaking and prohibition of cross subsidies (to prevent subsidies from the public sector being used to support competing commercial operations) and distinct divisions within any single undertaking (to prevent discrimination) – see Directive 2001/12.[3] Two basic structural models have emerged. In the first, the infrastructure manager is completely separated from any railway undertaking. In the second, the infrastructure manager is part of the same company as a railway undertaking but must provide non-discriminatory access to new entrants. The French model, which provides for separation of key responsibilities for infrastructure investment and timetabling, but not for infrastructure maintenance, is arguably a hybrid of the other two.

The debate over integration versus separation is still alive in Europe today and is reflected in the chapters of this book. There are two main issues with complete separation. First, infrastructure managers do not have a direct relationship with customers and this means that decisions on investment in infrastructure are more likely be made on political than on commercial grounds. Second, it can be difficult to manage the relationships within a fragmented industry. It takes time – and sometimes mistakes – for the various parties to develop an effective working relationship. On the other hand, vertical integration requires stronger regulation to establish fair competition (Nash et al, 2009) and this also takes time to establish.

In practice, these different models have all been made to work and to allow competition to develop. However, irrespective of which basic model is chosen, it is clear that a competitive rail service requires an effective interface between operations and infrastructure, both in investment and operational planning and in dealing with real-time disruption.

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[2] An exception is passenger services in Britain where the incumbent (British Rail) was not allowed to compete for franchises.

[3] These differences also occur within countries. For example the Chapter on Switzerland reflects the views of its authors from SBB, the largest operator, but the second largest operator BLS has quite different views, particularly on vertical separation.

The relationship between state and management

In reforming most state-owned rail companies in Europe, there has been a general trend to giving management greater entrepreneurial freedom to respond to changing market demands. This compliments moves to liberalise the railway market since state-owned companies will be unable to compete with new entrants if they lack this freedom. State railway administrations have been 'corporatised' to form state-owned companies operating under commercial law, in which the state acts only in its capacity as shareholder. This means that the Board and CEO have control over appointments, all day-to-day operations and most aspects of strategy and planning.

A key issue is the extent of financial support provided by the state to the railways, particularly for investment in infrastructure. Overall support is quite considerable in Western Europe, amounting to €38 billion in 2001 (NERA, 2004), but much of it is to compensate for expenditure required by the state, such as those in meeting public sector obligations. In Central and Eastern Europe, in contrast, support is minimal and railways there are usually not even fully compensated for their public sector obligations.

If access charges are based on marginal cost, as required to optimise the use of the railways, infrastructure managers would not be able to cover even their maintenance costs, not to mention the costs of investment in replacement and expansion. Yet, as noted by Nash et al (2009, "there is a need for targeted investment on a major scale to raise rail productivity and quality". State (or EU) support is therefore required to ensure adequate investment, particularly until the external costs of less sustainable modes of transport are internalised.

The burden of debt

In reviewing the chapters below, it is interesting to note how individual governments have tackled the issue of high historic debt. Several different approaches are discussed in the chapters below. Firstly, separation in some cases has allowed the RU to begin life without historic debt. Secondly, some countries created separate entities to finance new infrastructure, as noted in the chapter on Italy. Thirdly, in some countries – notably Germany – a substantial portion of the historic debt was taken back by the government (admittedly along with a number of assets).

In other cases, the historic debt has been left within the holding structure – thus, in principle, having little direct effect on the operating units within the holding – but with a view to privatising parts of the group in order to repay the debt. And finally, in some cases, the debt has just been reallocated. In France, for example, the historic debt relating to infrastructure was allocated to the infrastructure manager (IM), whilst all other debts remained with the RU.

These measures in reducing historic debt and, consequently, financial charges determine the ability of a company to invest in expansion and modernisation, to finance in the necessary restructuring and therefore to compete with other RUs. Those member states, which reduced the debt of their national railway undertakings early on, are now at an advantage, given the increasing restrictions imposed by the EU's state aid guidelines.

In some of the member states that have joined the Union since 2004 and in some of the neighbouring pre-accession states, the problem for incumbent railway undertakings with historic debt is aggravated by new debts made necessary by under-compensation for

imposed public service obligations. This affects their competitiveness against other railway undertakings and their overall budgetary situation, particularly their financial flexibility regarding investments. It also limits their access to credit or means that credit comes with high-risk premiums. This weakens the incumbent in both intra- and intermodal competition.

The absence of state funding, together with declining traffic, means that many infrastructure managers are having to borrow even more to meet the requirements of government for which they often do not pay in full (Nash et al, 2009).

Involving the private sector

Apart from new entrants as railway undertakings, either under passenger franchises or open access for freight or passenger, involvement of the private sector has been quite limited. Private ownership of infrastructure has been particularly short-lived. In Britain, the infrastructure manager, Railtrack, which had been privatised in 1996, was placed in administration in 2001 and replaced by Network Rail, a "not-for-profit" company. In Estonia, the main (integrated) operator EVR, which had been privatised in 2001, was renationalised in 2007. Both cases indicate the difficulties of private ownership of infrastructure since infrastructure remains a natural monopoly, at least in the European context of complex networks and, to accommodate growth, rail infrastructure requires major lumpy investment in assets with long lives and little alternative use (they therefore represent sunk costs). In Britain, one problem was the difficulty of incentivising Railtrack to make sufficient investment. Tighter regulation might have resolved these problems but the chapter on Germany shows that privatising infrastructure has now been ruled out there.

Involving the private sector is often motivated by the need to invest without recourse to public funds. It can be problematic for infrastructure projects since both the private and public sector try to avoid taking on risks, as explained in the chapter on Italy and it is often difficult to ensure that there is identifiable incremental revenue arising from rail schemes. However, some private financing has also been used or is planned for infrastructure projects which involve minimal interfaces with the existing network – in Britain (e.g. High Speed One linking London to the Channel Tunnel), Sweden (e.g. the Arlanda Airport Link) and France (e.g. the proposed high speed line between Tours and Bordeaux). Private ownership has worked well in rolling stock leasing, particularly for passenger transport in Britain and for freight wagons more widely (including increasingly in Russia) – this is because it is relatively easy to develop competition in these markets.

In other cases, private sector involvement is designed to introduce private sector management discipline and competition. The chapters on Sweden and Britain show that problems have also occurred with franchising although privatisation of rail freight in Britain has been a success, again because of competition.

Have reforms been successful?

The reforms have allowed intra-rail competition to develop in freight in many countries: the market share of new entrants in the rail freight market has now reached 35 % in Sweden, 25 %

in Romania, 23 % in Poland, 21 % in Germany, and 12% in both Italy and France (Nash et al, 2009)[3]. There are also signs that competition will develop in international passenger services.

However, the objective is not to introduce intramodal competition for its own sake but to improve efficiency. There are a number of studies of the impact of reforms on productivity but they are often contradictory and generally inconclusive (Nash et al, 2009). However, Wetzel (2008) evaluated the sources of productivity growth in European railways since reforms began and concluded that average productivity growth was 39% between 1990 and 2005 (more than 2 % per year). Whilst this article does not show that reform directly affected productivity (as this would be difficult to model), it does indicate that rail productivity has grown at an acceptable rate over the early period of reforms.

The evidence in this study was based on European averages but there is also evidence that rail traffic has grown fastest in those countries, such as in Germany, Britain and Sweden, which reformed early and comprehensively and where this has been accompanied by adequate investment in the rail sector and a reasonably level playing field with other modes. However, where reform has been carried out in isolation without these other conditions being met, as has occurred particularly in Central and Eastern Europe, liberalisation has instead been accompanied by reduced rail traffic levels and modal share. The chapter on France also demonstrates the difficulties that can arise when reforms are delayed.

Looking outside Europe, getting regulation right is found to be key: experience in the United States demonstrates the dangers of over-regulation of tariffs, services and market entry/exit and the benefits of relaxing this, whilst concessioning in Latin America did not lead to adequate investment in infrastructure. The chapter on Japan shows that traffic has grown since privatisation (despite the stagnant economy) and that the railways have been transformed from massive recipients of subsidies to major sources of tax. Finally, the chapter on Russia shows that the government there has so far rejected both vertical separation and open access, but there are now many private wagons on the network and Russian Railways are establishing freight subsidiaries (which own wagons) and are in the process of partially privatising them.

Conclusions

The rail market in Europe is undergoing a process of fundamental reform, directed in the beginning by some Member States, but increasingly by European legislation. However, there is clearly no one ‘off-the-shelf’ model that can simply be applied to a country wishing to reform – rather it is striking that countries have adopted very different approaches. Even within the broad camps of ‘integrated’ and ‘separated’ railways, very different institutional structures are emerging.

It is interesting to compare the conclusions that different authors draw from reforms in their country. Nearly all authors conclude that reforms have improved matters – but that mistakes have been made along the way, and further improvements can be made. The interdependency of the European rail system as a whole remains an important aspect.

3) Great Britain also has a competitive freight market with about nine competitors but, because all incumbent railway undertakings were privatised (and bought by two companies which are still in the market), the 100% share of new entrants is misleading.

Reform is seen as a necessary, but not a sufficient condition for the growth of the market share of rail. Several authors argue that organisational reforms in the rail sector were not placed within the context of an integrated transport policy, notably with regard to pricing between modes and infrastructure. Rather, it was simply assumed that rail reforms per se would increase market share. The result has been that ex-ante expectations of reforms – at least in terms of improving modal split - have often not materialised. Indeed, in Central and Eastern Europe, where liberalisation has not been accompanied by other reforms, both traffic levels and rail modal share have declined. Nevertheless, rail reform has brought demonstrable benefits where they took place in the right context. If planned and implemented well, rail reform can form an important element in revitalising the transport system in Europe.

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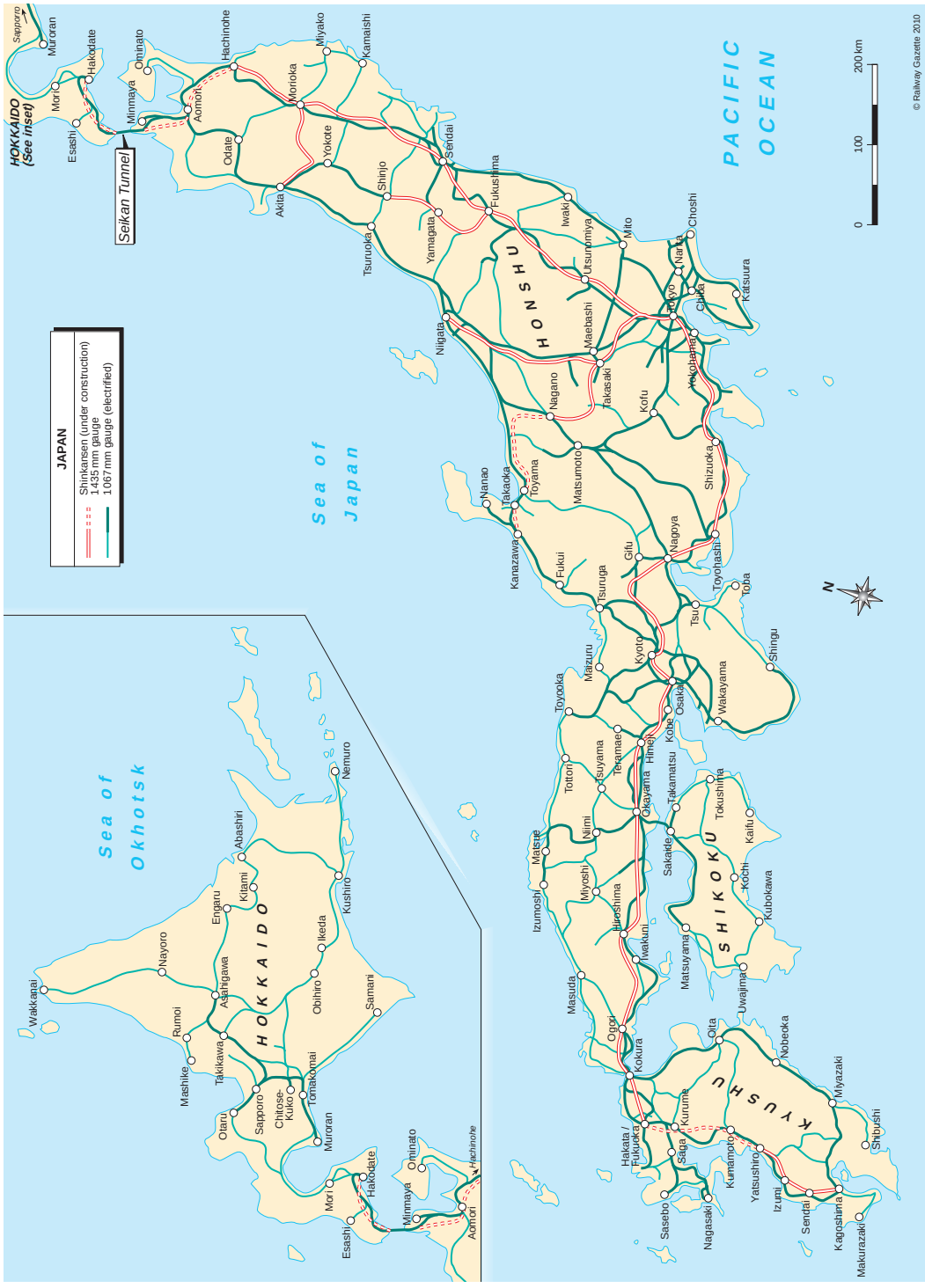
Part A
Outside the European Union



Source: Railway Gazette International

1 Japan

Yoshio Ishida

Area [a] (km²) 377,944

	2008		2008
Population on 1/1/2009 [a] (million)	127.69	Freight tkm [c] (billion)	22.3
GDP [a] (€ billion)	3,313.3	Passenger-km [c] (billion)	402.9
Length of line [b] (1000 km)	20.1	Modal share – passenger [c] (%) Modal share – freight [c] (%)	30.6 % 6.0 %

a) European Commission, Energy and Transport in Figures, Statistical Pocketbook 2010

b) The Economist, Pocket World in Figures 2010*), data for 2007
*) Official 2008 data was not yet available at the time of publication

c) OECD/ITF 2010, Trends in the Transport Sector 1970–2008

1.1 Introduction

In April 1987, the Japanese National Railways (JNR) was divided and privatized into one freight railway and six passenger railways, known as the JR Group, including JR East.

The unprecedented reforms, which included the breakup and subsequent privatization of JNR and were implemented prior to similar reforms in many other countries, are considered today to be of the most challenging but also one of the most successful policies in Japan to date. The success of the reforms can be unquestionably attributed to the careful construction and full deliberation of the policies, along with the complete support of the Japanese Government and Diet (parliament) at the time. Nonetheless, the concerted efforts of the employees of the seven new railway companies, from executives to front-line staff, must also be given full credit for their endeavors to increase revenue and decrease costs, under the firm resolution “to create new railways by ourselves”.

In this chapter, providing JR East as an example, I will introduce the background behind the success of the JNR reforms.

1.2 General description of railways in Japan

First, let me offer an overview of railways in Japan. There are 205 railway companies in Japan, of which seven are in the JR Group, including JR East. In the fiscal year 2008, the length of the

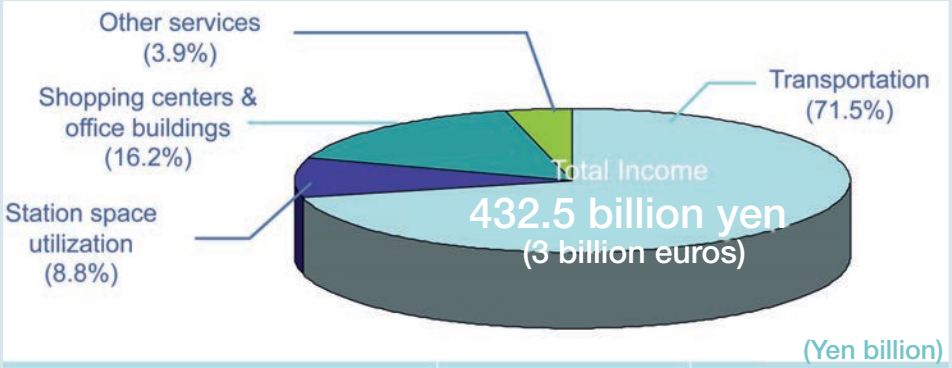
railway operating network totaled 27,333 km, with passenger kilometers totaling 405.6 billion. In contrast to Europe, railway companies in Japan manage not only train operations but also infrastructure construction, possession, maintenance and management (please refer to Figure 1).

FY 2007	Railways in Japan	JR Group
No. of operators	205 (JR Group, private railways, light rails, monorails, etc.)	7 (6 passenger railways, 1 freight railway)
Service km	27,333 km	20,000 km
No. of employees	203,326 (in railway business)	121,663 (in railway business)
Passenger-km unit: 100 million	4,056	2,552
Tonne-km unit: 100 million	233	231

Figure 1: Railways in Japan

Accounting for 27 % of the total railway network in Japan, JR East's network comprised 7,527 operating line-kilometers. In fiscal year 2008, JR East's operating revenue was 2.7 trillion yen (€17 billion[1]), with 127.6 billion passenger kilometers, and 16 million passengers using the network daily. JR East's railway business can be largely divided into Tokyo metropolitan transport, regional suburban and local transport, and intercity transport (high-speed railways), with these sectors contributing 67 %, 5 %, and 28 %, respectively, of JR East's FY2008 railway business revenue. Furthermore, the stations used by those 16 million daily passengers are JR East's largest asset, and, in order to increase revenue through the effective utilization of these assets, JR East operates various non-transport businesses such as restaurants and the sale of goods, food and beverages inside its stations. In addition to these operations, JR East's non-transport business includes real estate rentals and hotel operations in the spaces above and surrounding stations, as well as advertizing for commercial spaces in stations and on trains. On a consolidated basis, 71 % of the net operating income came from railway operations and 29 % from non-transport business (please refer to Figure 2).

[1] Exchange rate 2008 € 1 = 160 yen.



(Yen billion)

(Year ended March 31, 2009)	Operating Revenue	Operating Income
Total	2697.0	**432.6**
Transportation	1831.9	**309.2**
Station space utilization	415.0	**38.2**
Shopping centers & office buildings	222.6	**70.0**
Other services	227.4	**17.3**

Figure 2: Consolidated Accounting of JR East Group

With an anticipated further decline in the birth rate and in the working population in Japan, the expansion to businesses other than railways is JR East's fundamental management issue at present.

1.3 Causes of JNR's bankruptcy

In 1949, following World War II, Japanese National Railways (JNR) began its business as a "public corporation", holding the dominant share of the domestic transport market at the time. However, in the 1960s, with the rapid development of motorization, JNR's share in the domestic transport market suffered a sharp decline from 51 % of passenger-km in 1960 to 22 % in 1987 (please refer to Figure 3).

In addition, JNR failed to properly and promptly formulate measures to counter these changes in its environment. As a result, in 1964, in the midst of swiftly worsening financial conditions, JNR recorded a deficit of 30 billion yen, with further debt continuing to accumulate. Between the fiscal years 1980 and 1986, JNR continued to record a deficit in excess of one trillion yen every year. Though the Japanese Government provided JNR with yearly subsidies totaling 600 to 700 billion yen, the government did not have a system to transfer the deficit to its general accounts as was done in Europe, and compensated for the JNR deficit by lending money to JNR at an interest rate equivalent to that of government bonds. This method resulted in JNR's long-term debt reaching 25 trillion yen by the end of fiscal year 1986, and the virtual collapse of JNR.

In spite of being immersed in an era of fierce competition with other transport modes, the company was a public corporation, and its bankruptcy came as a result of important decision-making in management in areas including budgets, personnel affairs, and fares and charges, being entirely regulated by the central government with little autonomy in its management. The lack of autonomy resulted in a vagueness in managerial responsibilities, and this led to very poor labor-management relations.

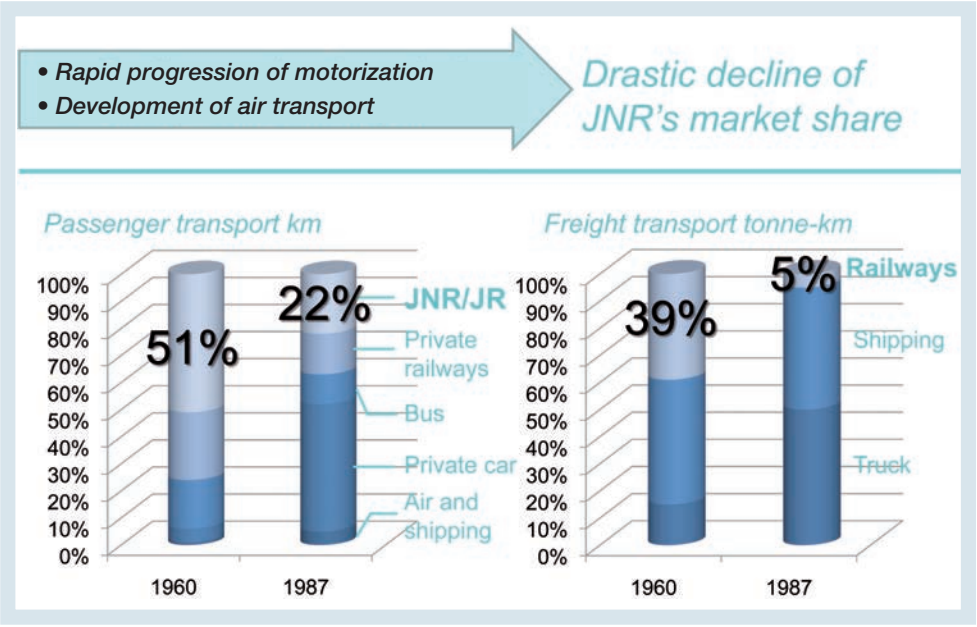


Figure 3: Market Share of Domestic Transport Modes

Additionally, JNR was a huge "nationwide monolithic organization" with more than 400,000 employees and a headquarters that largely made decisions in a uniform manner, even on issues which should have reflected regional characteristics. Furthermore, the consolidated management of revenues and expenditures led to interdependent relationships between regions and between business departments, thus further hampering the efficiency of JNR management.

Despite the shortcomings of the managerial system and a nationwide decrease in market share, railways still maintained the ability to transport people and goods in quantity at high speed and high frequency, and with punctuality and safety. There were still many markets left in Japan where railways could fully take advantage of their characteristics, since most of Japan's land is long and narrow, forming a natural corridor for transport.

In the fiscal year 1986 (compared with 1985), 14 major private railway companies in the Tokyo and Kansai (western Japan) metropolitan areas, which were deeply rooted in the management of both train operations and infrastructure, recorded a 3% increase in operating incomes. Those operating incomes amounted to 1.65 trillion yen, of which 48% was earned from businesses other than railways. These major private railway companies were significantly

successful through autonomous management deeply rooted in their business regions, and their diversification into businesses other than railways.

Taking these factors into consideration, JNR's future was shaped by resorting to these major private railways as a reference.

Based on the acknowledgement that the fundamental reasons for JNR's bankruptcy lay with the "public corporation system" and the "nationwide monolithic organization", it was concluded that – in order to revitalize JNR to once again completely fulfill the social roles of railways – the breakup and privatization of JNR was unavoidable.

1.4 Overview of the JNR reforms

(1) Utilizing the advantages of regional divisions and separation of train operation and infrastructure management

For passenger railways, the regional division system was introduced to provide transport services that reflected actual regional conditions, and addressed genuine passenger mobility flows and actual train operations. In addition, it was decided that railway operators would manage both train operations and infrastructure as a whole, in order to pursue efficient business operations and to clarify their responsibilities for end-users.

The freight railway was established as an independent company separate from the passenger railway companies, to be better equipped for meeting the severe competition in the logistics industry, and to clarify its responsibilities to its end-users. Since many freight movements are over long distances, the freight railway was set up as a single nationwide company, and it was also decided to separate freight train operations from infrastructure management. Under this structure, freight trains operate on passenger railway infrastructure, paying track usage fees to the passenger railway companies that are set to cover the additional costs resulting from freight operations (please refer to Figure 4).

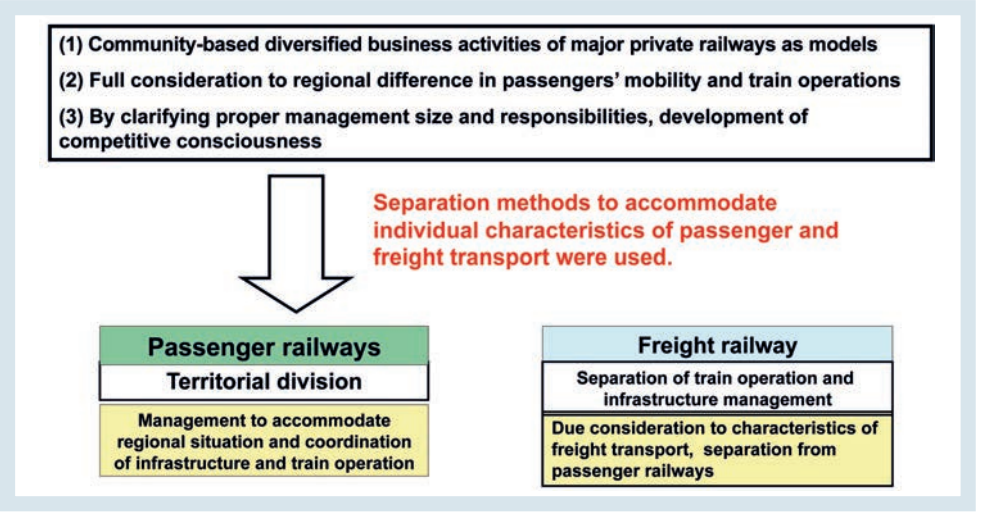


Figure 4: Patterns of Breakup and Privatization

Under JNR reforms, therefore, JNR was divided into six passenger railway companies and one freight railway company. These seven new companies were established as special public corporations with 100 % investment from JNR under special laws (including the JNR Reform Law and the JR Law). Each company started with predetermined assets, was responsible for predetermined liabilities and acquired a specified number of employees from JNR. However, since the three island companies of JR Hokkaido, JR Shikoku and JR Kyushu were expected to operate at a deficit, a "Management Stabilization Fund" of 1.3 trillion yen was established to compensate for their losses with the fund's investment profits (please refer to Figure 5).

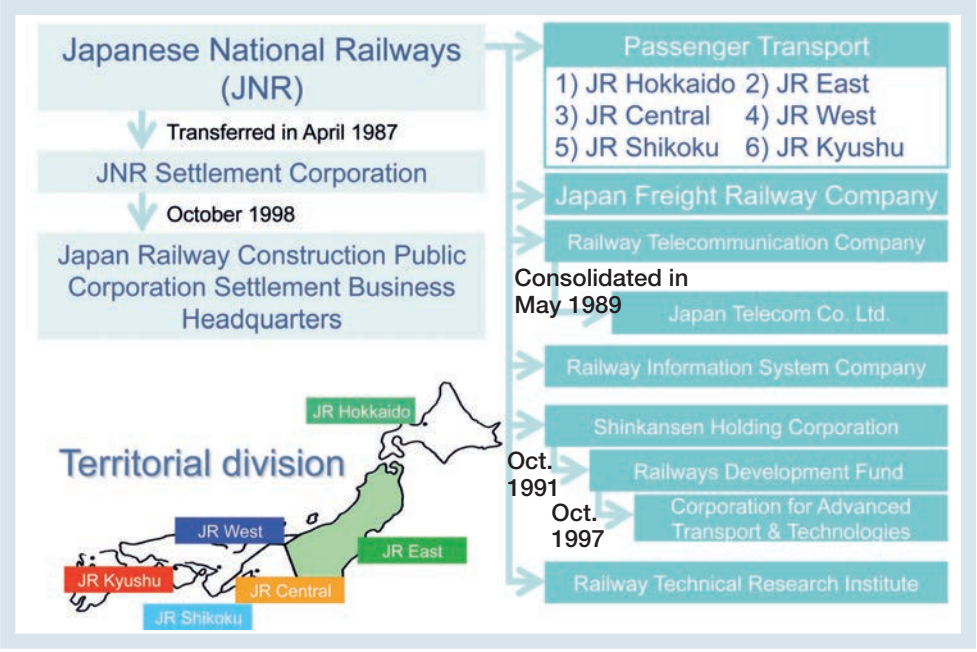


Figure 5: Schemes of JNR Reforms

As a result of the division of JNR into smaller sized companies, customers could make comparisons between these new companies and the major private railway companies, and this naturally created a competitive consciousness among the new companies. Furthermore, the elimination of external interference – mainly through decreased government involvement and the expansion of business fields to achieve diversified and flexible business activities – became the fundamental characteristics of the JNR reforms.

(2) Handling of long-term liabilities and measures for a surplus workforce

The handling of long-term debts and measures to address a surplus workforce were two of the major issues unavoidable in the rehabilitation of the failed company, and it is no exaggeration to say that the reforms introduced to JNR were the largest in the history of Japan to date, considering the amount of the long-term debts and the number of the surplus workforce. Thus, it could be said that, if we had failed in the handling of these two issues, the JNR reforms might never have been successful.

Over time and through many twists and turns, we carefully and steadily handled our long-term liabilities and measures for our surplus workforce. I will briefly explain the results of this management with respect to these two issues.

At the time of the JNR breakup and privatization, the number of long-term liabilities totaled 37.1 trillion yen, including JNR's long-term liabilities of 25 trillion yen and liabilities related to Shinkansen construction and pensions. For these liabilities, in order to reduce any possible public financial burdens to the bare minimum, it was decided that the freight railway company and the three passenger railway companies on Japan's main island, JR East, JR Central and JR West, would take over the liabilities according to their assumed amount of assets, with the total liabilities for these four companies amounting to 14.5 trillion yen.

The remaining assets and liabilities that the new companies did not assume from JNR were transferred to the JNR Settlement Corporation so that the corporation could endeavor to sell off the remaining assets and the shares of the new companies to pay back the remaining liabilities. It was also decided that the financial burden of any liabilities still remaining after exhausting all possible measures would be public financial burdens.

Furthermore, to offset the reductions in the workforce, the Japanese Government implemented nationwide employment measures to promote the reemployment of the surplus workforce within national and local governments, and even within private enterprises. As a result, 203,000 of the 277,000 JNR employees from the year prior to the JNR reforms were reemployed by the new companies, with the remaining changing jobs or retiring.

(3) Accomplishments of the JNR reforms: JR East as an example

JR East was established as a result of the JNR reforms, taking on 82,500 employees and 6.6 trillion yen in real liabilities from JNR. The company's top management, including myself, is firmly committed to never allow our employees to experience this kind of employment insecurity ever again. We have focused our attention on steadfastly managing the company by keeping our expectations realistic, and limiting our capital investment to within the range of depreciation costs. (As of April 2009, the company had 61,040 employees and, in March 2009, long-term liabilities were 3.5 trillion yen.)

Owing to solid management and the very stable prices of domestic commodities, JR East has at no time raised fares since its establishment in 1987, with the exception of adjustments resulting from the introduction of the consumption tax and subsequent increases to it. Yet, for the past 22 years, JR East has never fallen into the red, and has been successful in achieving a stable management performance that greatly exceeds its original forecast. As a result, JR East has been able to implement safety investments totaling more than two trillion yen over the past 22 years, and to further the expansion of its Shinkansen network and strengthen its transport capacity in metropolitan areas. Moreover, these investments and improvements have created a virtual cycle in bringing further increases in revenues and improvements to safety levels; for example, in a comparison with fiscal year 1987, the operating revenues of 2008 had increased by 26 %, while railway accidents had decreased by 70 %.

In addition, for the 21 years leading up to fiscal year 2007, the seven JR companies paid an annual average of approximately 280 billion yen to the Japanese Government and municipalities for corporate tax, fixed asset tax and other taxes. Before its breakup and

privatization, JNR was receiving a subsidy of approximately 600 billion yen annually (average of fiscal years 1977 to 1986). So, from the viewpoint of public finance, it can be seen that the JNR reforms were quite successful.

Furthermore, for the three JR companies on the main island, JR East, JR Central, and JR West, the JR Law was revised in December 2001, eliminating regulations requiring permission from the Minister of Land, Infrastructure, Transport and Tourism for important managerial issues. In achieving “full privatization”, JR East shares were all sold to private sectors by June 2002, with JR Central achieving its own “full privatization” by April 2006, and JR West by March 2004.

1.5 Conclusion

From the late 1970's, the JNR reforms had been major political and social issues in Japan. For this reason, before Japanese National Railways was finally divided and privatized in April 1987, many active discussions took place on a range of issues. However, with the sense of success that people feel for the actual management performance of these seven JR companies at present, almost all Japanese people have come to recognize that the JNR reforms were successful.

Of these seven JR companies, especially in the case of JR East, what exactly was the determining factor for the ultimate success?

I have already explained some of the factors for JR East’s success but, as a current member of JR East’s top executives, and someone who has gone through the breakup and privatization processes, looking back over the past 22 years, I believe that the largest factor for the success of the reforms was “the reform in employee consciousness”, including that of top management executives.

Immediately following the establishment of JR East in April 1987, in the midst of feelings of insecurity and complaint, our management personnel, including top management executives, visited field sites to solicit customers’ voices and employees’ opinions directly, in order to incorporate these voices and opinions into our management work. The railway business is based on teamwork, and there are many different kinds of work, some of the jobs stand out while others are less visible, regardless of the importance of their role. Management personnel made their utmost effort so that no workers would make light of his or her role and each and all of the roles of those workers would be fully accomplished.

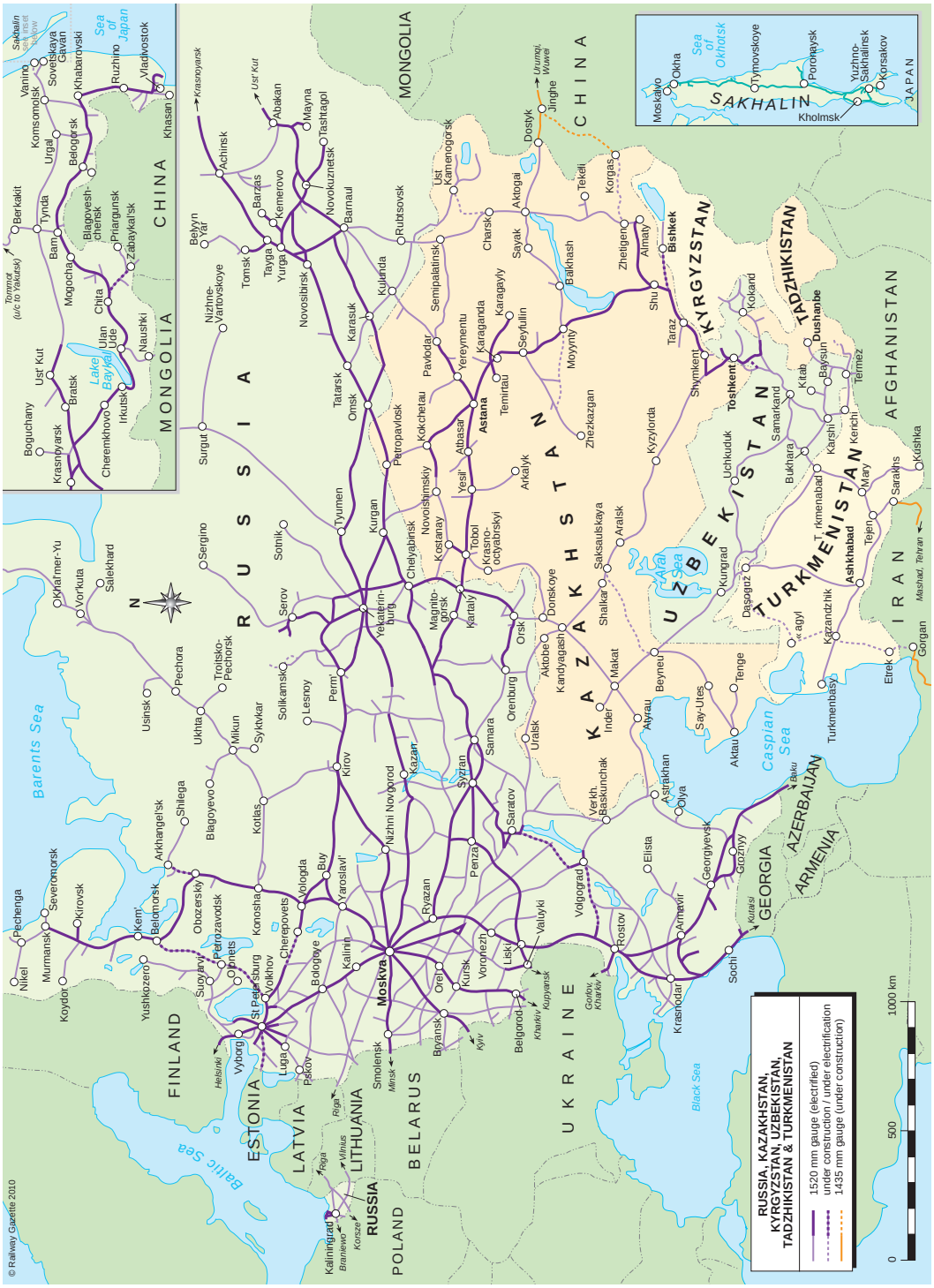
The affirmative attitudes of the management changed the consciousness of all railwaymen, who have high abilities by nature and high pride in themselves and their work. They started to use the fundamental power and spirit of railwaymen, which they acquired from their predecessors and seniors and developed by themselves in their work, believing that “We ourselves must find the path of the future.” and “ We cannot ever fail again.”

The outstanding management performance of JR East over the past 22 years could never have been achieved without these “changes in employee consciousness”.

These days, on a global basis, we see calls for the resurgence of railways, and in many places around the world railway reforms are taking place in accordance with the circumstances and

the needs of each individual region. However, we should never forget that the most important factors are the employees who are actually operating the railway business, and the change in the consciousness of these people.

After all, it is “people” who make the difference.



Source: Railway Gazette International

2 Russia

John Winner and Andrei Evdokimov

Area [a] (km²) 17,075,400

	2008		2008
Population on 1/1/2009 [a] (million)	141.96	Freight tkm [c] (billion)	2,116.2
GDP [a] (€ billion)	1,132.8	Passenger-km [c] (billion)	175.9
Length of line [b] (1000 km)	84.2	Modal share – passenger [c] (%) Modal share – freight [c] (%)	77.8 % [1] 60.3 %

a) European Commission, Energy and Transport in Figures, Statistical Pocketbook 2010

b) The Economist, Pocket World in Figures 2010*), data for 2007
*) Official 2008 data was not yet available at the time of publication

c) OECD/ITF 2010, Trends in the Transport Sector 1970–2008

1) Private cars not included in road data

2.1 Introduction

Russia has chosen a somewhat different course of railway reform to other countries. The national railway has been transformed into a state-owned enterprise (RZD), a not unusual step in rail reform. But, over the last ten years or so the railway has been subject to a different form of vertical separation to other countries: monopoly network services include not only tracks, dispatching and scheduling, but also locomotives and drivers. At the same time, both public and private sector companies have evolved to buy and "operate" railway rolling stock and to directly serve customers. This unusual form of vertical separation has been accompanied by the creation of several RZD subsidiaries who are operators (both passenger and freight), and a number of private sector companies who also operate freight and even some passenger services.

The reforms are not yet over. The Russian Government plans more extensive reforms, perhaps allowing operators to own and operate locomotives, allowing private operation of short-line railways, and perhaps allowing some operators to become carriers in their own right on the main network – providing their own drivers and locomotives. Indeed, this is already happening on a limited scale. Tariff reforms over the years have helped attract private capital to railway rolling stock and further tariff reforms are planned. This chapter provides a brief history of railway reforms in Russia and discusses reforms that are still in the planning stage. The focus is on freight as freight dominates the rail sector in Russia.

2.2 Russian Railways historical perspective

Before the dissolution of the Soviet Union, the Russian Railway was part of the railway system of the Soviet Union and managed by the Ministry of Railways. This rail system contained some 32 regional railways, 17 of which were in Russia. At its peak, the railway handled half of all the rail freight traffic in the world and a substantial amount of passenger traffic.[1)]

In 1992, the Russian Ministry of Railways (MPS) was formed from the original Soviet Railway Ministry, the 17 regional railways located in Russia and other rail-related enterprises and institutes in Russia.[2)] MPS was a cabinet level ministry with operating divisions, research units, employee health and benefit units, and some manufacturing capacities. MPS employed a staff of some 1.1 million.

The largest units within MPS were the 17 regional railway operating systems. These were regional operating railways, responsible for providing transport services. Each railway was headed by a Chief of the Railway and had a complete set of financial records including income statement and balance sheets. Rolling stock assets were carried on the books of the regional railways.[3)]

Through its research and testing units, MPS set technical standards on a wide variety of equipment and items used by regional railways and set safety standards for infrastructure, rolling stock, power distribution, and signaling and train control equipment. MPS also had a central management organization including accounting, engineering, audit and planning staff. New rolling stock had to meet MPS technical standards before it could be approved for use on any of the Russian railways.

When the Soviet Union collapsed, the economies of the newly independent states declined substantially. Declines in GDP and industrial production were reflected in railway freight and passenger traffic – Russian rail freight traffic plummeted. From a peak in 1988, rail freight traffic plunged 60 %, bottoming out in 1998 at about 40 % of its prior levels. Passenger traffic declined to about 55 % of late 1980 levels.

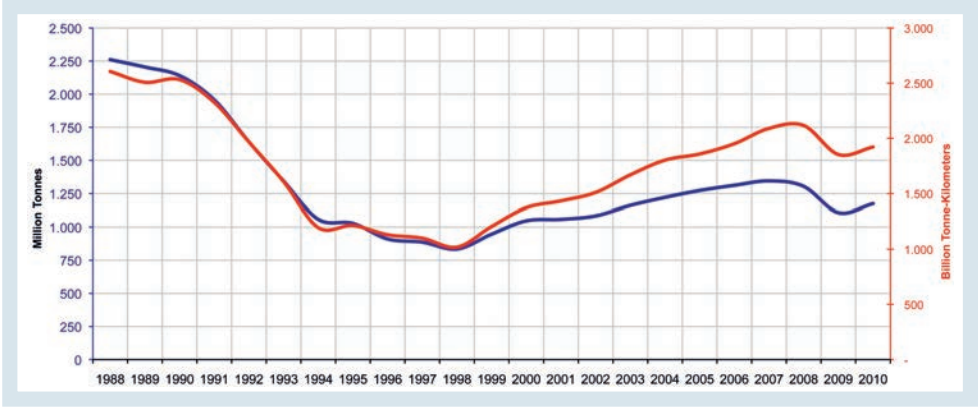


Figure 1: Evolution of Russian Rail Freight Traffic (1988-2010)

1) Railway Sector Survey of Russia, Belarus, Ukraine and Kazakhstan, EBRD January 1993

2) Including a number of rail design and research institutes and other rail-related units

3) These practices continue to this day. So far, most railway assets are on the books of regional railways.

The Soviet Railway was quite profitable and earned enough to fund renewal and new investment and provide significant funds to the government budget. However, all CIS railways experienced declining financial performance with the dramatic declines in volume and revenue. Declining revenue together with the uncertainty associated with the breakup of the Soviet Union reduced both the ability and the incentive of the railways to reinvest in assets. Moreover, all CIS railways had far more assets than needed to serve the much-reduced traffic base. For 20 years the railway had excess rolling stock, and network capacity and major investments were not needed.

Traffic began to grow again in the late 1990s. This powerful combination of factors – a dramatic decline in traffic and fortunes, a decade long investment moratorium, and then rapidly rising traffic – put significant strains on both railway and governmental institutions. Cross-subsidies for passenger and some freight commodities built into freight tariffs resulted in distortions and limited the ability of the railway to earn sufficient revenues to selffinance asset renewal. After some fifteen years of asset retirements without significant replacement, Russia's railway sector needed new investments; the railway and government needed new ways to finance these investments. These needs spurred reform in the rail sector.

Russia's rail sector is large by any measure. The main railway stretches across 8 time zones, covers 85,000 routekilometers and includes more than 122,000 kilometers of railway lines. Some 43,000 route-kilometers (~50 %) are electrified.[4] Russia's railway sector has nearly 1 million freight wagons and about 20,000 locomotives, including 2,700 passenger and 5,900 shunting locomotives. The passenger railway has 24,000 long-distance coaches and nearly 16,000 EMU sections.

2.3 Russian railway reform program

The Government of Russia is engaged in an ambitious restructuring of the railway sector. Several factors appear to be driving the reform program. The railway sector has huge investment needs in the short-term – these needs are too great to be funded entirely by RZD. As energy costs, inflation and traffic increased, cross-subsidies for loss-making services distorted transport costs. The government also recognized that private investors and competition drive cost reduction and service improvements, which will broadly benefit the economy. In the mid-1990s the government embarked on a serious reform program to solve mounting problems and introduce private investment and competition into the rail sector. The government-stated objectives for the reform program were:

– Stabilizing the quality and safety of rail services
– Preserving a single pan-Russian transport institution and ensuring economic development
– Ensuring interoperability of the rail transport system
– Reducing rail transport costs
– Meeting the growing demand for transport services

The reform program was divided into three phases although considerable restructuring took place in the preliminary phase before the formal program for reform was established. The reform process is summarized in the table and discussed in more detail below. The

4) The electrified lines carried 85% of all Russian rail traffic

restructuring process is now in its third phase with the introduction of competition. The government appears now to be embarking on a new phase of reform that will extend the reform process beyond the original scope.

Phase	Targeted time frame	Steps
Preliminary	Pre-2001	Shed social services Privatized some railway supply industries Encouraged private wagon ownership
Phase I	2001-2003	Established legal framework for reform
Phase II	2003-2006	Institutional & legal separation of lines of business
Phase III	2006-2010	Development of competition

2.3.1 Preliminary restructuring

The preliminary phases of rail sector reform saw a separation and privatization of some rail sector production entities. These included locomotive- and wagon-manufacturing facilities. MPS also divested many social facilities (for example, hospitals, schools, rest areas). These reforms started building the presence of private enterprises in the rail sector.

Some key legal steps occurred in the period before 2001. The Federal Law 153 on the Federal Railway Transport (25 August 1995) defined the legal basis for the organization of the sector and the legal relationships between the various entities. Presidential Edict No. 426 (1997) and Government Decree No. 448 (1998) articulated objectives that included increasing the efficiency of rail transport, reducing transport costs, and promoting competition in rail transport. The latter Decree also advocated providing access to rail infrastructure to users regardless of their form of ownership (for example, including private sector entities), ending cross-subsidies and funding public service requirements from government budgets, improving government supervision of tariff setting, and making financial flows in the rail sector more transparent.

2.3.2 Phase I: Legal & institutional framework, asset valuation

The first phase of the reforms involved establishing the legal framework and basic institutions needed for a more commercial and competitive rail sector. During the first phase of reform, key legislation was passed that defined the restructuring program and established the legal framework for it. Government Decree No. 384 (2001) “A Program for Structural Reform of Railway Transport” set out the restructuring program for the period 2001 to 2010 in three stages described above.

Based on this decree, the “Federal Law on Railway Transport in the Russian Federation” and a “Federal Charter of Railway Transport in the Russian Federation” came into force on 19 May, 2003. The law provides a new legal basis for the organization of the rail sector and a new definition of the relationships between owners of railway assets, shippers, and the government. The law divides the sector between infrastructure services and train operations and defines the legal relationships between them. The legislation provides for regulation of rail transport and calls for open access to the infrastructure for railway “carriers”.

An international auditing and accounting firm was hired to value the assets of the Ministry of Railways and to set up enterprise-based accounting structures that would lead to the formation of a state-owned railway enterprise. On this basis, MPS was separated into two major parts: one with regulatory functions, another with operating assets and responsibilities. The regulatory body, known as the Federal Railway Transport Agency (FRTA, or ROSZELDOR), retains regulatory authority over rail transport including the furthering of industry reforms, preparation of laws and the licensing of federal-level railway activities. FRTA is an agency of the Ministry of Transport. Railway infrastructure and rolling stock assets and operating responsibilities were transferred to a new open joint stock company, Russian Railways, a wholly government-owned enterprise RZD in 2003.

Russian Railways (RZD) was created to take over all the assets and operating responsibilities of the former Ministry of Railways and to own and manage the rail infrastructure, locomotives, repair functions and other areas of the rail system.[5] Separate accounting and management were established for each business unit within RZD, notably infrastructure, freight, and passenger services. Further, independent freight operating companies were allowed to operate on RZD infrastructure using their own wagons.

As a part of the reform process, two private rail sector business models grew quite rapidly. One is a rail operator – a kind of freight forwarder with a wagon fleet. Operators arrange loading and unloading services, and handle rail logistics services, most commonly using wagons they own or control (initially, many operators leased RZD wagons). The activities of operators are made economic by two critical factors: a significant reduction in standard tariffs for private supply of wagons (either privately leased or owned)[6]; and improved wagon utilization. As the regulatory framework for rail activities evolved, a third critical factor emerged – charges by private rail operators were not regulated. Over the past few years, the number of operators and the volume of freight they handle have increased significantly.

The second business model concerns the formation of rolling stock leasing companies. While leasing companies have existed for some time in Russia, their role has been limited until recent years. A new Law on Leasing was introduced in 2002, which permitted private operators to finance new wagon acquisitions using the wagons as collateral and introducing accelerated depreciation. Over the past few years, tax law changes, economic growth, a growing shortage of suitable rolling stock, and the growing number of railway operators made the leasing business financially feasible. A significant enabling factor was the revised rail tariff with explicit and significant discounts for private rolling stock.

The Federal Law and Charter of Railway Transport define the business model and legal responsibilities for businesses providing rail sector services. RZD's railway infrastructure network is considered a natural monopoly and remains heavily regulated. The new law defines a Railway Carrier as a business entity that owns or leases wagons and locomotives, is licensed by the government, has a contract for infrastructure use with RZD, and has financial responsibility for cargo and passengers while they are moving on the rail system. According to the law, Russia's railway infrastructure is to be accessible to multiple railway carriers. Some 25 entities have registered as carriers. These initially included RZD's 17 regional railways and a number of private firms – mostly rail freight operators and equipment leasing companies.

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5) JSC Russian Railways. "Phase I 2001-2002." Available online at http://www.eng.rzd.ru/page.html?nav_id=36

6) A new Tariff 10-01 was introduced in August 2003 that specified the wagon component discount, typically about 15 %.

2.3.3 Phase II: Separation of functions

During the second phase of restructuring, a number of railway activities within RZD were separated into subsidiary companies, which may eventually be at least partially privatized. Over the past few years, RZD has been busy setting up various enterprises as called for in Phase II of the restructuring plan. For example, in 2006 RZD established a subsidiary enterprise, JSC TransContainer, to run its intermodal business. Assets transferred to TransContainer included 60,000 ISO containers, 24,000 fitted flat wagons, and intermodal facilities at 47 railway stations throughout Russia. TransContainer is the largest rail freight container operator in Russia and the second largest operator of rail-side container terminals (after RZD). TransContainer sold 15% of its shares in a public floatation in 2007. Sale of another 35% of shares is now planned for 2010. RZD also formed a joint enterprise with FESCO, called Russian Troika, to specialize in block container train services, primarily auto parts moving to automobile manufacturers. RailTransAuto was formed in 2006 as a joint venture with TransGroup (a private rail operator enterprise) to service auto manufacturers with specialized automobile-carrying flat wagons and loading and unloading terminals. Refservis was formed as a wholly owned RZD subsidiary to serve the refrigerated transport market. Furthermore, TransLes, a company specializing in wood products using specialized flat wagons for timber and lumber products, was also formed as a wholly owned RZD subsidiary.

In 2006 RZD formed a Rail Passenger Directorate. This directorate was designed to focus the management of long-distance passenger services as a business entity. It was intended that this unit would be converted into a subsidiary company of RZD in which a stake might be sold to private investors. Local passenger entities (divisions of RZD or subsidiaries in joint ventures with municipalities) are being created for local transport. RZD has made progress in obtaining support from federal and local governments as compensation for loss-making suburban services. Working with local governments, RZD has formed 16 suburban rail enterprises that are jointly owned and funded in part by local governments. RZD plans to extend this effort to over 32 other population centers over the next few years. In addition, several private long-distance passenger operators have been formed to provide specialized services mostly on the St Petersburg-Moscow line. As with rail freight operators, these passenger operators own and operate passenger coaches that are hauled by RZD locomotives and drivers. The rail passenger operators set their own prices, sell tickets and provide on-board and station staffing, and may invest in station facilities. Examples include the AeroExpress train services linking Moscow's airports to the center city and Moscow Metro.

2.3.4 Phase III: Development of competition

In Phase III of the reform process, the focus has been on increasing competition in the rail sector. These reforms have been implemented gradually over the past few years. Legal separation of the rail passenger business into a full joint-stock company as a subsidiary to RZD was originally scheduled to occur in 2006 but was postponed by presidential decision. Formation of a Long-Distance Rail Passenger Service as a separate RZD subsidiary took place on 1 April 2010. Passenger Services will operate over the RZD infrastructure as a licensed rail carrier. This separation may raise thorny issues of what the appropriate infrastructure tariffs should be for passenger service – fully allocated costs, marginal costs, or short- or long-term variable costs. Separation of long-haul passenger services has been a controversial change because it will expose the level of cross-subsidy from freight to passenger. The Long-Distance Passenger Service Company may operate just as another carrier but would likely require direct subsidies

to fund operations and capital expansion programs. This is likely to be politically unpopular, and experts have expressed some skepticism as to whether shares in the Long-Distance Passenger Service could be sold in the near future, indicating that, for the time being, cross-subsidies will continue to be needed from within the RZD corporate structure. It is not clear at this time how infrastructure tariffs are being set for the Long-Distance Passenger Services.

RZD established First Freight Company (FFC or PGK in Russian) in mid-2007. It was capitalized with about 200,000 special and general-purpose freight wagons. The company is authorized to issue up to 50% of its shares for public sale and an initial public offering of some portion of these shares is planned in 2010. First Freight is now the largest rail operator in Russia but must replace a large proportion of its aging fleet over the next decade. RZD announced plans to form the Second Freight Company (SFC, VGK in Russian) in May 2009. RZD plans to transfer some 217,000 wagons to the Second Freight Company and intends to sell some shares in SFC in an IPO. While the start-up of SFC has been planned for nearly a year, the economic crisis and set-up issues delayed formation of the company. RZD now expects SFC to start on 1 October 2010.

After the formation of First and Second Freight Companies, RZD will retain only some 30,000 wagons to support its internal operations, provide military- and defense-related services. The two RZD wagon operating companies will be the largest participants in the rail freight operator market controlling about 225,000 wagons each. Several hundred private freight operators control about 450,000 wagons. The largest private rail freight operators include Globaltrans, Gaspromtrans, TransOil, and Transgarant. Each of these control wagon fleets of between about 15,000 and 20,000 wagons.

2.3.5 Maintenance facilities

As rolling stock ownership shifts to private entities, RZD will have less need for repair and maintenance facilities for its own account, but the expanding private freight wagon market needs a competitive network of wagon repair facilities. RZD started to sell off freight wagon repair depots. In 2008 RZD held several auctions to sell 22 of its 120 freight wagon repair depots. As of June 2010, it has sold 18 depots, receiving an average of about US$10 million for each depot. Buyers have been new wagon repair entities or units of companies with large private wagon capacities. Conditions were associated with the depot sales – First Freight Company was not eligible to bid, the buyer had to promise to at least maintain the current wagon repair profile (types of wagons repaired, types of repairs offered, capacity), and to maintain current depot employment levels and skills for at least five years. RZD now plans to group its remaining 100 or so wagon repair depots into two units, set them up as competing subsidiaries and sell a partial interest in each company.

2.3.6 Limited competition and locomotive ownership

In the original Rail Sector Reform concept, rail competition was to be between licensed rail carrier companies that provide wagons and locomotives, arrange loading and unloading, and assume liability for cargo transported. RZD's infrastructure division was to provide access to infrastructure, electric power, and perhaps drivers for carrier-supplied trains. What has happened instead is that rail wagon operators have evolved. Rail wagon operators are not carriers – they do not assume liability for transported cargo or passengers and generally

do not own locomotives for use on the main lines. Private interest in rail carrier functions continues but development of private rail carriers has not occurred.

One reason that private rail carriers have not developed is that RZD has pushed to limit their formation and has worked to maintain its rail carrier monopoly in several ways. First, it has worked to broadly define the role of the infrastructure operator to include not only the provision of track, structures, signaling, dispatching and electrification infrastructure, but also the provision of locomotives and train crews. There is some justification for this approach at least in the short term. Provision of train crews and locomotives across the large geographic territory of Russia requires substantial institutional resources for training, housing, and testing drivers and locomotives to ensure they are safe and able to perform the required duties. Drivers must be trained to operate specific locomotives, and trained in the physical characteristics of the segments over which they will be responsible for operating trains. Complicating training issues, the Russian rail network uses a number of different types of locomotives (several models each of diesel-electric, 3-kVDC electric and 25-kVAC electric). Currently, only RZD has locomotive driver training capabilities. Procedures for training and licensing drivers outside of RZD have not yet been established.

RZD locomotive management practices are also an important consideration in how the sector is organized. Soviet-era locomotives required a great deal of maintenance and drivers are trained to perform many minor maintenance tasks. Locomotive depots are located at every driver change point and locomotives are taken off most freight trains and returned to their home depot so that the same drivers, mechanics and locomotive specialists are responsible for the maintenance condition of a locomotive throughout its life. While this practice has helped make sure that locomotives functioned properly when they were on trains, it results in very poor locomotive utilization. Continuation of these practices would make it difficult for private rail carrier companies to evolve.

RZD has also argued that a rail carrier should be a “common” carrier, able to provide universal service throughout the entire Russian network. This would require that private rail carriers establish pools of locomotives and field rosters of drivers trained for each network segment and for specific types of locomotives – a prohibitive requirement for smaller carriers. While RZD works closely with rail freight operators, and some operators have received carrier licenses, RZD is discouraging the emergence of independent carriers. No operators with carrier licenses have attempted to offer carrier services in the market place.

However, localized shortages of locomotive power emerged in the period to 2008. During these local shortages, some private rail operators with access to locomotives were able to use them to move block trains for their customers. This typically was a result of special arrangements between private rail operators and individual railway units within RZD. At least two rail freight operators, Globaltrans and TransOil provide locomotives for some of their block trains. But, at the present time, the provision of private locomotives is limited to special situations. The significant drop in traffic in the last 18 months has relieved some of the pressure on the locomotive fleet which led to this practice.

However, traffic recovery and continued aging of the RZD locomotive fleet will eventually bring the issue of private provision of locomotives to the fore again. Given RZD’s ambitious infrastructure capital investment program, some mechanism for rail operators to buy or finance locomotives is likely to arise within the next five years. There is already a precedent for private ownership and provision of locomotives. It is expected that rail freight operators will be able to

acquire and use more locomotives for their services, especially for block-train movements. We expect that these locomotives will operate from origin to destination or at least across several driver territories and will initially rely on RZD to provide licensed drivers.

The evolution of rail carriers is stalled until the details of how a multi-carrier system might work are defined (for example, extent of common carrier requirement, driver training and licensing, how priorities are set in the allocation of drivers, locomotives and train schedules).

2.4 Federal target program and the rail strategy

Further reforms to the Russian railway transport system and the structure of the industry will be determined by Russian government transport policy, RZD strategy, and the broad macroeconomic imperatives of the Russian national economy. In 2008 the Russian Government issued Decree № 377 "On Federal Target Program – Modernization of Russian transport system (2010-2015)". The new decree approves the "Federal Target Program" (The Program) which became operational in 2010. The Program addresses all transport modes in Russia and is a key document in the development of modal transport strategies. Subsequently, in 2008 the government issued Decree № 877 approving "The Strategy of Railway Transport Development in Russian Federation to 2030" (The Strategy). These two strategic documents, which passed almost unnoticed due to the World economic crisis, will shape the future of Russian Railways.

The Strategy aims to solve the following key issues:

- Renew the aging railway assets
- Overcome the Russian rail sector's underdeveloped technical and technological base, particularly concerning railway equipment and the use of advanced technology in the rail sector
- Reduce geographical distortions in railway transport infrastructure by improving railway access to several regions and increasing railway throughput capacity
- Remove restrictions to the growing volume of transit traffic
- Improve the safety of railway transport
- Attract new investments to the sector.

Each of these specific targets have broader strategic targets: to ensure accessible and stable transport infrastructure; to ensure military and defense functions of the railways and protection of railway infrastructure from various threats including terrorist attacks; to integrate Russian Railways into international transport systems; to allow mobility of Russian labour to support the country's economic integration; to reduce transport costs by increasing railway efficiency; to increase the quality and safety of railway services using world's best practices; to improve investment attractiveness of the industry; and to ensure a favourable solution of environmental issues.

One of the major principles of the Strategy is the development of a more optimal combination of government regulation and market self-regulating mechanisms. The Strategy stresses that all the aims mentioned above can be reached only by using both government (including federal, regional and local governmental units) and private resources (also through Public Private Partnerships).

Though the Russian railways were built mainly in Soviet times when they handled 20% more traffic than the peak pre-crisis level of 2008, the Strategy stresses that 8,300 km of rail lines (9.7% of total length of Russian main rail lines and 30% of main rail routes), which serve 80% of the country's total freight rail traffic, are bottlenecks which must be relieved to achieve the targets of the Strategy.

The Strategy describes six categories of rail lines:

1. Strategic lines which are aimed at the transport integrity of the country
2. Socially important rail lines for passenger services in various regions
3. Freight-generating lines that serve new mineral deposits and development of new industrial zones
4. Technological lines to optimize the railway network and allow economic interactions between regions
5. High-speed lines to transport passengers at 350 km/h speed
6. Modernized existing lines to meet the growing traffic and high-speed passenger service.

The Russian Government will participate in the implementation of the Strategy by providing financing within long-term target programs from the federal budget. The government will also provide financing from federal budget for investment projects on a PPP basis. The Strategy also calls for the addition of an investment component to the freight tariffs charged by RZD. It also calls for special tariffs on specific new rail lines to guarantee the return on investment on these lines. The Strategy also allows for other forms of government support according to Russian legislation – for example, the construction of high-speed lines and implementation of new financing mechanisms based on PPP structures.

By allowing the investment component to be included in the freight tariffs, RZD plans to collect additional 1,000 billion rubles in revenue (or, about €25 billion) by 2015. Out of 29 strategic railway projects to be carried out between 2010 and 2015, 13 projects will be fully or partially financed from the proceeds from the investment component to rail freight tariffs. One of these projects is the dedicated high-speed passenger line between Moscow and St. Petersburg. There is still debate about the implementation of the construction tariff and whether it will be applied to the infrastructure component, or to the overall tariff as a whole. Should the investment component be added it would represent about a 20% increase to the existing tariff.

RZD future profits will be used first of all to implement the Strategy. Out of the six types of rail lines mentioned above, only three types are considered by the Strategy to be potentially profitable, allowing RZD to earn a return (freight-generating lines, high-speed lines and modernized – higher axle loads – existing lines). New strategic lines, socially important lines and high-speed lines may not generate sufficient returns to cover the investments into these lines, so some means of compensating RZD for their construction must be developed.

2.5 Plans for future reforms

The Strategy intends to further enhance the evolving transparent system of economic relationships in railway transport, protect and support rail competition, ensure equal access to rail infrastructure, and further deregulate rail market segments still regulated by the government. Separation of carrier services and traction (locomotives) from the ownership of infrastructure will be considered at a later stage. The Strategy also calls for a review and

revision of freight rail tariffs, as well as implementation of other organizational and technological measures to allow more competition among rail market participants. The Strategy projects the largest operators created during the third Phase of the Rail Reform will expand their wagon fleets as well as acquire assets to become carriers themselves. All new carriers will get equal access rights to rail infrastructure and a new insurance system to cover carriers' risks and responsibilities will be introduced.

The Strategy calls for new freight tariffs to be differentiated on the basis of the quality of services, and divided into components by types of activities covered in the tariff. Finally, the Strategy calls for tariffs to be based on actual costs at levels sufficient to cover the investment needs.

Among numerous technical and technological goals, the Strategy emphasizes that, in the long-term (between 2016 and 2030), infrastructure will be strengthened so that freight wagons in Russia will have axle loads of 25–27 tonnes (and 30 tonnes/axle on special dedicated routes) compared to 23.5 now. Speed on main lines will be increased to 140 kph for freight and 160 kph for conventional passenger trains. The Strategy and the Program call for the development of new railway lines to serve economic growth in the far eastern part of the country as well as for investment in high-speed passenger services in the western part of the country.

2.6 Future investments

The Strategy sets out a very ambitious investment plan for the railways and this raises issues about how the investment programs might be financed. All freight wagons will be financed by either RZD subsidiaries or by private operators and owners. In the period 2010 to 2011, First Freight and TransContainer alone are planning to buy 33,000 new freight wagons.

Even so, RZD President Mr. Yakunin, after his meeting with Prime Minister Putin in February 2010, said that by 2015 RZD would need about 400 billion rubles (about €10 billion) from government to meet the goals as set by Rail Strategy. RZD, whose return on equity is currently only about 1 %, urgently needs additional financing to implement the Strategy – today, the company spends about one third of its depreciation to maintain and increase the throughput capacity of its existing network. Yakunin believes that two major mechanisms are needed to help the company to meet the aims of the Strategy – either additional equity investments from the government, or the introduction of an investment component into RZD tariffs (as in China).

Russian Prime Minister Putin suggested that RZD should use the proceeds from RZD subsidiaries' IPOs and from selling more shares in RZD subsidiaries (first, in First Freight and TransContainer) to cover RZD investment needs. RZD announced in February 2010 that it will sell shares in 30 subsidiaries by 2012. These include First Freight Company, TransContainer, and Refservice (RZD will retain control of each company after the share sale). RZD also plans to sell shares in repair facilities, including track maintenance subsidiaries. Total proceeds from the sale of shares are expected at 100 billion rubles (€2.5 billion) by 2012.

2.7 RZD's target model for rail industry structure

Together with consultants, RZD recently (2009/10) developed a Target Model of Freight Railway Transport in 2015. The paper has been discussed and approved by several Russian governmental institutions. The major objective of this Target Model is to build the argument for RZD to shape both the rail freight market and rail freight tariffs to meet its objectives described above in the Strategy.

RZD would like to change the structure of the rail industry. It considers that the RZD wagon fleet has not been on equal footing with the private wagon operators – the prices for RZD wagons are regulated and, with the current tariffs, investments in new wagons are not attractive. RZD therefore has no or little incentive to increase its wagon fleet. Under the existing tariff system, RZD is a public carrier and must provide services to any customer at fixed regulated prices. This leads to "cherry-picking" where private wagon operators select the most attractive, high-margin commodities and more efficient block-train routes, and they can select from all RZD traffic to develop efficient backhauls for their freely priced wagons. This leaves RZD with less attractive lower margin commodities and a higher proportion of wagon-load shipments. Private wagon operators can also select the most attractive routes. Russian Railways' average network costs vary between regions from 16 kopecks per tkm to 53 kopecks per tkm – whereas RZD must charge private wagon operators on the basis of average network costs. The RZD strategy has been to spin off all its wagon fleet and set up freight operator subsidiaries whose prices are unregulated.

RZD favours two nationwide operators (First Freight and Second Freight, both RZD subsidiaries) to maintain competition. These two large nationwide operators would serve most customers. RZD intends to restrict private freight operators to niche markets – specific commodities, specific routes or regions, specific types of shipments (block-trains only, or intermodal services only). RZD believes that large wagon operators will allow better wagon management and eventually achieve better performance. It also believes that large nationwide wagon operators would be able to attract financing to buy new wagons on better terms than smaller private freight operators.

RZD wishes to keep control over these two nationwide operators, but because the Russian Government's transport policy and strategy is to support and enhance competition in railway transport, and because of its other large investment plans, it cannot invest into these two wagon operators to renew and expand their fleets. RZD therefore plans to float these nationwide operators – up to 50 % of shares.

Within the next 5 to 10 years, the Russian rail industry will most likely consist of RZD – as the owner of rail infrastructure, two large nationwide operators (Freight One and Freight Two) and several smaller private wagon operators. Some of them may become carriers (first, local carriers, then they will gradually grow into national carriers). It is expected that many existing private freight operators will merge to gain scale. Some of these private operators may become carriers and take over and operate local private railways in Russia – these local lines would have their own tariffs and regulations.

The newly formed private carriers would first use their locomotives on the same routes they serve today with block trains (assuming that the route can be served by one or few locomotives to avoid complex locomotive and crew changes). Initially, they will presumably acquire diesel locomotives, which can be used on all lines, and then electric main line

locomotives. RZD will provide locomotive drivers for private trains and locomotives but some arrangements will have to be made for the licensing of private locomotives drivers as the reforms evolve.

Private wagon operators and carriers will provide more differentiated services – based on the time of delivery, advance notification (one day to several months), volumes carried, duration of contracts, and so on. The shorter the notice, the faster the delivery time, the higher the volume shipped and the shorter the contract – the more expensive service and charges will be. TransContainer has already started to differentiate its services along these lines.

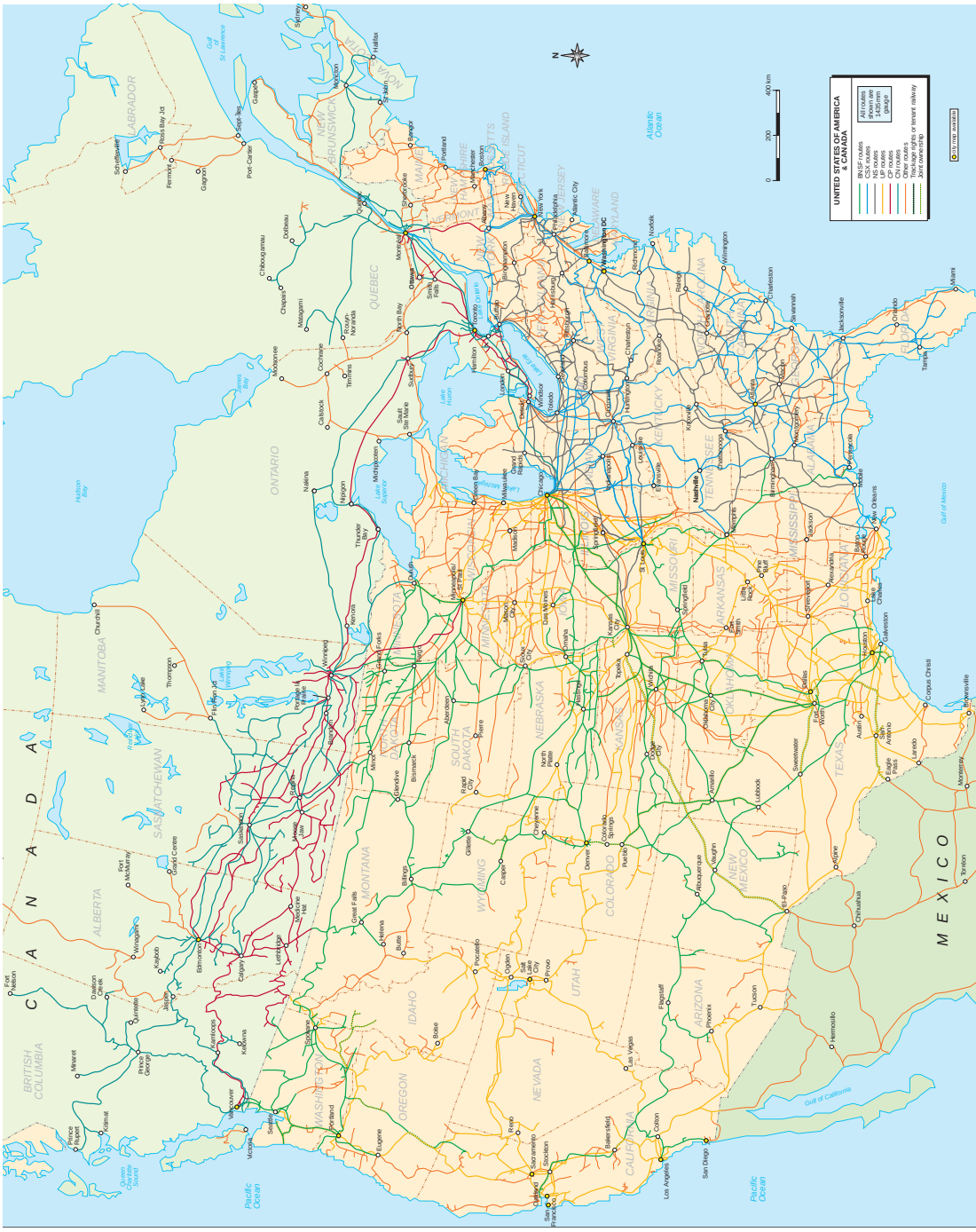
RZD believes that the larger the operator, the more universal types of wagons it will have and the bigger will be its share in the market of universal wagons (gondolas, universal flat wagons, covered box wagons). RZD expects that the smaller private operators will focus on specialized wagons – tank-wagons of all types, specialized container platforms, hoppers designed for specific commodities, flat wagons for wood products, auto carriers. While this may generally happen, the shortage of wagons in Russia and better service provided by private operators means that smaller operators will also be able to provide services with universal wagons.

RZD still plans to keep most of main line locomotives in Russia – on 30 March 2010 the Commission of Russian Government, lead by Russian First Vice-Prime Minister Mr. Shuvalov, made a decision that RZD should keep both the rail infrastructure and traction services. However, at the same meeting it was decided that private wagon operators will be able to acquire locomotives so they can gradually grow into carriers. To allow them to pay just for the infrastructure (without charges for wagons and locomotives), a new freight tariff will be developed and introduced.

2.8 Summary

The economic situation of RZD and of the Russian economy is likely to continue to favour liberalization of rail markets and private investment in railway rolling stock for many years. The reforms accomplished so far have attracted a number of private companies to the rail sector and now a substantial portion of the freight wagon fleet is privately financed and operated. These trends will continue and, over the next few years, the private locomotive fleet is likely to grow substantially. At this stage, it is difficult to predict how quickly private leasing companies and rail carriers will evolve.

RZD is expected to continue to provide infrastructure and infrastructure operations services over the existing 86,000 kilometer network and be responsible for new rail lines. Prices for infrastructure services will continue to be regulated and are expected to be more closely based on costs than in the past. RZD will provide the majority of drivers (and most locomotives) as a part of network services and this will impose some conditions on the types of locomotive technologies that operate over the network. This part of RZD's operations will increasingly look like a utility service and will be regulated in a similar way. Increasingly, RZD profit will be driven by its subsidiaries that operate in the non-regulated environment.



Source: Railway Gazette International

3 United States and Canada

Lou Thompson

3.1 Introduction and overview

Railway reform has been driven by economic and industrial development combined with stronger intermodal competition and restrictive government policies that tended to inhibit railway changes. Although the rail systems of North America adopted tailored approaches to the challenge reflecting their distinct history (especially a history of private ownership and operation) and geography, notably the long distances which suit freight on rail but not passenger on rail, their experience furnishes useful ideas on reform efforts elsewhere.

3.2 United States

3.2.1 The early years

Railroads began in the U.S. in 1825 and grew strongly through the end of the century. The system was privately built and owned, with very little direct government support. The lack of serious intermodal competition, overcapacity due to financial speculation and the *laissez faire* capitalism that prevailed late in the 19th century, created public suspicion and hostility toward railways that led to extensive and intrusive regulation of tariffs and services.

The rail system peaked in size in the 1920s and then began shrinking in response to rising competition from trucks, barges and private automobiles. The shrinkage paused in World War II. By the early 1950s, though, the downward trend resumed, caused by rapid highway construction (especially the Interstate Highway system that commenced in 1956), increases in private automobile ownership, and dramatic improvements in airline economics caused by the introduction of civilian jet aircraft beginning in the mid 1950s.

Area USA [a] (km^2) 9,629,091

	2008		2008
Population on 1/1/2009 [a] (million)	304.4	Freight tkm [c] (billion)	2,641.0
GDP [a] (€ billion)	9,818.7	Passenger-km [d] (billion)	9.9
Length of line [a] (1000 km)	226.7	Modal share – passenger [d] (%) Modal share – freight [d] (%)	0.2 % [1] 45.2 % [1]

[1] 2007 data only for intercity transport

[a] European Commission, Energy and Transport in Figures, Statistical Pocketbook 2010

[b] The Economist, Pocket World in Figures 2010*), data for 2007.
*) Official 2008 data was not yet available at the time of publication

[c] Association of American Railroads*), 2007 data.
*) Official 2008 data was not yet available at the time of publication

[d] OECD/ITF 2010, Trends in the Transport Sector 1970–2008, intercity only

Railways rapidly lost freight market share to trucks and barges, both of which were supported[1] by government, and lost passenger traffic to road and air (both also supported by government). The Interstate Commerce Commission still rooted in attitudes and legislation from years before, constrained rail tariffs to protect trucks and barges, restricted the ability of railways to offer contract rates to shippers, and prevented railways from abandoning unprofitable track and passenger services.

Between 1950 and 1970, political perceptions and special interests prevented policy and regulatory change while economic forces rapidly eroded the railway market position and financial strength. By 1970, the entire system had been financially weakened. Experts estimated that the freight railways were losing about US$470 million/year on passenger services – about half of the profits they were making on freight.[2] In addition, the quality of rail passenger service was declining and the proponents of passenger service believed that the freight railways would always neglect rail passenger traffic in favour of freight.

3.2.2 Passenger services

The initial reform response was the creation of Amtrak in 1971. Amtrak took over about half of the existing intercity service from the freight railways (most of the rest was terminated) and operates a passenger train system over the tracks of the freight railways, paying an access fee based on "avoidable cost". Though Amtrak is a commercial corporation, it receives around US$1 billion annually in federal operating and financial support along with minor amounts from states where it operates short-haul services. It owns the infrastructure and manages the higher-speed Northeast Corridor (NEC) Regional (210 km/hr) and Acela (250 km/hr in limited stretches) services between Washington and Boston.

The Amtrak system covers 40,000 km in total. Amtrak is a tenant on the freight network for about 39,000 km and operates on only about 1000 km of its own line in the NEC. Eight commuter agencies and three freight railways also operate as tenants on the NEC, paying access charges to Amtrak. Amtrak is a minority user on much of the NEC infrastructure, as well as being a distinct minority user on the freight railway infrastructure.

Amtrak operates 15 long-haul trains (overnight, sleepers and diners at distances >1200 km), often called the "National System", 24 short-haul trains (day trains) that operate mostly within one state or two-state regions, and the NEC higher-speed services.

NEC carries 37 percent of Amtrak's passengers and generates 47 percent of its revenue (because of higher fares on the NEC than on the rest of the network) as shown in Table 1. Long-haul traffic accounts for 15 percent of trips but only 25 percent of revenue despite the much higher average distance (995 km), essentially because of much lower average fares.

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1) Trucking infrastructure is supported because fuel and other taxes do not cover the highway capacity and operating costs imposed by truck use. Barge operators are subsidized both through construction and rehabilitation support from Government to water navigation and from direct Government provision, without user charges, of operating and maintenance expenditures.

2) See Thompson, 2003b for a more detailed discussion of rail passenger issues.

	Percent of passenger trips	Percent of passenger-kilometers	"Percent of total revenue **"	Avg trip (km)	Avg rev/ pass-km (2009 US$)
NEC	37	28	47	264	0.33
Short haul	48	28	28	204	0.19
Long haul	15	44	25	995	0.11
Total system	100	100	100	348	0.19

* For FY ending September 30, 2009

** Includes state support

Source: Amtrak, Monthly Performance Summary, September 2009

Table 1: Amtrak Profile in 2009*

Amtrak has cost the Federal Government nearly US$40 billion (2008$) in capital and operating support since it was established in 1971. Although it has a significant market share in NEC markets (particularly the New York City to Washington, DC section), its national market share is only about 0.1 percent of all passenger-km, and is less than 1 percent of public transport.

Amtrak has never stabilized institutionally or financially. Opponents criticize its high costs (over three times higher than airlines on a per passenger-km basis), while supporters are unhappy with its limited system and poor services. The result has been an over-promised but under-funded system, which has made it impossible for Amtrak to invest.

There have been a long series of restructuring proposals for Amtrak, none of which have succeeded because of a lack of agreement on Amtrak's mission and a consequent inability to provide adequate budget. Recently, however, there are reasons to believe that the U.S. approach to rail passenger service may be changing.

One initiative was the Passenger Rail Investment and Improvement Act of 2008 (PRIIA). Reflecting continuing disappointment with Amtrak's performance, PRIIA required a series of reports on service quality and cost. It also required development of a uniform approach to determining Amtrak's costs in providing state-supported services and requires states to provide full cost subsidy for such routes. States may also choose other operators in place of Amtrak. Finally, PRIIA authorized three new capital assistance programs: to public agencies for improved conventional rail corridor services; to public agencies or Amtrak for high-speed rail corridor development in the ten high-speed corridors[3] previously identified by the DOT; and to public agencies and Amtrak to relieve congestion on existing lines carrying intercity passenger services.

Next, FRA's "Vision for High-Speed Rail in America", a signature initiative of the Obama Administration, significantly shifted the federal position on high-speed rail passenger service by promoting "high-speed" rail in ten selected corridors (plus the NEC) in the coming decades. The Administration proposes a staged approach that would create: "HSR Express" with services at 150 mph or above on new, completely separated rights-of-way; "HSR Regional" services that would operate at speeds between 110 and 150 mph, mostly on existing rights-of-way, some of which (at the lower speeds) would be shared with freight services; "Emerging HSR" services operating at 90 to 110 mph to be developed in corridors with future potential,

[3] See FRA 2009, "Vision for High-Speed Rail in America" for discussion of the ten corridors and the NEC.

mostly with right-of-way shared with freight services; and, "Conventional Rail" consisting of improvements to existing services operating at 79 to 90 mph. A few states (California and Florida) may start with HSR Express systems in the near future; others will progress upward from conventional services.

"Vision for High-Speed Rail in America", is set out in Table 2.

MIDWEST			
State	Route	Amount ($ millions)	Description
Illinois	Chicago to St Louis	1,102	Raise speeds on part of the route to 110 mph
Wisconsin	Madison to Milwaukee	810	Establish 110 mph service from Madison to Milwaukee
Wisconsin	Milwaukee to Chicago	12	Improve capacity of the link and prepare for upgrade to 110 mph
Ohio	Cleveland to Columbus to Cincinnati "3C"	400	Refurbish and add capacity for 79 mph service (3C project)
Michigan	Detroit/Pontiac to Chicago	40	Renovate stations in Michigan
Illinois	Detroit/Pontiac to Chicago	133	Renovate stations in IL and improve track capacity
Indiana	Detroit/Pontiac to Chicago	71	Improved capacity
Total Midwest		**2,568**	
FLORIDA			
Florida	Tampa to Orlando (Phase one)	**1,250**	Construct 84 miles of new, HSR track (150 mph) from Orlando to Tampa. Phase two (Orlando to Miami) is not covered.
CALIFORNIA			
California	CA HSR (SF to Anaheim)	2,250	High-speed project from Anaheim to San Francisco
California	Surfliner	51	Improve capacity and allow for 110 mph on LA to San Diego
California	Oakland to Sacramento	23	Added capacity for capitols (no speed increase)
California	Corridors	20	Emission controls
Total California		**2,344**	
ALL OTHER			
All other	(13 states, 18 projects)	**1,762**	All other projects
TOTAL HSIPR grants		**7,924**	

Source: FRA, "Recovery Act High Speed Rail Awards, January 2010"

Table 2: High-Speed Intercity Passenger Rail (HSIPR) projects funded under ARRA

More important, HSR investment was a key component of the economic stimulus program (American Recovery and Reinvestment Act – ARRA, 2009) with US$7.92 billion in grants to HSR programs. ARRA funding was awarded to 24 States covering 32 projects. Of the total,

US$3.5 billion went to the two HSR Express projects in California and Florida. An additional US$1.9 billion went to two HSR Regional projects (Chicago to St. Louis and Madison to Milwaukee) intended to upgrade speeds to 110 mph. The remainder was spread over about 28 projects that will alleviate capacity problems and increase capacity at conventional speeds in a number of markets.

This is the first time a U.S. Administration has explicitly supported an expansion of intercity rail passenger services with significant funding as well as policy change. Interestingly, the "Vision" and the ARRA funding programs do not deal explicitly with the future role of Amtrak, especially in the separated, higher-speed corridors. Both PRIIA and the ARRA funding, at least implicitly, open the door for private operators to compete with Amtrak for contracts to operate services on the new or improved lines, and many states have indicated an interest in such competition.

3.2.3 Freight services

The creation of Amtrak, though helpful, did not resolve the U.S. freight rail crisis. Much of the rail system in the Northeast went bankrupt in the early 1970s with the collapse of the Penn Central and five smaller freight companies. Two Midwestern rail companies also went bankrupt, threatening to spread the weakness from the Northeast to the rest of the nation. Even the non-bankrupt railroads suffered from unbalanced financing and restrictive regulation, posing a real risk of loss of vital freight rail services.

The first response in the 1970s was the merger and nationalization of the six eastern bankrupt railroads into a new company, Conrail, owned by the Federal Government. An independent agency, (the U.S. Railway Association – USRA), was created to develop a restructuring plan for Conrail, and to oversee progress in meeting that plan. Although Conrail did recover somewhat, it did not become profitable, even after a federal investment of around US$8 billion in rehabilitation. The Administration eventually concluded that broader changes, especially relaxed regulation, would be needed if Conrail were to survive. At the same time, major U.S. freight shippers and the academic community had concluded that all of U.S. transport regulation needed changing. As a result, between 1979 and 1982, airlines, railways and trucking were all deregulated.

Deregulation and a federally financed labour redundancy program made the reorganized eastern rail system (Conrail) profitable, and it was re-privatized in 1987 for US$1.9 billion, far below the US$8 billion cost of restructuring.[4] Subsequently, Conrail was purchased in 1997 (for US$20 billion) after a bidding war between two other eastern railroads (NS and CSX), which divided it between them.

Rail deregulation in 1981, the "Staggers Act," drastically reduced government intervention in freight railway tariffs and services. Railways were freed to set tariffs, subject only to limits on the abuse of market power.[5] Contract tariffs (previously illegal), in which railway and shipper voluntarily negotiate multi-year tariffs, volume commitments, and investments in equipment and facilities, are now common. Rail mergers remained under strict controls; even so, most

4) Beshers, 1989, pg iv.

5) Before the new regulator (the Surface Transportation Board – STB) can prescribe a tariff, it must show: that the railway has a market dominant position (difficult to show); that the railway is "revenue adequate" (its rate of return must equal or exceed its cost of capital); and that the rate in dispute exceeds 180 percent of its variable cost. Few tariff protests are successful.

merger applications have been approved, though often with conditions requiring some competing access in significant markets.

The impact of the reforms is set out in Table 3:

	1980	1985	1990	1995	2000	2005	2008	Ratio: 2008 to 1980
Return on shareholders' equity (%)	6.0	6.8	8.2	7.9	8.0	9.1	13.3	
Tonne-miles of road operated	178,629	160,737	133,189	125,072	120,597	120,565	119,383	0.67
Average employment	458,332	301,879	216,424	188,215	168,360	162,438	164,439	0.36
Revenue tonne-miles (000,000)	918,958	876,984	1,033,969	1,305,688	1,465,960	1,696,425	1,777,236	1.93
Revenue tonne-miles (const 2008 US$)	0.0699	0.0554	0.0412	0.0329	0.0285	0.0295	0.0345	0.49
Ton-miles per (000)								
Employee	2,005	2,905	4.778	6,937	8,707	10,444	10,808	5.39
Freight car	557	644	896	1,119	1,120	1,312	1,276	2.29
Locomotive	32,409	38,437	53,763	68,143	71,953	73,128	72,570	2.24
Miles of road operated	5,145	5,456	7,763	10,439	12,156	14,071	14,887	2.89

Source: U.S. STB, Statistics of Class I Railroads, various years, and Association of American Railroads, "Railroad Facts," 2009 edition, 1US short ton = 0.907 tonnes

Table 3: Profile of U.S. Class I Freight Railroad System

Developments between 1980 and 2008 were very positive. The most unexpected result of deregulation was the reduction in freight tariffs by more than 50 percent in real terms (constant 2008$), primarily because of cost reductions due to dramatic increases in productivity of both labour and investment, but also because of trucking deregulation which resulted in much stiffer competition from trucking companies. Rail labour productivity increased by 5.4 times, freight car productivity grew by 2.3 times, and locomotive productivity rose by 2.2 times. Rail freight traffic grew by 93 percent, while freight market share increased from 37 to 43 percent and stabilized at that level, while accident rates fell by over 80 percent. The railroads have returned to profitability and some carriers are earning their cost of capital in some years.

There are now seven Class I freight railroads (railroads with more than US$400 million in revenues). The two major western carriers (UP and BNSF[6]) are matched by two eastern carriers (CSX and NS), with many connecting points. There is one independent carrier (Kansas City Southern) operating mostly in the Midwest and South, with the remainder made up of the large Canadian Carriers (CN and CP) along with their U.S. subsidiaries.

[6] All of the stock of BNSF was bought in 2009 by Warren Buffet's Hathaway Corp, so BNSF is no longer a company listed on a stock exchange.

The U.S. freight railroads still face challenges. Traffic growth since deregulation has been accompanied by system shrinkage, so that traffic density (ton-miles/mile of line) has nearly tripled since 1980. As a result, future traffic growth could face congestion that may not be resolvable with the current level of cash generation. Merger savings have nearly played out, and the most recent mergers (Union Pacific/Southern Pacific and the Conrail takeover by Norfolk Southern and CSX) created traffic disruptions that took years to resolve reducing the likelihood of further major mergers.

The larger threat to the industry lies in political pressures to tighten regulation of tariffs. Between 1981 and 2003, average rail freight tariffs (US$/ton-mile) had fallen in current terms in every year. After 2003, strong economic growth in the U.S., combined with growing congestion on the freight network, created pressure for selective increases in freight tariffs in order to generate the earnings required to finance urgently needed capacity expansion. Even though average freight tariffs are only half their 1980 levels, many shippers brought pressure on the Congress to give the Surface Transportation Board more power to restrain ratemaking freedom. Despite a number of independent studies[7] showing that rail earnings are not excessive and that the freight rate structure is essentially in line with a reasonable application of Ramsey-Boiteaux pricing principles.[8] Congress may well decide to dismantle at least some ratemaking flexibility that the railroads now enjoy. This could have a deleterious impact on earnings and capital investment generation.

The privately owned and managed freight railroads pay for their own infrastructure. By contrast, trucking companies do not pay the full costs of their use of highways while barge lines pay essentially nothing for their use of waterways, leaving the unsubsidized railroads to compete at a disadvantage. Despite this imbalance, railroads have historically resisted public support for fear of the political interference likely to result.

3.2.4 U.S. Transport Policy Initiatives affecting both passenger and freight rail services

In the last few decades, traffic on the U.S. transport network has grown more rapidly than capacity, posing a threat of costly and disruptive congestion. Governments are realizing that simple additions to road capacity are not feasible for financial and social reasons. At the same time, growing awareness of the environmental impacts of transportation emissions has fostered a realization that there are social benefits from rail that cannot be realized solely from private, market-driven operation. As a result, the Obama Administration has issued the FRA's "Preliminary National Rail Plan" and the U.S. DOT's "Strategic Plan for FY 2010-2015." These new documents signal an explicit attempt to shift traffic from highway and air to rail, and indicate a willingness to use public funding to pay for the social (as opposed to purely financial) benefits generated by the ability of rail to improve land use, reduce congestion, reduce energy use and improve safety. If implemented, these new policies (and related funding) could signal a new and stronger role for rail in the U.S. passenger and freight networks.

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7) See, e.g., Christensen 2010, pg ii

8) These principles, often called “what the market will bear,” dictate that, for a given freight service, price deviation from marginal costs is inversely proportional to the elasticity of demand for that service.

3.3 Developments in Canada

Area Canada[a] (km²) 9,971,000

	2008		2008
Population on 1/1/2009[a] (million)	32.9	Freight tkm[a] (billion)	353.2
GDP[a] (€ billion)	950	Passenger-km[b] (billion)	1.5 e
Length of line[a] (1000 km)	57.0	Modal share – passenger[b] (%) Modal share – freight[b] (%)	0.3 % 50.4 %

e = estimate

a) The Economist, Pocket World in Figures 2010*), data for 2007.
*) Official 2008 data was not yet available at the time of publication

b) OECD/ITF 2010, Trends in the Transport Sector 1970–2008

A similar development took place in Canada with the privatization of the Canadian National Railroad (CN) in 1996. Canada had two rail freight carriers, the Canadian National (a government-owned Crown Corporation) and the private Canadian Pacific (CP). The CN was government-owned partly because it was required to serve the less profitable, remote areas in Canada and partly as a competitive yardstick for the CP. The CN had always lagged slightly behind the CP in productivity and traffic growth. In 1996, the Canadian Government sold its CN shares in a successful public offering. Since privatization, CN has passed the CP in profitability and productivity and is currently considered one of the best managed railroads in North America. Both CN and CP own railroads in the U.S. After the implementation of the North American Free Trade Agreement, the rail networks of the U.S. and Canada (and Mexico – see below) are thoroughly integrated.

VIA (a Canadian version of Amtrak) was created in 1979 in order to rid the freight companies of passenger responsibilities and deficits. VIA operates its system over CN tracks in a way similar to Amtrak. In 1989 the government pruned the VIA system almost in half, and traffic has been slowly growing since. Much like Amtrak, though, VIA continues to struggle to find a stable role. Outside the Toronto, Ottawa, Montreal conurbations, VIA's collection of long-haul touristic trains combined with very low density, unprofitable rural lines is open to question.

3.4 Conclusions

The U.S. and Canadian reforms were enormous in scale but the common solutions have worked well. These have been to:

- eliminate cross subsidies from freight to passenger by paying government support directly to Amtrak, VIA and the suburban commuter railways.
- enhance competition and improve service through deregulation of the entire transport sector; discipline rail freight market behaviour through intermodal competition, competition between parallel lines operated by integrated rail carriers, or by carefully delimited competitive access for multiple operators on the same tracks.

- leave rail freight operators and infrastructure in the private sector in order to keep rail and trucks on the same competitive basis.
- adopt a pragmatic and mixed approach, both for ownership and structure. The freight railways are privately owned and managed, with little public intervention. Amtrak and VIA, though operated as corporations, are owned and funded publicly. Most freight competition is intermodal, but parallel, integrated competition and trackage rights competition is also important in some of the main transport corridors.
- Increasingly, it is recognized that rail freight should not be viewed as a purely commercial activity because of the manifest benefits (congestion reduction, reduced emissions, improved energy efficiency, reduced accidents, etc.) that a better balance between rail and road can produce. Similarly, improved rail passenger service can reduce travel times while reducing highway congestion, improving energy efficiency and reducing accidents. The past government approach of "hands off" for freight and of limited support for passenger services will clearly need to change.
- Of particular relevance to Europe is the efficiency and competitiveness of the private sector in operating freight services while placing the burden of planning and funding social passenger services in the public sector. Infrastructure separation in the EU could create an opportunity for the same kind of operating separation, with freight provided by competing companies (both public and private) and passenger services provided either by franchised private entities or by state-owned enterprises subjected to private sector competitive forces.

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4 Latin America

Lou Thompson

4.1 Introduction and overview

When the 1990s began, all major railways in Latin America were state owned and state operated. All were hugely unprofitable, totally dilapidated, and had vastly too many employees.

Ten years later, all major freight railway and many passenger railways were either privatized or operated under concession. Much lost traffic was restored and financial burdens controlled. Concessioning, especially of passenger services, though positive, has not been a panacea. Instead, governments had to devise methods for their continuing involvement through regulation and modified financial contributions.

This chapter focuses on Argentina, Brazil, Mexico and Chile because of their size.[1)]
Table 1 lists the concessions in these countries.

Freight						
Argentina		**Start of concession**	**Km Line**	**Tonnes (000)**	**Tonne-km (000,000)**	**Staff**
	FEPSA	1992	2,560	3,820	1,624	897
	Ferrosur Roca	1994	2,650	5,519	2,072	799
	Nuevo Central Argentino	1993	3,254	8,273	3,937	1,316
	BAP (now ALL)	1994	3,000	3,862	2,912	1,325
	Mesopotamico (now ALL)	1994	2,100	1,209	689	500
	Belgrano	2000*	4,940	936	790	1,470
	Total		18,504	23,619	12,024	6,307
* Belgrano was never actually concessioned. It was, instead, transferred to the labour union.						
Brazil		**Start of concession**	**Km line**	**Tonnes (000)**	**Tonne-km (000,000)**	**Tonne-km (000,000)**
	Centro Atlantico (FCA)	1997	8,066	19,300	15,100	6,130
	Novoeste	1997	1,945	3,000	1,100	920
	Nordeste (CFN)	1999	4,207	1,600	900	2,159
	ALL (old FSA)	1998	7,304	25,700	16,400	5,445
	MRS	1997	1,674	119,800	55,600	4,242
	Tereza Christina	1998	164	3,000	200	246
	Ferroban	1999	1,989	6,500	4,300	1,024

1) Concessioning of railways has also taken place in three other countries in Latin America – Bolivia, Guatemala and Peru.

Brazil		Start of concession	Km line	Tonnes (000)	Tonne-km (000,000)	Tonne-km (000,000)
	EFVM Vitoria Minas**	1997	905	133,200	72,800	5,769
	EFC Carajas**	1997	892	103,700	87,500	7,151
	Ferronorte	2001	500	8,200	11,300	1,654
	Total		27,646	424,000	265,200	34,740
** Spun off from CVRD in 1997						

Mexico		Start of concession	Km line	Tonnes (000)	Tonne-km (000,000)	Staff
	TFM	1996	4,283	32,676	28,025	3,393
	Ferromex	1996	7,164	36,309	35,405	6,105
	Ferrosur	1998	1,479	16,278	6,402	2,000
	FCCM	1996	1,550	2.488	1,472	463
	TFVM	1998	297	1,447	42	1,000
	Total		14,773	89,198	71,346	12,961
Chile		**Start of concession**	**Km line used**	**Tonnes (000)**	**Tonne-km (000,000)**	**Staff**
	FEPASA	1995	1,722	8,027	1,576	580
	Transap	2001	250	2,032	292	na

Passenger

Argentina		Start of concession	Km line	Passengers (000)	Pass-km (000,000)	Staff
	Belgrano Norte (Ferrovias)	1995	54	46,024	778	1,325
	San Martin (Trainmet)*	1995	56	49,688	1,083	1,501
	Belgrano Sur (Trainmet)*	1995	66	11,452	219	1,236
	Roca (Trainmet)*	1995	261	125,715	1,961	4,387
	Mitre (TBA)	1996	186	73,540	1,316	2,300
	Sarmiento (TBA)	1996	184	118,091	2,645	1,800
	Urquiza (Metrovias)	1994	32	24,189	418	609
	Subte (Metrovias)	1994	56	285,344	1,141	3,991
	Total		895	734,043	9,562	17,149
* Now managed by Ferrovias/TBA/Metrovias consortium for benefit of government agency (UGOFE).						

Brazil		Start of concession	Km line	Passengers (000)	Pass-km (000,000)	Staff
	Supervia (old Flumitrens)	1998	225	128,304	3,365	2,077
	Oportrans (Metro Rio)	1998	37	154,012	1,540	2,000
	Total		270	282,316	4,418	4,077

Data for 2008 or latest available year.

Table 1: Major Latin American Rail Concessions

Source: Railway Gazette International

4.2 Argentina

Railways in Argentina were originally built by private investors. All the rail companies were nationalized after World War II and loosely combined into a state-owned enterprise, Ferrocarriles Argentinos (FA). By the early 1990s, FA was running deficits of around US$800 million annually and had essentially collapsed. The government selected concessioning, largely structured around the prior companies, as the only feasible approach.

The passenger concessions were exclusive, vertically integrated agreements to operate, maintain and rehabilitate the rolling stock and infrastructure. Concession periods were 10 years for the suburban concessions (extended to 24 years) and 20 years for the Subté (the Buenos Aires metro – extended to 30 years). Concessionaires were given the required tariff policy, a minimum level of service quantity (trains/hr) and quality, and a specified rehabilitation and investment program that they were allowed to program over time. Concessionaires were required to make their own demand forecasts.

Seven passenger concessions plus the Subté were initially awarded to four consortia. The outcome was positive, with an annual payment to government of over US$180 million, partly offsetting the government's capital obligation to be paid to the concessionaires of about US$1.5 billion.[2)]

The operating results through the year 2000 were positive, with passenger ridership levels reaching levels not seen for at least 20 years. The concessions were stable and commitments from both sides were met. Unfortunately, the country experienced an economic collapse in 2000, causing the government to default on its external debts and GDP to fall by 20 percent by the end of 2002. In reaction, the government limited tariff increases that would otherwise have been justified by inflation, and neglected its subsidy or capital support obligations. Demand collapsed through 2002 followed by a return to slow growth.

Though most of the concessions struggled through and growth has resumed, there was a change in the relationship between concessionaires and government from one in which at least some commercial behaviour and risk-taking by the concessionaires was possible, to one in which concessionaires transferred all risk to government.

The freight concessions were awarded for 30 years with a 10-year extension possible. Freight tariffs were essentially unregulated. The winning bid was evaluated using a vague and often conflicting "points" formula.

Freight traffic levels have tripled since concessioning. Although the economic collapse hurt the freight concessions, the related devaluation promoted grain exports on which most of the concessions are dependent.

Because of the vagueness of the award process, there have been conflicts between government and concessionaires. For example, the term of the concessions was 30 years, extendable for another 10 years. Unfortunately, the contracts limit the commencement of negotiations for extension to the last 5 years of the concession. The youngest freight concession is now 15 years old, and the 15 years remaining are not enough to justify long-

2) All conversions into U.S. dollars should be seen as approximate.

term investment. No decision will be made about extension for another 10 years and, even if the concession is then extended[3], 10 additional years would still not be long enough to support investment. As a result, investment is tightly constrained.

The government program of compensating employees for lost jobs was important. Putting freight and passenger concessions together, total employment in the Argentine concessions is around 23,000 versus roughly 90,000 before concessioning began.

4.3 Brazil

In 1957, the government nationalized 18 private regional and smaller railways, creating the national railway system (RFFSA). One railway system (FEPASA) remained under the control of the State of Sao Paulo. The subsequent experience with RFFSA and FEPASA mirrored other Latin American railway systems – overstaffing, under-maintenance and poor management in the face of emerging intermodal competition.

In 1984, the government created CBTU, which took responsibility for all suburban trains nationwide, separating them from RFFSA. Subsequently, the government broke CBTU into its constituent systems and transferred each of the systems to the local communities. The suburban system in Rio de Janeiro, "Flumitrens" was transferred in 1994 to the State of Rio de Janeiro. In addition to Flumitrens, the state had a metro system of about 35 km that was unreliable and poorly maintained.

Although Rio State received Flumitrens from CBTU with a promise of an initial infusion of federal support, the support never fully arrived and Flumitrens was unable to recover from its dilapidated state. As a result, Rio State decided that the only long-term solution would be to concession both the suburban and metro systems.

Rio State adopted a concessioning model in 1998 similar to that of Buenos Aires except that its constitution constrained it to devise an approach without continuing subsidies. The Metro was auctioned first, in a 20-year concession with conditions that permitted fare flexibility and required hiring only the labour force needed for efficient operations. The winning bidder offered cash payment of US$87.6 million with the remaining US$203 million paid in 240 equal monthly instalments. Flumitrens was then offered in a similar concession format. Bidders were given the proceeds from the Metro monthly payments so that they could factor the net present value into their bids. The winning offer was US$10.8 million in cash with the remainder (US$35 million) due over 25 years in equal monthly payments.

Passenger trips on the Flumitrens system, now called SuperVia, have slowly recovered but have only recently reached the levels experienced in the early 1990s. By contrast, MetroRio has experienced continually growing demand, partly due to the government-financed program of expansion of the system that was promised during the concessioning.

The RFFSA system was auctioned during 1997 and 1998 in 30-year, exclusive, vertically integrated concessions. Tariffs are very loosely regulated. The labour force was partly reduced (about 40 percent) by government. Concessionaires were given the right to reduce the force,

[3] The current government does not appear favorable to extension.

Source: Railway Gazette International

further using the government's protection package. Payment terms required that 30 percent of the bid payment was due in cash upon transfer, with the remainder paid in equal monthly instalments over the 30-year term of the concession.

Most of the concessions had multiple bids and sold for more than their minimum price. Total payments were more than US$1.7 billion. In 1999, the Government of Sao Paulo State separated its passenger services and transferred the freight back to the Federal Government for inclusion in the final stage of the RFFSA concessioning process.

Though the freight concessions have generally succeeded, a few have struggled largely due to light freight traffic. A major positive factor has been the labour reduction program. Immediately before the planning of the concessioning program, RFFSA and FEPASA employed about 70,000 people. The government negotiated a buyout program that reduced this number to about 50,000 when the concessions were awarded. Concessionaires have subsequently reduced this to about 37,000 using the previously agreed buyout provisions.

4.4 Mexico

The Mexican National Railway (FNM) had been overstaffed and under-maintained for many years to the point that, in the mid-1990s, the government chose fully commercial concessioning along the lines being developed in Argentina and Brazil.

The government decided to award 50-year, exclusive, vertically integrated concessions, with two exceptions; 1) on certain tracks, the concessionaire was required to offer access to a connecting concessionaire in order to generate competition in a few major markets; and 2) all of the tracks in the Mexico City area were established in a separate company to which each of the three connecting concessions were given 25-percent shares to ensure neutral access. The government retained a 25-percent share so that it could eventually establish rail commuter services on the lines within the Mexico City area without further negotiations.

The government did initiate a study of concessioning possibilities for suburban services, culminating in the award of a concession in August of 2005 for service on about 27 km of existing line. Service was initiated in June 2008. Initial indications are that demand has been disappointing, but it may well increase as experience is gained. Attempts to concession a second service failed due to lack of acceptable bids.

Freight concessioning encountered problems. On one concession, Ferromex, the initial bids were below the allowable minimum, and the concession had to be rebid. By contrast, the winning bid on the Northeast concession, TFM, was about US$1.4 billion, far above the allowable minimum of a little over US$500 million, raising fears of irrational exuberance.

Overall, freight demand response has been strong. This has been reinforced by the fact that TFM and Ferromex were invested in by U.S. railroads (KCS and UP) and have become significant beneficiaries of the increase in trade flowing from NAFTA. Ferrosur was initially stable, but has had problems in the last few years.

The initial fears that the price paid for the TFM concession was too high have proved unfounded. The parent company, KCS, acquired the remaining stock on schedule and has

Source: Railway Gazette International

merged TFM into the parent. Employment on the major freight concessions is now about 13,000 people whereas it was about 83,000 as late as 1990. A minor amount of the difference is due to the elimination of intercity passenger service, the remainder went to enormously improved labour productivity.

4.5 Chile

Faced with the same crisis as the other Latin American railways, Chile chose to adopt a vertically separated approach. In 1993, the government established a freight company (Fepasa) to manage freight operations south of Santiago.[4] In 1994, 51 percent of the Fepasa shares were sold to private investors, with government holding the remaining 49 percent. The 49-percent share was subsequently sold in 2007 to private investors and retirement funds.

The infrastructure south of Santiago was left in the hands of a state-owned enterprise, EFE, which also operated most of the passenger services. EFE operates the infrastructure on an open access basis.

The close connection between the infrastructure part of EFE and its passenger operations has come under close review because of EFE's overall poor financial performance. Recently, government decided that the accounts of EFE's infrastructure provision will be separated from its passenger operations and that the individual passenger operations will be further established as separate enterprises paying access charges to EFE.

Fepasa has been marginally profitable and, up until 2004, enjoyed slowly growing traffic, after which traffic stabilized. In 2001, a new private freight carrier, Transap, was created in response to a call by the state-owned copper mining company for competition on a contract to haul a large quantity of sulphuric acid. Transap made a better bid and won the contract in competition with Fepasa. Subsequently, Transap has grown through focused marketing for high volume, concentrated shipment of cellulose.

4.6 Conclusions

Figure 1 shows the trends in passenger traffic in Argentina and Brazil. In both cases, concessioning was followed by growth. Between 1995 (the year when most operations were concessioned) and 1999, traffic grew by nearly 50 percent in Argentina although it has not yet achieved this level of traffic since. In Brazil, traffic fell in the pre-concession period before 1998, but since then traffic has about doubled.

4) The railway north of Santiago was privatized.

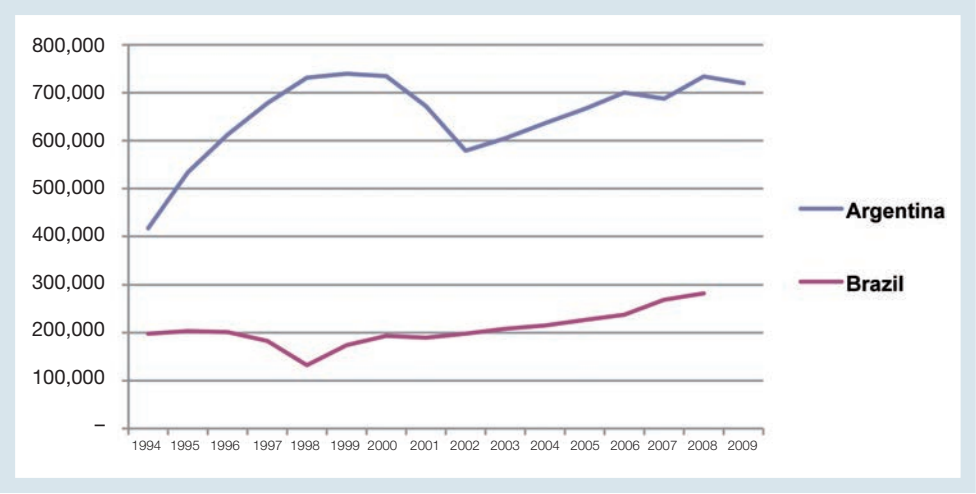

Figure 1: Passengers (000) carried by Latin American rail concessions

Figure 2 shows the trends in rail freight traffic in Brazil, Argentina and Mexico – in each case, traffic has grown and, in Brazil, it has more than doubled.

Latin American countries have now accumulated over 17 years of relatively successful experience in railway concessioning and privatization. Demand on the concessioned railways is up, and labour productivity and traffic density have grown steadily. With this said:

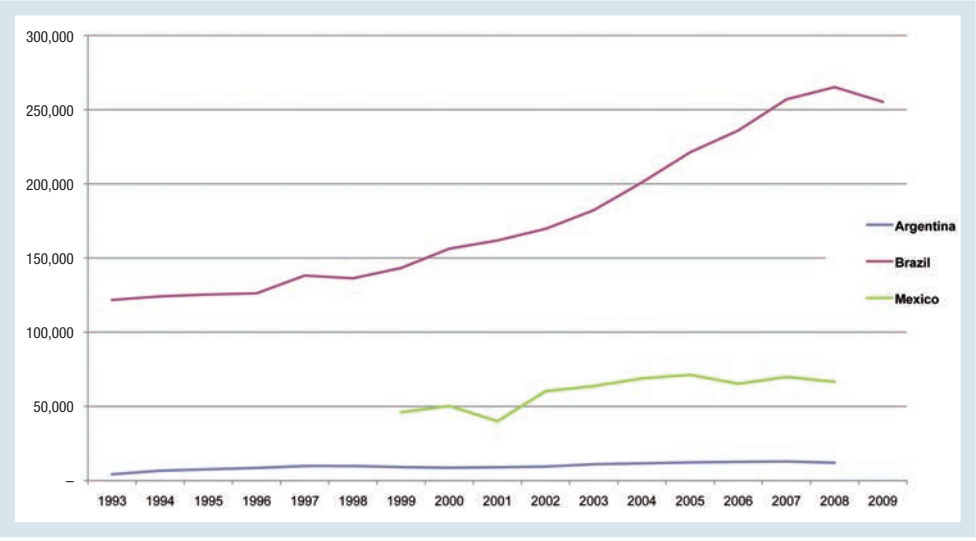

Figure 2: Tonne-km (million) carried by Latin American freight concessions

- The relationship between freight concessions and government has often been contentious, primarily because the nature of the concession process elicited unrealistic promises, especially with respect to future investment in infrastructure. In practice, the concession managers were heavily guided by short time horizons and hard-nosed business practices rather than (as governments might have hoped) by pursuit of public policy objectives.
- A particular challenge has been that concessionaires own very few assets against which to borrow money. This has aggravated the shortage of investment in long-lived assets.
- Even 30-year concessions are reaching the age at which very little investment in new rolling stock or infrastructure can be financed.
- Aside from deregulation of tariffs, a primary determinant of success for all Latin American concessions was the reduction of surplus labour.
- In general (Mexico may have been an exception), the initial objective of concessioning passenger services was the creation of vertically integrated enterprises with net cost (revenue and cost risk were left with the concessionaire), exclusive contracts, in which fares and minimum service were specified. Over time, though, all of the passenger concessions have evolved in the direction of gross cost arrangements (they take only cost risk since macroeconomic shocks limited the appetite and capability of the private sector to take revenue risk).
- The need for passenger support payments, especially for operating subsidy but also for capital, inherently requires a close relationship between government and concession. Despite the original hope for arm's-length transactions, payment of public funds eventually required more and more information and justification.
- The contrasting experience with freight concessioning in Latin America as compared with passenger concessioning adds another data point to the EU experience with gross cost as opposed to net cost concessioning. The freight concessions were quite successful as net cost concessions whereas the much more complex calculation of benefits and costs in passenger services drove the passenger concessions quite far in the direction of gross cost franchises. At the same time, Latin American experience as compared with North American experience raises the question of whether freight services might better simply be privatized, with allowances made for access under reasonable terms by infrastructure managers or public (gross-cost franchised) passenger operators.

Part B
Western Europe

Source: Railway Gazette International

1 Germany

Christian Kirchner

Area (km²) 357,104

	2008		2008
Population on 1/1/2009 (million)	82.0	Freight tkm (billion)	115.7
GDP (€ billion)	2,495.8	Passenger-km (billion)	81.8
Length of line (1000 km)	33.9	Modal share – passenger (%) Modal share – freight (%)	8.2 % 21.5 %

Source: Eurostat, Statistical Office of the European Union, 2010

1.1 Introduction

In 1994, two former state enterprises 'Deutsche Bundesbahn' and 'Deutsche Reichsbahn' were transformed into the business enterprise "Deutsche Bahn AG" (DB AG, German Railway Corporation), which according to a new article in the German constitution was to be organised as a joint stock corporation with a privatisation option [Kirchner, 2005]. At the same time, German rail transport markets were opened to competition. Non-discriminatory open access to the network infrastructure was provided for all German railway undertakings without restriction and for those from Member States of the European Union in accordance with Directive 91/440/EEC, which had been transformed into German law.

This chapter will cover rail market reforms in Germany since 2005. By that time, market reforms in Germany had reached a new stage. The chapter will look into the stage of competition and regulation of German rail transport markets in 2005 and in 2009, will then discuss future developments before turning to several controversial issues. The goal of the chapter is not just to provide an overview on reforms of German rail transport markets but to critically assess such reforms.

1.2 Competition and regulation of German rail transport markets in 2005

In 2005, rail freight transport accounted for 16.1 percent of overall freight transport (tonne-km), slightly up from 15.9 percent in 2003. The modal split for rail freight transport was

still especially affected by competition from road transport enjoying several competitive advantages (Kirchner et al, 2009, pp. 8–11). Among other effects, the successful integration of national road transport markets led to more flexibility, intensified competition and lower cost, whereas rail freight transport was hampered by national borders, a lack of interoperability and often monopolistic market structures. Despite the fact that the Second Railway Package was transformed into legislation in Germany in 2005, and liberalisation of the German rail freight market had already taken place in 1994, other national markets in Europe were less open, so that market integration of national rail freight markets could not yet be accomplished. It is only over long distances that rail freight transport enjoys a comparative advantage over road transport. A better modal split for rail freight transport thus depends not just on liberalisation of one national market but on opening and liberalisation of several neighbouring markets.

Rail passenger transport accounted for 8.9 percent of total passenger-km in 2005, compared to 7.1 percent in 1993 and 8.4 percent in 2003. The trend of the period 1993–2003 has continued due to raised standards of comfort and punctuality. Another positive factor was the regionalisation of rail passenger transport in Germany, provided by the Act of Regionalisation (Regionalisierungsgesetz) that brought a shift of organisational and financial responsibility from the Federal Government to the German States ("Länder") in 1996 [Kirchner, 2009, p. 87]. Financial transfers from the Federal Government to the states allowed improvement of rolling stock, which made rail traffic much more attractive for commuters.

Intramodal competition was characterised by market access of new competitors in both freight and passenger transport markets [Kirchner, 2009, pp. 89–91)]. Legal market entry barriers had been successfully abolished in Germany. In 2005, competitors of DB AG reached a market share in rail freight markets of 13.7 percent measured in tonne-kilometres, and in regional passenger transport markets a market share of 13.2 percent in terms of train-kilometres. They had been successful in competitive tenders in regional markets, often due to lower wage levels.

The market share of new entrants in long-distance passenger transport markets remained at a very low level, i.e. less than 1 percent. Legally, like other rail markets, this market was opened up on 1 January 1994. Every railway undertaking was free to get a licence in Germany and to offer long-distance rail passenger transport. But there were only few routes where competitors of DB AG were able to compete successfully. One of the reasons for this was the network effect that favours a railway undertaking able to offer passenger transport on different routes connected by a consolidated timetable covering regional and long-distance traffic.

In order to appraise the state of intramodal competition in German rail transport markets in 2005, it is not sufficient to focus on market shares. They do not reflect a true picture of competition in these markets. Market entry barriers are the decisive factor when it comes to competitive pressure on a railway undertaking with large market shares. Open access in both rail freight and passenger transport markets were based on provisions of the General Railway Act 1993 (Allgemeines Eisenbahngesetz, AEG), offering open access in all rail transport markets in Germany. Actual market entry barriers – administrative and information barriers, the train path allocation system, approval of rolling stock and conditions of access to infrastructure-related services – have been relatively low in Germany compared to other European rail transport markets (IBM/Kirchner, 2004). In that index, Germany merely ranks behind the United Kingdom and Sweden in terms of openness of rail transport markets.

In April 2005, the General Railway Act (Allgemeines Eisenbahngesetz, AEG) was comprehensively revised by transforming the Second European Railway Package into German

Law. The Federal Network Agency (Bundesnetzagentur – BNA) was given new scopes of responsibility in the field of railway regulation. Since 1 January 2006, the Agency has been in charge of monitoring rail competition and is responsible for ensuring non-discriminatory access to railway infrastructure. Since then, the BNA has shared responsibilities for monitoring German rail transport markets with the Federal Railway Authority (Eisenbahnbundesamt, EBA). EBA is the supervisory and authorising authority for 30 rail transport companies and for 5 infrastructure companies. It grants approvals and authorisations. It monitors the compliance with general terms and conditions outlined by law and regulation authorities. And EBA is responsible for domestic as well as foreign rail transport companies operating in Germany. Railways not owned by the state are subject to supervision by the Federal States, which may then delegate responsibilities to EBA. A majority of the states have made use of this option. Since 1994, EBA has issued numerous licences for new railroad companies.

For the purpose of implementing the aims of regulation, the Federal Network Agency BNA has effective procedures and instruments at its disposal including rights of information and investigation as well as the right to impose sanctions. The Agency's decisions are made by members of the department for railway regulation, which enjoys a high degree of independence from the Federal Ministry of Economics and Technology. Its tasks in the field of railway regulation derive primarily from the General Railway Act (AEG), supplemented by the Ordinance on Railway Infrastructure Usage Regulation (Eisenbahninfrastruktur-Benutzungsverordnung, EIBV). The Agency monitors compliance with the rules governing access to the railway network. Unlike the telecommunications and postal markets, regulation is symmetric in the field of railway infrastructure, i.e. all public railway infrastructure operators are subject to BNA regulation, irrespective of their market position.

1.3 Competition and regulation of German rail transport markets in 2009

In 2009, the modal split for rail freight transport reached 16.3 percent, slightly higher than in 2005 but down from the 2008 modal split of 17.3 percent. The international economic crisis, which had its peak in 2009, affected rail freight transport more severely than road transport, due to the different structure of freight transported on the two modes.

The modal split in rail passenger transport reached 9.9 percent in 2009, up from 8.9 percent in 2005, but slightly down from 10.0 percent in 2008. This gain reflects the improvement in quality and comfort of rail passenger traffic in Germany as being perceived by passengers in both long-distance and regional traffic.

Intramodal competition expanded more rapidly in the period 2005–09. In regional passenger transport, competitors of DB AG gained a market share of 20.3 percent. Again, they were successful in many competitive tenders of regional markets, often due to a lower wage level. However, there are subsidiaries of DB AG that are able to compete on the basis of lower wages as well. Competitors of DB AG are not necessarily small- or medium-sized German railway undertakings. Often they are subsidiaries of national railway undertakings from other Member States of the European Union (like France, the Netherlands and Denmark). Other railway undertakings are subsidiaries of large private companies, like Veolia. On long-distance passenger transport markets, subsidiaries of these companies had announced their market entry on lucrative routes such as Berlin–Hamburg, Hamburg–Hannover–Frankfurt/Main–Stuttgart, Hamburg–Cologne, Cologne–Salzburg, Frankfurt–Strasbourg. But they have since pulled out despite the fact that the respective German market is legally fully open.

According to the Rail Liberalisation Index of 2007, Germany again ranks among the top three of open rail transport markets.

Regulation of rail transport markets in Europe has changed in the period 2005–09. As from 1 January 2007, freight transport markets have opened all over Europe. This means that freight trains may now, for instance, run from Portugal or Spain, via France to Germany. The comparative advantage of long distances in rail freight transport compared to road transport can now be utilized. This should not only increase the modal split of rail transport but may also lead to more intramodal competition. If, for instance, both DB AG and SNCF serve long-distance routes in Europe, they will automatically enter the neighbouring national market.

Liberalisation of cross-border rail passenger transport has made an important yet insufficient step forward, after such cross-border transport was made possible as of 1 January 2010. The Third Railway Package provides for access rights for international cross-border passenger traffic. Germany has transformed the respective directives with the fourth amendment to the General Railway Act without seeking recourse in the possibility of restricting cabotage and protecting parallel national public rail services which are subsidised. Other Member States of the European Union have made use of what they consider to be legally possible restrictions under the EU package, thus affecting the profitability of cross-border passenger rail services for foreign competitors. At present, it is unclear whether or not these Member States have gone beyond what is legally permitted.

The result of this asymmetric regulation will be an open German market with railway undertakings from other Member States of the European Union being able to compete with German railway undertakings on German routes, whereas German railway undertakings are, in practice, prevented from offering railway services in such Member States that are restricting cross-border passenger traffic. There will be an opportunity to further engage in joint ventures between German and foreign railway undertakings, which will then be sharing services on international routes. But such joint ventures – which were quite common in the past – are now problematic under the new regulatory framework as they might be considered to be restrictive business practices, violating competition law. It is open to question what kind of incentive a foreign railway undertaking has to form a joint venture with a German railway undertaking when it is able to serve German routes without co-operating. Focusing on the German market (without taking the European perspective into account) means that competition on German long-distance passenger transport markets will be intensified; whereas German competitors are weakened by not being able to offer cross-border services to their traditional customers. Thus, asymmetric regulation of European railway markets is leading to distorted competition.

One further factor to be taken into account when analysing competition on German rail transport markets is public or private ownership of railway undertakings active in Germany. Access to capital markets with the option to raise equity is important for railway undertakings engaged in innovation and expansion. As already mentioned, there are railway undertakings active on state-owned German markets, e.g. DB AG and subsidiaries of foreign state-owned companies. On the other hand, subsidiaries of private railway undertakings are also serving the German market. Access to capital markets means not only the ability to raise equity but also to be less dependent on funds from the public treasury.

The German constitution requires the railway undertakings of the Federal Government to be run as business enterprises. There is no longer a mix of profit orientation and obligation

to provide public services. If DB AG is to be run as a business enterprise and the Federal Government holds 100 percent of the capital it is not easy to clearly separate the function of representatives of the Federal Government as members of the supervisory board of the company and their function as members of government or parliament who are pursuing political goals. As members of the supervisory board they are required by law to serve the best interests of the business enterprise. As political actors they are dedicated to 'common public interest'. The common public interest may easily be interpreted in such a manner that the railway undertaking should provide services at prices a private business enterprise would not provide. This concealed conflict of interest is problematic for an undertaking active on competitive markets where other competitors are not exposed to political interest. It is in the light of this potential conflict that the German constitution has opened the privatisation option but has limited privatisation of the rail infrastructure. Here private investors may not acquire a majority or a 50 percent stake. The impact of privatisation – even with private investors acquiring a minority stake – would be to reduce or abolish the conflict of interests mentioned. With private investment it is evident that management and all members of the supervisory body have to serve the interests of the business enterprise and not political goals.

After a long and controversial debate, a political solution for a partial privatisation of DB AG – excluding the infrastructure company – has been found. Under the roof of a holding company, one subsidiary would be in charge of rail freight transport, long-distance, regional and urban passenger transport, logistics and services. Private investors would be offered 24.9 percent of this company, whereas the subsidiaries in charge of infrastructure would remain 100 percent state-owned. This partial privatisation would preserve the character of DB AG as an integrated railway company. The discussion on the interface between infrastructure and operations [Kirchner, 2009, pp. 91–92] has finally led to a compromise. The integrated railway undertaking would not be partially privatised but only that part of the company not in charge of infrastructure nevertheless, maintaining the holding structure. The initial public offering (IPO) was to take place in October 2008. Due to the international financial market crisis reaching its peak in that month, the IPO was postponed because recovery is needed to obtain a fair price for the minotiry stake to be sold.

1.4 Future developments

Since 2009, competition in German transport markets has been affected by a broad economic recovery. This means that capacities for rail freight are better used and that price pressure on rail freight tariffs is easing. This will eventually lead to a higher intermodal share for rail freight transport compared to road transport. Passenger transport has been less affected by the economic crisis. Thus the present recovery might lead to a modest expansion of rail passenger traffic. However, with the expected liberalisation of markets for long-distance coach transport, this prediction is not certain.

Predicting future developments for intramodal competition in German rail transport markets is not an easy task. There are many factors to be taken into account, not all of them leading into the same direction. As far as rail freight transport is concerned, more competition from more competitors can be expected. One major factor is the liberalisation of European rail freight markets as from 1 January 2007. The effects of that liberalisation have been mitigated by the serious international economic crisis. With an ongoing recovery and a comparative advantage of rail freight transport vis-à-vis road transport over long distances, rail will become attractive for more railway undertakings and for freight forwarding companies able to establish railway

undertakings as subsidiaries. This means continued price pressure in the foreseeable future with shrinking margins as one consequence. With fully liberalised road transport markets and fully liberalised rail freight transport markets in Europe, there will be a trend towards combined transport. This will clearly favour railway undertakings with their own logistics and freight forwarding branch.

Intramodal competition in regional rail passenger transport markets is expected to intensify, due to the fact that in more and more regions the German states will invite tenders for regional rail passenger transport. Wage levels of railway undertakings will play an important role. There is pressure from German trade unions in the railway sector to have common wage rates for all competitors. One of the reasons for this is so that DB AG can take part in invited tenders with subsidiaries that have a wage level comparable to that of competitors.

Intensity of intramodal competition in the German long-distance rail passenger transport market is also expected to increase. This trend will depend on whether passengers are attracted to rail by lower prices compared to the present tariffs. With the liberalisation of long-distance coach travel in Germany, however, such passengers may switch to coach travel as is the case in the United Kingdom. This market development will depend substantially on the regulation of long-distance coach traffic.

The future development of the regulation of rail transport markets in Germany will depend on several factors. The European Commission is planning a recast of the first railway package, which – among other issues – aims at consolidating the various three directives of the packages. The recast has been in preparation since 2007. It is not just aiming at consolidating the present – sometimes not fully consistent – regulatory framework for rail transport markets in the European Union. The Commission is also considering moving further towards separation models, not outlawing integrated models with holding structures, but making them unattractive by introducing further separation requirements. Furthermore, the Commission is interested in handing over more competences to the national regulatory authorities.

In Germany the present federal coalition government has agreed on several regulatory issues partly overlapping with those of the recast at the European level. The main issues are strengthening the BNA in the field of railway regulation, reviewing the structure and organisation of DB AG, introducing incentive regulation for the track access regime (discussed below) and broadening the scope of access regulation (including more service facilities defined as ‘essential’ in the meaning of the essential facilities doctrine). The Federal Government is pressing for a more symmetric regulation in Europe, thus reducing or abolishing the existing access restrictions in other Member States, which are impediments to the formation of integrated European rail transport markets.

The BNA has become a more and more active player in railway regulation, going beyond the enforcement of existing regulation law by making proposals for widening the scope of railway regulation. This has been supported by special reports from an independent Monopolies Commission in charge of monitoring the development of competition in German markets. Both the BNA and the Monopolies Commission ask for more competences for the BNA in the field of railway regulation, for widening the scope of regulation, including more service facilities of DG AB to be treated as essential facilities, for a move in the direction of a separation model for DB AG and for the introduction of incentive regulation in the field of track access regulation. The BNA is also asking for the transfer of certain competences of the Federal Railway Authority to the BNA.

It is therefore clearly visible that overlaps exist between the 'reform agenda' of the European Commission, the Federal Government, the BNA and the Monopolies Commission. These overlaps will be analysed in the following section on controversial issues.

1.5 Controversial issues

1.5.1 Interface between infrastructure and operations

The advantages and disadvantages of the separation and the integration models have been discussed for many years. At the European level, the European Commission has favoured the separation model. But present legislation – being a compromise between the Council of Ministers and the European Parliament – allows for the integrated model under the condition of separate accounting, a distinct division for the infrastructure company and the prohibition of cross-subsidisation. These conditions were agreed upon on the grounds that non-discriminatory track access is to be ensured. The European Commission – not happy with the existing compromise – has brought an action before the European Court of Justice against the Federal Republic of Germany in order to move further towards the separation model. The German Federal Government defends the current position as being laid down in German law. On the other hand, the Monopolies Commission is pressing in the same direction as the European Commission.

It may be helpful to look into the practical consequences of moving towards the separation model in Germany. If a separation model means that an independent infrastructure company (i.e. DB Netz AG) has to earn a market rate of return on capital employed (ROCE), this would automatically lead to higher track access charges. This is not consistent with a policy that aims at improving the model split for rail transport unless the infrastructure company is to be heavily subsidised. Then a new problem will come into play: political decisions on track maintenance and track innovation. Decisions on innovations in the infrastructure sector will be separated from decisions on innovations in the field of operating transport services. It is foreseeable that frictions between these two decision-making levels will inhibit innovations and create additional costs. Whether or not these clear disadvantages will be compensated by providing better non-discriminatory track access is an open question. Up to now, the argument for introducing the separation model in Germany has been that it would reduce existing discrimination potential, without proving whether or not this is just a theoretical potential or an actual threat.

1.5.2 Demand for more stringent regulation

The Federal Network Agency, the European Commission, the Federal Government and the Monopolies Commission are asking for a more stringent regulation of German rail transport markets. In so far as national actors are doing so, the question arises whether the existing asymmetry in European regulation of rail transport markets would thus be further extended. If in Germany regulation of rail transport markets is substantially more stringent than in other Member States of the European Union, the existing distortions of competition in such markets would be preserved and even aggravated. The impact of such distortions on the functioning of competition in German rail transport markets has been demonstrated in section 1.3. But without this aspect of maintaining or even intensifying distortions of competition, there is one argument in favour of first learning the impact of the existing regulation and then adjusting

such regulatory instruments that have proved to be sub-optimal. An ongoing process of changes in the regulatory framework for rail transport markets – especially with overlaps of European and national 'reforms' – may impede the market process. It has also to be kept in mind that this is a learning process, during which the market players obtain information about successful market strategies. With constant changes in the regulatory framework of the market this learning process may be inhibited.

1.5.3 Incentive regulation

In the light of positive results of incentive regulation introduced in other network industries – like electricity – the Federal Network Agency is pressing for the introduction of incentive regulation in rail transport markets as well. The reasoning is that such a regulation will force the infrastructure company to focus on cost saving. There are three open questions. The first one refers to the possibility of transferring experience with incentive regulation from other network industries to rail transport markets. The second refers to the introduction of incentive regulation in addition to incentive mechanisms inserted into the new contracts between the Federal Government and the infrastructure company on providing financial support for infrastructure maintenance. Such contracts cover the financial support and system of monitoring the usage of public funds (Leistungs- und Finanzierungsvereinbarungen, LuFV). The third question concerns the insufficient rate of return on capital employed (ROCE) in rail infrastructure.

It is difficult to use experience gained with incentive regulation in other network industries for access regulation in rail transport markets. The path-dependence in rail transport markets is different to that in other sectors. In Germany, strategic consideration has played an important role in building the present network (which is not totally compatible with present economic requirements).

Existing LuFVs already provide high incentives for the infrastructure company to engage in cost saving and to adhere to the quality standards agreed upon. If additional incentives are to be provided by incentive regulation, the effects of both instruments have to be compatible.

In other network sectors, incentive regulation is an instrument to restrict unjustified rates of return on capital invested. As compared to full cost regulation, incentive regulation is designed to prevent excessive rates of return and spur efficiency. In rail transport markets the story is different. Even though it no longer produces losses, the German infrastructure company is far from earning a market return on capital invested. If the goal of incentive regulation is to bring the ROCE rate close to a market rate of return in rail transport markets, this would lead to higher access charges. This will then contradict the political goal of improving the modal split for rail transport.

1.6 Outlook

As discussed in section 1.4, predictions about the development of competition and regulation of German rail transport markets are difficult to make. One development is for sure: further integration of separate national rail transport markets in Europe will favour competition in the German market because of its central location in Europe. Here, on German rail transport markets, various players – state-owned and private ones – enjoy the opportunity of open

markets. On the other hand, however, there is evidence that asymmetric regulation in Europe will have a negative affect on German rail transport markets and maintain and intensify existing distortions. The German Government has realised this problem. It would then be consistent not to regulate the German rail transport markets more heavy-handedly than is the case in other Member States of the European Union. When the expected developments of the modal split for rail transport come about, it has to be taken into account that this measurement is often too simple because combined transport will become more and more important. Market success of players in rail and road transport markets will depend on their ability to engage in innovative modes of combined transport.

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Source: Railway Gazette International

2 France[1)]

Emile Quinet

Area (km²) 543,965			
	2008		**2008**
Population on 1/1/2009 (million)	62.4	Freight tkm (billion)	40.6
GDP (€ billion)	1,950.1	Passenger-km (billion)	85.0
Length of line (1000 km)	29.9	Modal share – passenger (%) Modal share – freight (%)	10.0 % 13.9 %

Source: Eurostat, Statistical Office of the European Union, 2010

2.1 Introduction

The railway sector is well established. Since the arrival of the TGV 30 years ago there have been no major new developments – technology changes slowly. Although its components have followed different paths, it takes a long time for the total traffic system to change. Passenger transport has been growing steadily thanks to the TGV and public service contracts with the regions, but freight traffic continues to fall. Trends in traffic since 1996 are shown in Table 1.

Activity in billion pkm or tkm	1996	2006	2007	2008	Change 1996 to 2008 (%)
Ile-de-France	8.87	10.65	11.20	11.39	+28.4
TER regions	7.25	11.14	11.62	12.70	+75.2
Main lines	43.65	51.98	53.09	56.31	+29.0
...of which high speed lines	24.79	43.80	46.53	50.61	+104.2
Freight	50.50	40.68	40.63	37.27	-26.2

Table 1: SNCF traffic (1996–2008)

[1)] This text is, with the addition of a few quantitative data, a translation from French of an article published in the Spring 2010 issue of the journal «Commentaire» and is reproduced with the permission of the journal and of the author.

For the end users, the only notable change is the gradual expansion of the high speed network, the increasing complexity of fares and, every six months, the timetable adjustments accompanied by sporadic strikes, which seem to be an unavoidable initial stage in negotiations between unions and SNCF management on this matter.

This regularity, bordering on monotony, arouses interest in events that herald possible changes in direction. Indeed, those who have been paying attention will have noticed that there have been many such events over the past months. Since 1 January 2010, international passenger services have become completely open to competition. Around the same time, an independent French regulatory authority was legally established, ARAF (Regulatory Authority for Railway Activities) but it has yet to be set up. The French Competition Authority has finally decided to address the question of possible restrictions in station management competition.

2.2 Development of the railway system

Here we can see free market mechanisms making waves in a universe marked with the stamp of the state. To assess the consequences, we must look back at developments over the last 30 years.

2.3 Background

Around the middle of the 1980s, in the context of its general market liberalisation doctrine, the Commission of the European Communities adopted public transport policy based on the introduction of competition and the break-up of state monopolies, which were standard in most of the countries of the Community at that time.

It was the railways which required these reforms most. All the countries involved needed to plug the hole in their public finances, reduce costs and reverse the trend of falling passenger numbers; all the more regrettable, considering the benefits of rail transport to the environment. Directive 91-440[2)] established the basis for reforms to be undertaken in the sector: separation of infrastructure management and operations[3)] and the introduction of competition in operations, as infrastructure could clearly not be exposed to competition. Numerous additional texts followed that detailed the gradual implementation.

This implementation was particularly slow in France, for which there are good and bad reasons. On the one hand, our system was not the most inefficient in Europe; other systems were in more urgent need of reform. Furthermore, one could – and still can – question how sound the central idea of separating infrastructure management and operations is, considering the synergies and complementary nature of the two: Europe is the only major region in the world that has chosen this path. However, we are also familiar with the reticence of our country when carrying out reforms causing controversy. In the case in question, the railway workers' unions were very hostile to any change in the functioning or structure of SNCF, which for them represented a risk of abandoning a public service and a first step towards privatisation.

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2) Council Directive 91/440/EEC, of 29 July 1991, on the development of the Community's railways

3) Understood in the sense of production and marketing of services for users: passenger and freight trains

We were almost always one of the last countries to incorporate the community texts into national law, having generally battled in the corridors of Brussels to reduce the scope and push back the deadlines. We were not the first to separate infrastructure from operations, indeed RFF (French Rail Network) has only existed since 1997, and the legal separation came with an unusual condition, in that, for network maintenance, RFF is obliged to employ the services of SNCF technical infrastructure services, which have remained part of the incumbent company. Competition in rail freight was only authorised end of March 2006 shortly before the deadline in early 2007 set by the EU, and the opening of the international passenger transport market and related cabotage was only possible from the final deadline of 1 January 2010.

2.4 Regulation

Paradoxically, liberalisation requires considerable intervention by state institutions. Previously, this task had been implicitly undertaken by the Ministry of Transport, an acceptable situation considering that the companies in the system were under the wing of the state and it was simply a matter of structuring the relationship between the two public companies, namely SNCF and RFF. This changed with the arrival of private operators and competition. The Commission in Brussels imposed the creation of an independent regulatory authority, as in other liberalised sectors (postal services, telecommunications, energy, etc.). France has now met this requirement[4]. ARAF (Regulatory Authority for Railway Activities) will primarily manage relations between the infrastructure manager and operators: allocation of available train paths, setting infrastructure access charges paid by operators to RFF and the access conditions for installations essential to operators (stations, electricity, etc.).

The main players in the French railway system

SNCF (French National Railway Corporation): incumbent operator still having a monopoly on domestic passenger trains; carries out infrastructure maintenance and operations paid for by the infrastructure manager RFF.

RFF (French Rail Network): created in 1997, manages railway infrastructure: construction of new lines, improvement of existing lines. RFF is responsible for the maintenance and operation of lines, which it is obliged to contract out to SNCF. It is responsible for the allocation of train paths for which it receives the fees.

New entrants: operators having arrived on the market thanks to the liberalisation directives; currently around 10 rail freight operators, often linked to foreign railway companies.

State: finances a considerable portion of RFF's infrastructure expenditure and SNCF's public service obligations; determines new line construction and access charges. Acted as regulator prior to 1 January 2010.

ARAF (Regulatory Authority for Railway Activities): provides recommendations to the Ministry of Transport and monitors network access conditions.

▶

4) Bill on the organisation and regulation of railway transport icluding various mechanisms relating to transport, adopted on 3 November 2009

Regional authorities: establish contracts for regional services (tariffs, timetables, relevant subsidies following decentralisation and flat-rate financial support from the state) with railway operators (currently SNCF).

European Union: sets directives and regulations to which member states must adhere, moving in a direction of increasing liberalisation.

The independence of ARAF's decisions is, however, limited due to the role that public financing plays in the railway system. In general, when a user pays one euro the state institutions, based on very complex mechanisms, also pay only slightly less than a euro. The state contributes to the maintenance of existing infrastructure, to the construction of new lines and to subsidies for public services. The regional authorities finance public service obligations they impose on TER (regional rail) services. This means that state institutions undeniably play a role in the system, a fact the regulator will not be able to ignore. The level of access charges thus has clear consequences on RFF's income and therefore on the organisation's balance sheet and ultimately on the subsidies the state will have to pay. Decisions relating to access charges consequently remain under state control and ARAF simply has an advisory role in this domain. Its power is limited.

The existence of competition means that the Competition Authority also has a role to play, and it has wasted no time in making its interest in the railway system known; on its own initiative, it recently analysed the conditions in station management, a key element in the transport chain and a major factor in developing intermodality between trains, buses, cars, bikes, etc. If railway liberalisation is to bring about initiatives in this field, SNCF should not be allowed to abuse its privileged position in station management. To this end, the Competition Authority has made several recommendations, notably the need to separate station management from the rest of SNCF.

2.5 Liberalisation will continue

Progress made since the start of 2010 concerning competition in the passenger market has been limited as it only concerns international traffic and related cabotage; it is the first step in more comprehensive measures that will affect, according to varying criteria, services subject to public service obligations and others, i.e. domestic commercial services.

The former, the public service obligation services, are those where the authority responsible for organizing transport imposes very precise conditions on operators in terms of timetables, generally with tariffs that are lower than the cost of providing the service, and subsequently compensates the resulting deficits by providing subsidies to the advantage of the operator. This is how the regional services of the TER and Ile-de-France trains work, contracted by the regions involved. For these public service obligations there is a community regulation called "PSO regulation" dating from 2007, which came into force at the end of 2009 and according to which contracts are the standard framework – which is already the case in France. The move to competition (selection of the operator via a call for tender) is not yet mandatory but is likely to become so within the next ten years[5)].

5) Trials moving in this direction are currently being looked into.

Non-international commercial services are very diverse; indeed, there are certain routes that are very profitable, such as Paris-Lyon or Paris-Marseille, but equally loss-making routes that are an unofficial public service obligation[6] of sorts. Freedom of entry onto the market has not yet been enforced but, considering the Commission's general thinking, it is to be expected that a directive will make it mandatory within the next few years, probably in the form of competition on rails. In this way all rail activities will become subject to competition.

2.6 The consequences

What competition?

Naturally, in the short term, we cannot expect to see a rapid or large reduction in SNCF's passenger market share. Competition is initially limited to international traffic; furthermore, the incumbent operator's network gives it a response capacity sufficient to make any potential entrant think twice about entering the market.

This has already been seen in the case of freight traffic, despite the fact that SNCF is notoriously less efficient in freight transport than in the passenger sector: the market has been totally open for three years and the market share of new entrants is slightly below 15% and increasing less and less rapidly. It is progressing at a very similar rate to that seen in other European countries such as in Germany where liberalisation took place ten years before France and new entrants now account for around 20% of the market.

Direct comparisons with other countries in passenger traffic are not as easy because the nature of reforms and liberalisation differ from country to country. In the United Kingdom the incumbent operator was completely dismantled during privatisation in 1988 and competition is solely for the award of one of the 20 rail franchises. The German system is more similar to the French one: in addition to regional links managed by concessions with the states ("Länder"), competition on interregional routes takes place in an open market. The new entrants have only a small market share of the interregional market, around 1 %. These figures are difficult to compare directly to France because German interregional links are not particularly profitable whilst our international routes are among the most attractive in Europe, starting with the examples of Paris-Brussels and Paris-London. Their profitability will attract competition.

Where will this competition come from? The railway sector, particularly in terms of passenger transport, is complex; its management requires very sophisticated technical know-how and organisation. There is a minimum size necessary for entry into the market: for a service between two cities to attract a sufficient number of customers it needs to be frequent (let us say 4 to 10 services daily). This requires significant investment in rolling stock, bringing with it considerable risk of failure and significant losses if the venture fails, notably due to the long duration of amortisation of investments. It will therefore most likely be established rail operators from neighbouring countries that will penetrate the French market first because they will be able to fall back on their home markets in the event of failure. It is also conceivable that operators from other transport modes could enter the market, such as airlines that are familiar

[6] These loss-making services are also very diverse. There are examples of conventional lines that are maintained by SNCF to preserve good relations with the local contracting authorities as well as high-speed services more or less imposed on the railways as part of the negotiations with local authorities at the time of line construction.

with the market and could find a beneficial overlap with the railways. Intentions expressed by Trenitalia and Air France illustrate these two possibilities.

How ever this occurs, on international lines and later on interregional domestic lines when competition is opened up, entrants will 'skim' the market, meaning they will operate on the most profitable routes, from which the profits are currently being used to counter deficits on loss-making lines.

Furthermore, the ensuing oligopolies may be very unstable. We will be seeing peaceful phases and phases of aggressive competition in succession. An aggressive phase could be induced simply by one of the market players being taken by hot-blooded temperament, which Keynes saw as the spirit of capitalism.

Regarding regional services subject to competition for tendered contracts, entry is simpler. Once awarded the tender, the new operator is protected from strategic actions by competitors for the duration of the concession, meaning the risks are less significant. Experience in Germany, where this method is used systematically, shows that competition is strong: in this market newcomers have taken a 20% share from the incumbent operator, DB. In France certain regions could be tempted to try this. It is, however, unlikely that many of them will do so, at least initially, as SNCF has certain valuable assets – not just the company's knowledge of tendering processes, but it also has certain tools at its disposal to punish regions that decide to source their rail services elsewhere. These events are likely to arise in approximately ten years' time. In this case, as with international and interregional lines, the most profitable networks will be affected.

All in all, not ruling out phases of intense conflict, the arrival of competition is likely to be slow and gradual. But it will have consequences for customers and operators alike.

2.7 Consequences for customers

Let us initially look at the customers for the transformation that has been underway for the past twenty years, undertaken in the interest of the customer. It should improve the quality of services offered and decrease the price. It is possible to predict what will happen in light of what has happened abroad, in Germany or Sweden, for example, or when other sectors were liberalised (notably air transport). Initially, it is to be expected that services will become more frequent, within the limits set by the infrastructure. Prices will also fall, and this is how the effectiveness of the whole reform process can be assessed.

2.8 Consequences for state operators

However, this criterion can have two sides: we naturally want price reductions, but if they are too extreme the financial stability of the incumbent operator could be undermined. This is a real risk, because any of the development scenarios presented here would have the effect of reducing the current profits of the incumbent operator. Competition will skim the most profitable services, initially on international routes and later, on all services at a speed based on the European Union's decisions. The situations in which SNCF has a dominant position, notably in station management, will be monitored by the Competition Authority to make sure

SNCF cannot exploit these advantages to the full. In the fields where SNCF makes a profit, RFF and the state are trying to retrieve this money by increasing the infrastructure access charges.

On top of this, SNCF's financial balance is precarious. We know the approximate scale of the balance sheet, even if business confidentiality means we do not know the exact figures: in practical terms the TGV network, in particular on its international lines, is the sole source of profit for the company, at around 1 billion euros. This covers the deficits of the company's other activities. Long-distance services on conventional lines (primarily Corail and Intercité trains) are starting to see large deficits. The services responsible for managing infrastructure are also in the red. But the main deficit comes from freight transport, amounting to around 0.6 billion euros.

In the short term, the continuous decline of freight traffic is the main concern. Rail's market share has been cut in half over the past fifteen years, to the point that many observers are unsure of the future of the activity. Plans to revitalise rail freight are announced at regular intervals – every four years approximately – but to date they have failed to make the activity competitive and reverse the trend. The plan unveiled a few months ago includes a very ambitious infrastructure programme, for which the state has pledged 6 billion euros. But its impact will be a long time coming as it primarily consists of constructing new infrastructure and does not address the true shortcomings of the service provided by SNCF, i. e. transit time and the uncertainty of delivery times. There is no guarantee that this plan will be successful, and we cannot exclude the possibility of a new decline in freight activity and further deficit growth.

The infrastructure manager RFF also has a role to play in the railway system. Due to its "inherited" high levels of debt that were not paid off by the state, the access charges paid by operators (currently almost exclusively SNCF) have increased rapidly over the past years – with state support, to the point that many people consider that the economic viability of the TGV system is close to be jeopardized. Yet RFF's expenditure is still not covered. The new links agreed as part of the 'Grenelle Environnement' measures will not have the passenger numbers or financial viability that previously existing services enjoyed. The need for public subsidies will therefore increase.

2.9 Responses

SNCF definitely has various options open to it and is not resting on its laurels. The company is already accustomed to competition from air transport and road transport, from which it has learnt about effective commercial policies, particularly via yield management. Via its subsidiary IDTGV, a sort of low-cost company, it has expanded its product range and market coverage in passenger transport.

SNCF has recently adopted a group strategy. It has acquired or established subsidiaries, the activities of which are developing both in France and abroad and involve both rail and other modes of transport. Moreover, in doing so, the company is simply entering into the big game of monopoly that is emerging in Europe. The key competitor provides a good example: the German incumbent operator DB has been expanding rapidly in the freight sector by acquiring foreign rail freight operators (in the Netherlands, the UK, Switzerland, etc.), as well as road

hauliers and logistics companies dealing with the transport itself (whether rail or not) as well as related activities, such as storage, warehousing and materials management. SNCF is moving in this direction. The company has become an important global logistics operator via its 100 %-owned subsidiary Geodis, whose management is being increasingly incorporated into the parent company.

It is also possible to reduce the harmful effects of new entrants skimming off the most profitable services and leaving the incumbent to operate loss-making ones without compensation. To achieve this, public service obligations must be overhauled and, as has already been carried out in other sectors such as postal services and telecommunications, they must be financed via a joint fund that could be paid into via various methods: based on charges on railway services subject to competition and deemed profitable[7], based on charges for all types of transport or paid for by the taxpayer.

Additionally, for a long time SNCF has been reducing costs. Capital productivity is good compared to neighbours. Labour productivity is also increasing regularly, although this is occurring at a slower pace than in other railways, as SNCF is restricted by the status of its employees and limited by the rate at which staff retire.

2.10 The Achilles heel: rigidity

However, the company has one major weakness: rigidity. SNCF has limited control over costs in the short term. This is part and parcel of railway activity that is characterised by significant fixed costs. Running a train costs little more when full than when empty. Maintenance of a line increases less than proportionately to traffic running on it.

There is also rigidity in the structure of the company. It is gradually evolving from being a function-based company to a more responsive product-based enterprise. But old habits die hard and the former function-based structure was not without some advantages – particularly in terms of safety, which the company now has to reinvent via complex coordination.

Rigidity is also found in human resource management. Time and change have joined forces to produce the current highly complex set of rules, which constitute a formidable barrier to flexibility in management and exceed the notion of life-long employment for railway workers by a long stretch. In the many countries which have undergone major reforms, excess staff have been served as a temporary solution (sometimes as much as 20 % or 30 % of the workforce). It would be unrealistic to envisage that such arrangements could be implemented in France, without inducing significant industrial action in the company. It is this inflexibility that probably explains the slow pace of progress in productivity compared to foreign counterparts.

2.11 Future options

In the not too distant future, SNCF is going to be confronted with more efficient and capable competitors. It seems that this confrontation is bound to take place gradually. Nonetheless, the consequences could be devastating. The company is, for all intents and purposes, caught up in a race against time (although time sometimes appears to be standing still) between

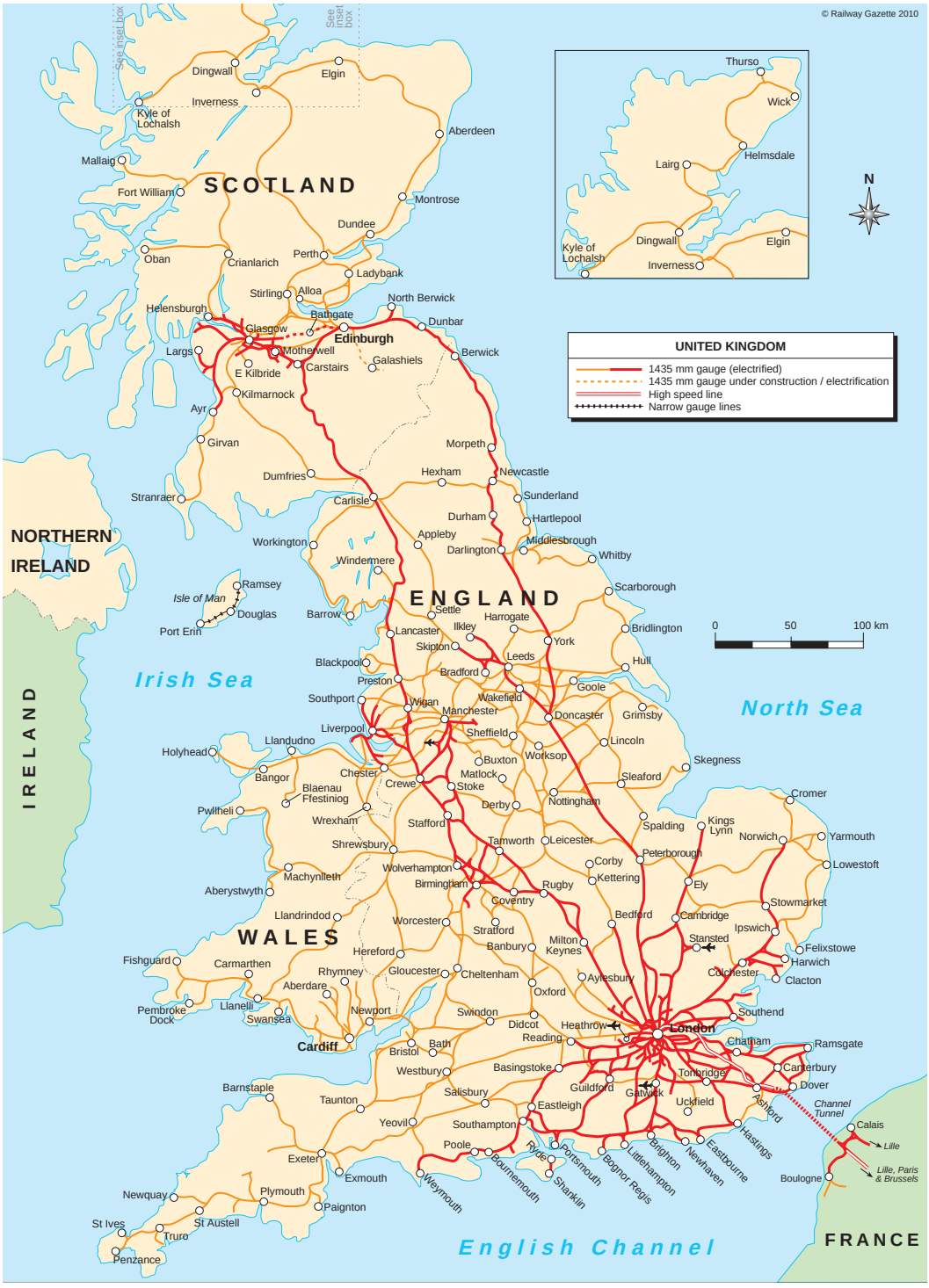
[7] All operators would be subject to these charges, new entrants and SNCF, in accordance with competition rules.

adaptation to competition and the actual arrival of that competition. As such, there are two possible extreme scenarios.

The first is that competition arrives gradually enough to allow the company to adapt. This would imply an end to the haemorrhage in freight, success in the group strategy enabling more overseas expansion, a relatively low level of competition in the passenger market, a complete overhaul of and proper compensation for public service obligations, better relations with the unions and continued improvements in productivity. These favourable developments and the efforts required to obtain them would also have to continue in the long term.

The other scenario is that a number of these favourable factors disappear: freight lurches once again into decline, the group strategy struggles, the state sets infrastructure access charges too high, SNCF loses too many profitable regional franchises in future bids on regional services. Income would fall leaving costs exposed and a soaring deficit.

Similar episodes have occurred in the past. But in each case, the state was able to bridge the gaps using financial gymnastics at the expense of the taxpayer; and the company's monopoly position meant that it could land back on its feet. This no longer applies today. Competition is growing – community rules governing state aid to companies operating in competitive sectors are increasingly stringent and the state will no longer be able to inject funds without providing the Commission with far reaching management reforms in return. This would lead to painful overhauls being executed in haste – the very kind of action that our cautious and progressive policy seeks to avoid. However, as Maupassant was wont to declare: "Life, you know, is never as good or as bad as one believes".



Source: Railway Gazette International

3 Britain[1)]

Chris Nash and Andrew Smith

Area (km²) 243,820

	2008		2008
Population on 1/1/2009 (million)	61.6	Freight tkm (billion)	24.8
GDP (€ billion)	1,818.9	Passenger-km (billion)	52.7
Length of line (1000 km)	16.2	Modal share – passenger (%) Modal share – freight (%)	6.7 % 11.9 %

Source: Eurostat, Statistical Office of the European Union, 2010

3.1 Introduction

Over the period 1994/97, the British railway industry was fundamentally transformed, with separation of infrastructure from operations and complete privatisation on the basis of franchising of passenger services and outright sale of freight operations. The reforms of those years, plus subsequent further changes, represent the most radical restructuring of any European rail system. This chapter attempts to summarise those reforms and make an assessment of their impacts.

The chapter is structured as follows. Section 3.2 outlines the initial privatisation structure as well as the reasons behind the particular structure chosen. Section 3.3 provides an overview of the subsequent experience of Britain's railways after privatisation, both before and after the financial collapse of Railtrack. Section 3.4 contains an assessment of the reforms, and we reach our conclusions in section 3.5.

3.2 Overview of the initial structure

In 1994, most of the fixed railway infrastructure assets, including not just the track and structures but also stations and maintenance depots, were transferred to a new company

1) The authors wish to thank their colleague Bryan Matthews, who was co-author of the original version of this chapter, Richard Davies of the Association of Train Operating Companies and Jeremy Drew of CER for helpful comments on an earlier draft, but are solely responsible for the final version.

(Railtrack) separate from the state owned company British Rail (BR), but still wholly-owned by government. The company was then sold by public offer in 1996. At the same time, BR's infrastructure services were reorganised and sold as seven infrastructure maintenance and six track renewal companies. BR's rolling stock was divided into three rolling stock leasing companies (ROSCOs). The ROSCOs (sold in early 1996) were to lease locomotives, coaches and multiple units to the passenger train operating companies. Six heavy maintenance depots (providing services to ROSCOs) were also sold in mid 1995.

The right to run passenger train services was franchised to 25 private-sector train operating companies (TOCs), thereby creating 'competition for the market' (with open access competition to be introduced gradually, since free-for-all open access would have undermined the viability of the franchises). The number of franchises was largely determined by the existing profit-centre structure within British Rail. In order to make relatively short franchises with regular franchising competitions possible, the TOCs were privatised with no significant asset base; they lease rolling stock and buy track access. Most of the franchises were let for a period of seven years although a few 15-year franchises were awarded, in return for commitments on investment. Franchisees bore all revenue and cost risks, except for changes in track access charges, which resulted in an equivalent change in subsidy or premium payments. Meanwhile, freight operations were separated into six companies and sold between December 1995 and November 1997 (five were in fact sold to the same owner, leading to these being reduced to two companies). Open access competition in freight was put in place from the outset.

Thus the aim was to create competition wherever possible along the supply chain – in freight operations, for passenger franchises, for the supply and maintenance of rolling stock and for track maintenance and renewal. Only the provision and operation of the infrastructure was seen as a natural monopoly, whilst the passenger franchising process would effectively award monopolies for a defined period of time.

To deal with these, two regulatory bodies were also created: (1) the industry's independent regulator, the Office of the Rail Regulator (ORR), which was set up principally to regulate the monopoly element of the business – Railtrack; and (2) the Office of Passenger Rail Franchising (OPRAF), which was mainly responsible for awarding franchises, paying subsidies, regulating fares levels and monitoring the delivery of the TOCs against the terms of the franchise agreements. OPRAF was later expanded to take on the role of strategic development in the industry and was renamed as the Strategic Rail Authority (SRA). Overall safety regulation remained with the government's Health and Safety Executive (HSE).

Railtrack was regulated by the ORR in two ways. First of all, the level and structure of the company's access charges (charges levied on-train operators for access to the track and stations) were determined periodically by the ORR, on an RPI-X basis[2]. These charges were set out in access agreements signed between Railtrack and train operators, and approved by the ORR. In addition, the access agreements contained separate performance and possessions regimes, designed to give Railtrack incentives to minimise delays on the network and make most efficient use of infrastructure possessions; designed also to compensate train operators for losses in revenue resulting from poor infrastructure performance or disruption caused by badly-planned or over-running possession activity. Second, the company was regulated through its network licence, granted by the ORR, which specified, for example, key

[2] The Retail Prices Index (RPI) is the standard measure of inflation, while X denotes the extent to which the regulated price is allowed to rise faster, or required to rise more slowly than inflation in general.

requirements in respect of asset stewardship and its safety and standards responsibilities (though, as described below, Railtrack's licence was initially weak relative to those of other privatised utilities).

As noted earlier, franchising was the chosen method for privatising passenger rail operations, and the TOCs did not therefore need to be regulated in the traditional sense. Instead, the regulatory relationship between the government and the private operators was formalised through the contractual provisions specified in the relevant Franchise Agreements and more detailed Franchise Plans (signed between the TOCs and OPRAF). These agreements specified, for example, the level of subsidy to be received (or premium to be paid in those circumstances in which a franchisee was actually willing to pay for the right to run a set of services), and any relevant minimum service provisions, as well as the fare regulation regime. Initially, key passenger fares (such as season tickets) were capped at RPI (for the three years from January 1996). For most TOCs, the agreements also specified the relevant penalties or bonuses to be paid by the TOC or by OPRAF, depending on train performance and measured in various ways (e.g. lateness and cancellations and timetable changes). The freight sector was privatised under an open access regime from the outset, since it was expected that sufficient competition would develop to protect the interests of freight users.

The dual regulatory structure – comprising the ORR and OPRAF – was selected in order to separate the roles of economic regulation (which, it was argued, should be independent of government, in line with other regulated utilities) from the responsibility for determining service and hence subsidy levels (which requires approval from the Treasury). The independence of the ORR would protect the private sector from governmental "changes of mind"; although this independence later created a conflict between ORR and government over funding levels (see below).

There were concerns about 'hold-ups', whereby the residual value of assets – be they rolling stock or fixed infrastructure – at the end of the franchise period is suppressed due to subsequent franchise bidders' knowledge that there is limited potential for the owners of those assets to redeploy them, resulting in problems of underinvestment. The hold-up problem would, however, be minimised by the fact that the TOCs themselves were not generally responsible for investment, but would enter into track access and leasing arrangements for a number of years in respect of new investment (aligned with their franchise agreements). Railtrack also had the protection of the independent regulator regarding future track access payments, whilst it was assumed that a competitive market in rolling stock leasing would emerge and avoid any hold-up problems.

Thus, the restructuring was carefully designed to introduce competition wherever possible all along the supply chain, and to provide appropriate incentives throughout the industry. However, the complexity of the industry structure and the associated contracts raised concerns about the ability of the highly fragmented industry to operate cohesively, especially when growth in traffic began to strain the capacity of the system and a new government wished to greatly expand the role of the railway.

3.3 Subsequent developments

This section briefly outlines the subsequent changes to the structure and regulation of the industry compared with the initial structure, and the reasons for the changes. It is divided

into two parts: (1) the regulation and demise of Railtrack; (2) the creation and abolition of the Strategic Rail Authority (SRA).

3.3.1 The regulation and demise of Railtrack

One of the key issues facing Railtrack and the ORR during the first few years after privatisation was the deterioration in asset condition as the volume of traffic running on the network increased sharply (Figure 1). Railtrack's stewardship of the network was heavily criticised. Immediately after the new Labour government took office in 1997, Railtrack's original licence was modified. This enabled ORR to require Railtrack to make formal commitments to improve key asset condition measures (see ORR, 1999), and to meet the reasonable requirements of customers (in order to provide some requirement on Railtrack to take account of long-term strategic plans).

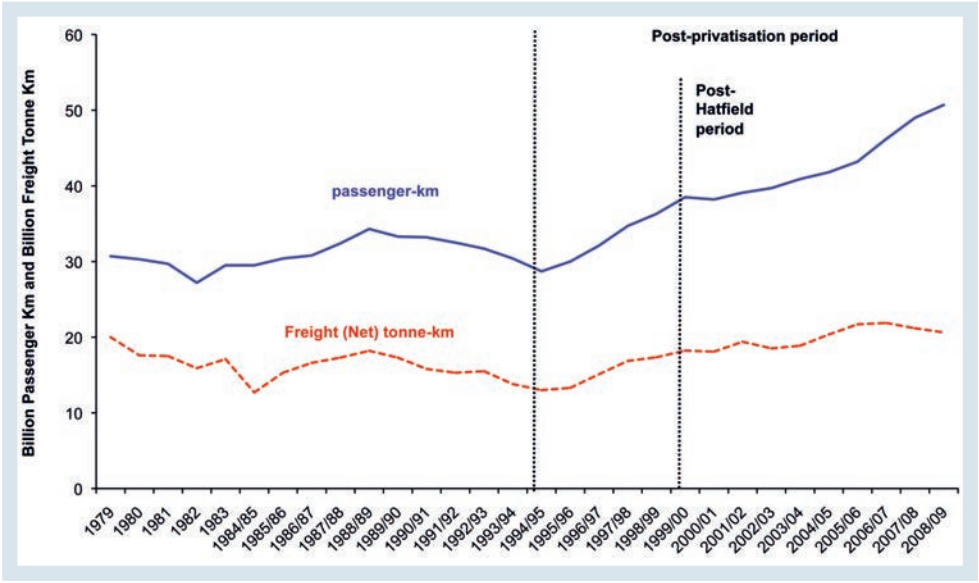


Figure 1: Rail Passenger and Freight Volumes (passenger- and tonne-km) (1979 to 2008/09)
Sources: Transport Trends, 2002 Edition, Department For Transport and National Rail Trends, ORR.

Whilst there were significant improvements achieved in Railtrack-caused delays during the early period after privatisation, the rate of improvement started to slow down after 1996/97. Hence, in 1999 the ORR also instigated enforcement action in this area in the form of specific regulatory targets for infrastructure-related delays, together with associated financial penalties for not meeting these targets. These targets were imposed through Railtrack's network licence, and were additional to the financial incentives within the performance regimes (contained in the track access agreements).

However, just as the first Periodic Review of Railtrack's charges was being finalised, a train derailment at Hatfield (17 October 2000), resulting from faulty track, set off a chain of events that culminated in Railtrack being placed into administration roughly one year later (October 2001). The derailment heightened concerns over the condition of Britain's rail infrastructure,

and Railtrack management responded – most commentators would say over-reacted – by imposing severe speed restrictions across the network, whilst initiating a major step change in maintenance and renewal activity. This led to a sharp deterioration in train performance which took many years to recover and in turn resulted in Railtrack having to pay more than £500 m (€750 m at exchange rates of the time) in compensation to train operators in 2000/01 for the increased delays on the network, more than Railtrack's annual profits in earlier years.

The Hatfield accident resulted in a major financial crisis at Railtrack and, at the same time, the company was facing massive cost overruns on the West Coast Mainline Project (WCML), which it had signed up to deliver under essentially a fixed price deal through an access agreement with Virgin Rail Group agreed in 1996/97. The cost of the programme had grown from an initial estimate of £2.4 billion (€3.6 bn) in 1996, to £6.2 billion (€9.3 bn) in 2000 (2001/02 prices); see ORR, 2000. This onerous contract became a major issue for the company and threatened its solvency. It soon became clear that unless large cost savings could be made, the company would require substantial additional funding on top of the settlement agreed during the 2000 Periodic Review in order to meet its obligations to customers and the ORR. It seems that the government was resigned to the fact that additional subsidy would therefore be required to keep the network operator going. The choice for the government was whether to pay the money to Railtrack or to a replacement company. Initially it did the former, though only in the form of agreeing a reprofiling of the original funding settlement with Railtrack. However, by subsequently placing Railtrack into administration in October 2001, the government chose the latter option.

Roughly a year later (October 2002), after a competition in which there was only one serious bid, Network Rail, a new, 'not-for-dividend' company[3], acquired the infrastructure assets and took over responsibility for network operations. From a legal perspective, Network Rail is a company limited by guarantee (CLG), with no shareholders but controlled by members, comprising industry stakeholder organisations (including government and representatives of the public) rather than shareholders.

The resulting loss of equity incentives raised fears that the new company would not face the incentives to deliver the kinds of efficiency savings initially achieved under Railtrack (Smith and Hannon (2003), p.10). Throughout the year-long period of Railtrack's administration, the cost of

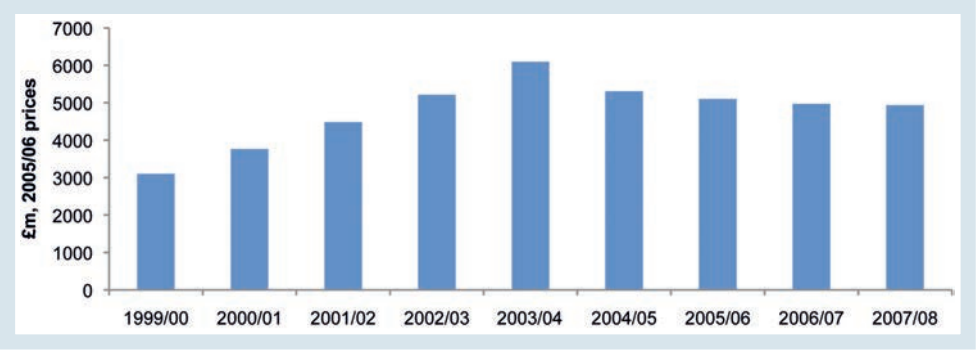


Figure 2: Rail Infrastructure Operating, Maintenance and Renewal Cash Costs (excluding enhancement expenditure) Sources: Network Rail and Network Rail Annual Returns

[3] The company can make profits if they are used to reinvest or build up a financial reserve.

maintaining, renewing and operating Britain's rail infrastructure continued to escalate (see Figure 2). The question for the ORR was whether the new cost levels were reasonable or could be reduced back to something like the levels of earlier years. In order to answer this question, the ORR announced an Interim Review of Network Rail's finances in September 2002, at Network Rail's request, as a result of which the Regulator allowed the company a substantial increase in funding for the five-year period 2004/05 to 2008/09, based on the assumption that the company would have to carry out higher renewal activity volumes over the period and that unit costs had also risen. However, the ORR also assumed that the company should be able to achieve significant reductions in unit costs as well. It should be noted that, since government subsidies have continued to be required to cover infrastructure costs (either directly or via the train operating companies), the ORR's announcement of sharply higher funding for Network Rail brought it into conflict with the government, who would ultimately have to find the money.

3.3.2 The creation and abolition of the SRA

In the original regulatory structure, neither the Regulator nor OPRAF was given responsibility for producing a strategic plan for the future of the railway, around which other players could build their investment strategies. In an industry where enhancements to the network almost always require government subsidy, it is crucial that some part of government makes a clear statement of its priorities for the development of the network and what improvements it is prepared to fund. Whilst Railtrack was required to publish its future plans, it was a commercial organisation with no direct access to government funding and no access to demand data held by the TOCs, which would seem to be an essential prerequisite for infrastructure planning. As part of the franchise agreements, OPRAF, and subsequently the SRA, did have access to such data. With a clear statement of government priorities and of plans for development of the infrastructure, the TOCs and ROSCOs would then be in a position to develop their own investment plans.

A case was therefore made for one body to be given responsibility for strategic planning in the industry. Moreover, the new Labour government wished to play a stronger role in directing the industry as part of a transport strategy which saw an increased role for railways. This led to the creation of the Strategic Rail Authority (SRA) in February 2001. Unlike its predecessor, OPRAF (which was effectively under direct control of a government department), the SRA was a non-departmental public body with its own Board, operating at arm's length from government, though not independently of government since it could receive guidance and direction from ministers.

Following the crisis of costs facing Britain's railways, in 2004 the government commenced a review of the structure of the railways and published a White Paper (DfT, 2004). After examining many options, some of which would in effect have abolished independent regulation of the industry, it decided to simplify the structure of the industry by abolition of the SRA. Its strategic planning and franchising responsibilities were taken on directly by the government department concerned, namely the Department for Transport (DfT). The independence of ORR was reasserted. To avoid the conflicts regarding funding that occurred during the 2002/03 Interim Review, an iterative procedure was introduced in which DfT indicated the overall budget (the Statement of Funds Available, or SOFA) as well as the desired outputs (the High Level Output Specification or HLOS). If ORR finds these to be inconsistent, it will estimate the cost savings from changes in outputs stipulated by DfT until the two are reconciled.

If this process fails, it is the SOFA that would be binding, with the required outputs reduced accordingly (ultimately by ORR if DfT does not specify).

A further major change concerning the ORR's role is that it took over responsibility for safety regulation. The stated aim of this merger of economic and safety regulation was to ensure that issues of "safety, reliability and efficiency" are looked at together by a single regulatory body, reflecting concerns that recent cost increases in the rail industry have been driven by an excessive focus on safety.

3.4 Assessment

Having provided an outline of the reforms, this section offers our assessment of their success. We consider in turn the two main features of the reform: the introduction of competition into passenger and freight train operations and the separation of infrastructure from operations.

3.4.1 Competition

Regarding the freight sector, the government's intention had been to split the rail freight business into three regional general freight companies as well as specialist parcels and container companies. In the event it was only by allowing all but the container company to be bought by the same buyers, a consortium led by the US company Wisconsin Central, that the government found a buyer. The container company was taken over by a management buyout. There was open access for new freight operators, and several entered, the largest being in fact a subsidiary of a state-owned company, Direct Rail Services, which had its origins in the nuclear industry but expanded beyond the transport of nuclear fuel and waste; and GB Railfreight, which is now part of Eurotunnel. More competition also resulted from the container company Freightliner, setting up a subsidiary for transport of bulk products, whilst the general freight company, originally known as EWS but later acquired by DB Schenker, expanded into the container market. Other smaller companies entered the market, although some subsequently became bankrupt. Nevertheless, the result is a rail freight market generally seen as competitive, with most shippers able to find a choice of rail hauliers.

Figure 1 shows that, whilst freight traffic is clearly cyclical, the underlying trend was downwards (as British Rail sought to shed unprofitable traffic) prior to privatisation and upwards since. Whilst the growth in tonnes was modest, in tonne-kilometres it was much more impressive. Much of the growth was in coal traffic, and to a large extent this was because of a switch from domestically produced to imported coal; the deep-sea ports used were much further from the power stations than the coal mines had been. But there is consensus within the industry that competition and the injection of private capital helped, and indeed without the latter the growth that occurred might not have been possible.

In the passenger sector, there has generally been no shortage of competition for franchises, with three or four bidders shortlisted for every franchise. Table 1 shows the companies currently active in the British rail passenger market, which comprise private British transport companies and foreign government railways. The importance of the latter is one of the surprises of privatisation, with the national rail companies of France, the Netherlands and Germany all being owners or part owners of franchises. The position of DB is particularly interesting: through a succession of takeovers it is now the owner or part owner of four

Company	Nature of Company	Nationality
National Express	Private, bus and rail	British
FirstGroup	Private, bus and rail	British
Arriva	Private, bus and rail	British until August 2010
Stagecoach	Private, bus and rail	British
Virgin	Private, rail	British
MTR	Public/private, rail	Hong Kong/China
Go Ahead	Private, bus and rail	British
Keolis	Public, rail	France
Serco	Private, utility	British
Abellio	Public, rail and bus	Netherlands
DB	Public, rail and bus	Germany

Table 1: Companies currently active and owning rail passenger franchises

passenger franchises and a small open access operation as well as being the major freight operator. Winning bids have often involved improved services and the acquisition of new rolling stock, the latter sometimes being required by the franchising authority.

There has also been a limited amount of on-track competition, both where franchises overlap and where new entries of open access operators have taken place. This has only been permitted where their operations are seen as mainly generative rather than abstracting from franchisees, and thus has invariably involved the operation of through services from London to destinations with few if any direct services by franchisees. On-track competition between franchisees has generally taken the form of lower fares being offered by the operator of a slower service (as in the case of London-Birmingham or London-Peterborough), whilst new entrants have also invariably offered lower fares than the franchisee (Griffiths, 2009).

The result has also been rapid growth in passenger traffic (Figure 1). Whilst econometric evidence suggests that the major causes of this have been economic growth, road congestion and the price of petrol, there also appears to be a residual unexplained element that may be attributed to privatisation and its consequences (see Wardman, 2006). As in the freight sector, access to private capital helped provide the capacity to meet external growth in demand.

However, after an initial decline, the cost of train operations also started to rise from the time of the Hatfield accident (Table 2), both in absolute terms and per train-kilometre. Whilst the disruption following that accident may be part of the initial cause, it cannot explain the trend long run (Smith, Wheat and Nash, 2010). Part of the reason for this rise appears to lie in the costs of new rolling stock, and externally determined causes such as fuel prices and insurance. Partly it was associated with the bailing out of TOCs, who had put in too ambitious bids (perhaps assuming that the experience that bus-operating costs could be cut by a third through tight management would also apply to rail) and could not achieve the level of cost reductions they expected. By 2001, around half of all TOCs had been placed on management contracts, which typically continued for a few years, or had their franchises renegotiated. There is evidence that this process weakened cost control (Smith, Nash and Wheat, 2009).

Drivers of TOC cost rises (£m, 2005/06 prices)	1996/7	1999/2000	2005/06	2007/08
All TOCs				
Staff costs	1,132	1,104	1,625	1,682
Rolling stock leasing costs	1,028	972	1,148	–
Other*)	1,420	1,316	2,079	2,793
All	3,580	3,392	4,852	4,475
Average salary £	25,948	28,266	33,269	34,746
Headcount	43,638	39,049	48,842	48,407
Passenger train-km (m)	380.9	426.2	454.5	458.1
Passenger-km (bn)	31.8	38.3	43.2	49.3

*) Note: A comparable breakdown for 2007/08 is not available. Note also that, as discussed in Smith, Wheat and Nash (2010), the post-2005/06 data is less reliable. However, whilst the scale of the cost reduction may therefore be in doubt, the direction of costs (downward) is still clear.

Table 2: TOC cost rises

However, a major issue seems to be the labour market, where wages rose fast, above the national average, and conditions were improved, including the widespread adoption of a 35-hour week in 2003/05. Between 1999/00 and 2005/06, TOC staff wages grew in real terms by 18 %, as compared with the real economy-wide average earnings increase of only 9 % over that period (see Smith, Wheat and Nash, 2010). At the time of privatisation, many training schemes were wound down, and the new private companies relied more on recruiting staff from their competitors than on training their own. It appears that the combination of rapidly rising output, shortages of skilled staff and relatively short franchises led to a situation in which the trade unions were able to achieve substantial gains by negotiating improvements with the more profitable TOCs, which the less profitable then had to match if they were to retain sufficient staff to meet their obligations. It should also be noted that in the British franchising process, whoever wins the franchise takes over the existing company and staff (with the exception of senior management) at their existing wages and conditions, so – unlike in other European countries – there is no scope for a new entrant coming in with lower labour costs except for open access operators.

More recently, there has been concern at unrealistically high bids regarding revenue growth, and the recession has of course meant that even bids that looked realistic at the time have proved infeasible. On contracts let or renegotiated since 1 April 2004, DfT now shares revenue risk with the TOC. For differences from planned revenue of between 2 % and 6 %, the risk is shared 50/50, whilst the government bears 80 % of the risk for differences of more than 6 %. The revenue sharing for underperformance usually only commences from the fourth year of the franchise. The result of this is, however, to considerably weaken revenue incentives on train operators, who find themselves only retaining 20 % of any increase in revenue. It has been argued that linking support to an index of the state of the economy, such as GDP, would be a more effective mechanism.

It should be noted that the rise in costs has been associated with improvements in quality, through newer rolling stock, with the average age of rolling stock in Britain falling from 20 years in 2002/03 to just 13 years in 2005/06. Furthermore, the most recent cost data for 2006/07 and 2007/08 indicates that TOC costs are finally starting to fall from previous peaks, following

competitive refranchising and the unwinding of the short-term management and renegotiated contracts (see Smith, Wheat and Nash, 2010).

3.4.2 Vertical separation

As described above, whilst Railtrack made a promising start in reducing costs, the Hatfield accident, combined with the large cost over-runs on the West Coast Main Line project, resulted in a sharp turnaround in the fortunes of Britain's railways, leading to a crisis of costs in the industry. Expenditure almost doubled between 1999/2000 and 2003/04, although it has steadily reduced since 2003/04 (see Figure 2). It has been argued that a private infrastructure manager would inevitably fail due to the inherent trade-off between profits and attention to safety and the stewardship of the network. Likewise, it has been argued that the complexity of the structure-created problems at the interface between track and wheel and between Railtrack and its sub-contractors is therefore undermining the vertically-separated model. In our view, these arguments are too simplistic and ignore the many other industries where private ownership sits happily with the management of public safety (often, in part, through regulation). Furthermore, in respect of the question of fragmentation, other complex, safety-critical industries (for example, the airline industry, oil and gas) operate vertically- and horizontally-separated structures, which include the outsourcing of maintenance and renewal activity (see Foster and Castles, 2004). Of course, the increased interface costs of a complex structure need to be traded off against the benefits of competition which the structure enables by creating a market for service provision.

What is important in such a complex structure, however, is that careful attention is paid to the way in which contracts are drawn up and managed. In particular, it is very important that clear economic incentives on the different parts of the industry are put in place, monitored for their effectiveness and, where necessary, modified (particularly where monopoly is created). Furthermore, where sub-contracting takes place, it is very important that parties share relevant information and that there is an effective mechanism for managing the sub-contracts. This was certainly not achieved in Railtrack's initial contracts for maintenance.

In terms of the relationship with the train operating companies, the level of infrastructure charges and the accompanying performance regime form an essential element in the incentive structure. For franchised passenger operators, it is only to the extent that TOCs can vary services from what the government specifies that these regimes have an impact on the TOC, although, of course, they may also influence service specification at the time of franchising. For open access and freight operators, the incentive properties of the charges are much more important. Initially, infrastructure charges for passenger franchisees comprised a large fixed element, plus a variable element based solely on wear-and-tear costs, but highly differentiated to reflect the relative damage undertaken by different types of vehicles. Freight charges were to be negotiated on the basis of willingness to pay.

However, various problems were found with this structure. The structure gave no incentive to Railtrack to expand capacity, whilst giving a strong incentive to passenger Train Operating Companies to seek to expand services even when capacity was scarce. As a result, in the year 2000 periodic review, an incentive payment was introduced to Railtrack based on traffic volume, along with a congestion charge based on the deterioration in reliability when capacity utilisation was high. An explicit scarcity charge to ration capacity has since been considered but rejected as too complex.

In practice, the role that pricing might have played has been taken up by centralised capacity planning through studies to determine optimal capacity utilisation and through highly prescriptive franchise specifications. Negotiating freight charges on a case-by-case basis was found to be a complex process that delayed freight operators in bidding for traffic, and the largest operator soon negotiated a two-part tariff similar to those in the passenger sector, with a fixed charge and a variable charge based on marginal cost. However, this raised claims of discrimination relative to other freight operators and, in the 2000 periodic review, the government agreed to fund the cost of moving to freight access charges based solely on marginal cost. This decision has since been partially reversed with a decision to mark up charges on two types of traffic (coal and nuclear), where rail is seen to be in a particularly strong position, to contribute towards the fixed costs of freight traffic.

The new ownership structure, in which the infrastructure is owned and operated by a 'not-for-dividend' private company without shareholders, but with its debts to date underwritten by the government has been criticised as making it even more difficult to motivate the company. A lot rests on the regulator to enforce efficiency, but the usefulness of the sort of financial penalties the regulator usually imposes, when there are no shareholders to feel the pain, has been doubted. Benchmarking work undertaken at the time of the 2008 periodic review suggested an efficiency gap between Network Rail and the upper quartile of European infrastructure managers of 37 %, although costs are now coming down (Smith, 2008). Given that the infrastructure manager has been implicated in a number of fatal accidents, it is often thought that the biggest problem with rail privatisation has been safety. Yet statistical analysis of accidents and fatalities data revealed that safety continued to improve after privatisation (see Evans, 2007). However, confidence in the industry was damaged by several major accidents, in which the infrastructure manager was held responsible. Of course, in the face of high-profile rail disasters, the statistical analysis did not alleviate passenger or political concerns, leading to major expenditure (for instance, in a new train protection system) to make the industry even safer.

3.5 Conclusions

The British rail reforms are more radical than those of any other European country, in that they involved not just vertical separation and opening up the market to competition but also complete privatisation of both infrastructure and operations.

Clearly, privatisation of the infrastructure failed. Railtrack became bankrupt and a major crisis in terms of costs and performance resulted. It is not clear whether this failure was inevitable, or whether with tighter regulation – and simply better management – it might have been successful. Whilst there were problems with the interface between train operators and the infrastructure manager, it does not appear that these were critical to the failure, so there is no reason to regard this failure as a failure for vertical separation in itself.

The second major innovation of rail privatisation in Britain was the comprehensive privatisation of all train operators. In the freight sector, this appears to have been a success. There is less clarity about the outcome of the competitive franchising of all passenger services. Whilst the early experience was very positive with traffic growth and reduced costs, later on, TOC costs began to rise again alongside the major explosion of infrastructure costs. The reasons for this are not well understood, but the actions of the Strategic Rail Authority in placing TOCs on

cost-plus contracts ahead of refranchising may have been a factor reducing the pressures on costs, whilst the substantial replacement of rolling stock and also external factors such as fuel costs played a part.

The major rise in labour costs seems to be the result of excess demand for scarce trained labour plus the structure of the industry. Longer franchises may help control the problem as they will incentivise training (in place of simply competing for existing staff in the industry), and give greater incentives to control wages and conditions, as well as encouraging investment.

With a new set of franchises in place, with signs that train-operating costs are beginning to fall and infrastructure cost is coming down, the British rail industry is now delivering good services and starting to get costs under control. That said, huge costs have been incurred in the meantime, and perhaps one of the lessons here is that a more gradual approach to reform would probably have delivered better results on the cost side, and indeed the empirical evidence from around Europe supports this assertion (see Friebel, Ivaldi and Vibes, 2008).

However, it is too soon to be confident that the issues of cost control, which emerged in both the infrastructure manager and the franchised passenger operators, have been fully resolved and, indeed, the government has recently ordered an investigation into the costs of the rail industry (March 2010). There is also considerable debate surrounding the process for awarding franchises, the appropriate franchise length and the associated question of risk sharing, which will be crucial to securing the potential benefits of franchising going forward.

Likewise, benchmarking Network Rail is problematic since it has no domestic comparators and, therefore, the regulatory process relies heavily on international benchmarking. Existing methods for carrying out international comparisons will need to be maintained and developed if downward pressure on costs is to be maintained in future, as Network Rail narrows the gap against its comparators. Furthermore, questions remain over the incentive properties of the not-for-dividend company, Network Rail, and potentially also about whether it should continue as a single entity, or be split up in some way (depending on the model adopted, the latter may assist in terms of benchmarking).

Finally, with regard to the third unique feature of the British privatisation model – the highly complex regulatory arrangements – we now seem to have a sensible, arguably world-leading, way of reconciling the need for independent economic regulation with the legitimate concern of the government that its objectives and financial constraints should be appropriately recognised through the system of high-level output statements and statements of funds available from government feeding into the periodic review by an independent regulator.

The coming years will be crucially important for the rail industry and for demonstrating the success of the reforms. If continued progress can be made on costs, then it might be concluded that the British reforms worked – eventually.

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Source: Railway Gazette International

4 Italy

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Area (km²) 301,336

	2008		2008
Population on 1/1/2009 (million)	60.0	Freight tkm (billion)	23.8
GDP (€ billion)	1,572.2	Passenger-km (billion)	49.8
Length of line (1000 km)	16.9	Modal share – passenger (%) Modal share – freight (%)	5.7 % 10.4 %

Source: Eurostat, Statistical Office of the European Union, 2010

4.1 The Italian railways since the 90s

At the beginning of the 1990s, the Italian railways were a double public monopoly: they were monopolists in the supply of railway and transport services and monopolists in the demand of many assets (ranging from rolling stock, to the construction of infrastructure, all the way up to labour, etc.). Monopolists from two points of view, therefore, though atypical: any monopolist worthy of respect tries to exploit the power it wields to his own advantage, selling at prices higher than those he would obtain in a competitive market and buying at prices lower than those he would be forced to pay. Unless there is a strong regulator, he does so successfully. Even in this respect, Italian railways proved to be rather unique: they systematically sold below market value and bought at abnormally high prices.

Through the constitution of the public body “Ferrovie dello Stato”, the government had, only in 1985, allowed FS to be autonomous from the Ministry of Transportation, and only in 1992 was it transformed into a wholly state-owned, joint-stock company. Then, until 2001, FS was permitted to provide for the construction and management of the rail network, cargo and passenger services, local and regional services, and a wide set of activities not closely linked to the core business: in short, it became a monster hiring a huge number of employees, but then it downsized dramatically from over 220,000 to the current 87,000 as part of a major restructuring.

1) This is an update of text written for an earlier book by Mario Sebastiani (CER 2005).

There are various reasons for such a situation, but there is a *causa causans* as a consequence of a vast confluence of interests and, after all, of deep-rooted cultural backwardness. Within Italian society, there was a widespread conviction that rail transport should provide a universal service rather than market services, and that the introduction of market logic would prejudice its "natural" vocation. This tacit social contract turned the railways into a protected sector.

That general perception, furthermore fed by the public nature of Ferrovie dello Stato (FS), made it possible for the role of the railways to be widely considered by Italian society, albeit implicitly, as the providers of subsidized services on behalf of the state, with the subsidies springing from selling services at low prices and buying (labour, infrastructure and supplies) at high prices. Thus, it was a sheltered sector, but also a "protective" sector: a generous sector.

This phenomenon has also been spurred by the asymmetries of European regulations on subsidies and state aid, which, until recently, were tolerant towards the railways while rigid with other sectors. This created the conditions for the state to transfer, through the railways, subsidies in favour of subjects (railways' suppliers and customers) who otherwise would not have been authorized openly to benefit from them. Nor must one forget that until a few years ago (although still partly true today) the Italian state was shareholder of companies that operated on both sides of the market, so that the transactions among them were in a certain way internal to the system, with compensations of costs and of benefits in public finances.

That situation was quite common in many European states until the early 1990s. European railways were generally spared foreign competition, refrained from concretely competing with other modes of transport, encouraged to stimulate only limited forms of cooperation (substantially the exchange of traction at borders) and, at the same time, to promote technological rivalry among national railways – a policy also caused by the national interests to defend supply industries. One would be surprised if the results had been any different.

However, at least several European countries had a strong commitment to developing rail infrastructure, in particular by implementing high-speed networks; in other words, European railways were inefficient in terms of management, but were strengthened in terms of infrastructure. In Italy, instead, public investments in railways were neglected in favour of roads, according to an industrial policy which, in contrast to its stated objectives, aimed at developing private rather than public transport.

It is not by chance that the construction of the high-speed infrastructure started only in the late 1990s. The high-speed/high-capacity link between Turin, Milan, Naples and Salerno, which represents the spinal column of the North–South Italian rail traffic, was completed in December 2009; from then on it has been operating with more than 1,000 km of track. Since December 2009, also the North–East has been part of the high-speed network, linking Venice and Rome.

Over the next few years, the Turin–Milan–Venice segment will be successfully concluded, thanks to the completion of the Treviglio–Brescia, Brescia–Verona and Verona–Padova segments. It is important to underline that the high-speed/high-capacity Italian network constitutes the biggest piece of national engineering work after World War II. It crosses a densely populated urban area, where more than 65 % of people are concentrated in living and working.

Besides the high-speed infrastructure, Italy is finally upgrading its national system by quadruplicating tracks on various regional lines.

As regards the high-speed/high-capacity infrastructure, the government realized that, under the initial project financing approach (40 % public and 60 % private) and given the low profitability of the investment, the whole burden and risk would have been carried by the state. The state would have to commit to guaranteeing private shareholders a fair rate of return on capital invested, both during the construction and during exploitation phases. A new model was therefore introduced under which infrastructure was totally funded by a publicly owned company (Ispa) that was expected to be repaid by future charges coming from the utilization of the infrastructure. In 2005, Ispa was dissolved, in consequence of the concerns shown by Eurostat about the externalization of public funds from the national balance sheet.

Therefore, the Budget Law of 2006 provided for the incorporation of Ispa into Cassa Depositi e Prestiti S.p.a., which was commissioned with carrying out the activities of Ispa. Furthermore, the state planned to grant concessions to FS or to the companies of the group with state funding for 15 years, both for the operation of the high-speed/high-capacity works, as well as for the activities preliminary to the construction of the Genoa–Milan and Milan–Verona projects.

In brief, the Italian rail system at present:

- operates on a network largely unchanged from the early post-World War II period, with little more than 16,600 kilometres of tracks, of which about 45 percent are double track and little more than 71 percent are electrified;
- has a high-speed line that develops connecting all major cities;
- saw its domestic market share nearly halve from 1970 to 2008, to 11.3 percent for freight and 5.1 percent for passenger services. The decline in shares results from a more or less constant absolute volume of rail traffic, in a period in which overall transport demand grew at an unprecedented rate;
- the market for long- and medium-haul passenger services is carried out entirely by FS; on the other hand, Nuovo Trasporto Viaggiatori (NTV – see below) will inaugurate a new service on the principal high-speed lines, in competition with the FS services starting in September 2011;
- local and regional passenger transportation is supplied by FS or by local or regional companies of public property that provide rail services on the basis of contracts with the regions;
- the cargo market is widely managed by FS, but the presence of new entrants is growing and represents an important effect of rail liberalization.

4.2 The reforms

4.2.1 Which model of competition?

As the transport sector as a whole has rapidly grown, the decline in rail transport stems from a failure to compete with other modes. Though there are many models worldwide which try to tackle this problem, they share the premise that change is not only a business issue – i.e. a problem to be handled by business plans, how ever radical and supported by public resources they may be – but requires first of all a substantial revision of the institutional architecture and of the rules of the game, both within the sector and in its relations with other sectors.

The transport market today is characterized by different degrees of openness to competition: after the liberalization of air transport, maritime cabotage and road transport, keeping the railway as a monopoly may turn protection into a cage. Though competition is a powerful

factor in economic development, liberalization of markets may be implemented according to different models, the appraisal of which should follow a pragmatic approach. Indeed, although many different models of rail liberalization have been applied in different countries, competition is ultimately either introduced 'in the market' or 'for the market'.

Competition in the market, as prevails in a number of continental European countries, is better and fuller than that of competition for the market. This is because a solution aiming at continuous competition is preferable to one that guarantees it only "once in a while". Competition in the market matches the public's preferences more closely, establishing between customers and firms a direct contractual relationship. It does not limit the rights of free enterprise, and encourages efficiency by creating direct and continual competition among operators. It is also "fuller", in as much as it also implies competition for the market, since, to be present in a market, one must first enter it, and this requires competing for it.

Consequently, competition for the market is advocated as a last resort, when competition in the market cannot be pursued: essentially in managing infrastructures as natural monopolies and in providing subsidized services. Briefly, competition for the market should apply only in case of natural monopoly and universality of services (when services must be provided to everyone as a matter of public policy).

4.2.2 Legal reforms in detail

Italy has pursued competition 'in the market' for long- and medium-distance passenger transport, and for freight, and 'for the market' for regional and local passenger services. Initially, however, Italy shared the attitude prevalent in European states, to accept only reluctantly the liberalization promoted by the European Union. A fact that is testified by the delays with which the European directives have been transposed into national laws and regulations, by the delays between their formal adoption and the issuance of enacting rules, by the widespread success of "social clauses" and transitional regimes, and by the introduction of clauses of reciprocity.

However, by around 1999–00, market opening was pursued more actively, particularly by Law 388/2000 (which went well beyond the targets set by EU Directive 91/440 and the First Railway Package), granting all community railway undertakings open access to the railway infrastructure to supply all transport services, subject to authorization from the Ministry of Transport and to reciprocity in the case of foreign firms. Likewise, FS, as railway operator (renamed Trenitalia in 2000), lost its monopoly and became a licensed railway undertaking just like its competitors.

Decree Law 188/2003 established how open access was to be achieved in practice (and formally transpose the First Railway Package at the same time), i.e. by:

- giving the right of access to both the regional and national networks (under reciprocity);
- allowing conventional international freight undertakings to access the entire railway, thus surpassing the Union's First Railway Package requirements;
- extending the right of access to the network to any authorized applicant, i.e. any person or legal entity with public service or commercial interest in buying network capacity – for example, shippers, freight forwarders or combined transport operators;
- eliminating long-term contracts for track capacity by substituting them with framework agreements; and

– creating the basis for the elimination of remaining conditions that are potentially discriminatory, by transferring the supply of essential services (such as train formation facilities in freight terminals and stations, and handling goods in terminals) from Trenitalia to the separate infrastructure managers (see below for a discussion of this separation), who may then decide whether or not to subcontract services to other firms, provided that they are independent of rail companies.

Decree Law 268/2004 incorporated the Second Railway Package as regards the interoperability of the conventional Trans-European rail system; subsequently, Decree Laws 162/2007 and 163/2007 adopted the remaining provisions of Directives 2004/49/CE, 2004/50/CE and 2004/51/CE. More specifically, Decree 162/2007 established a National Agency for Rail Safety and Decree 163/2007 introduced some new definitions of the conditions necessary, in phase of plan, building, etc., to realize the interoperability between the national and the Trans-European high-speed and conventional rail systems. The adoption of the Third Railway Package in Italy, that opened to competition the international passenger transport inside the EU and proposed a strengthening of the international passenger rights, the institution of a certification system for drivers and the improvement of the freight rail transport quality, is now in the course of execution.

Theoretically, therefore, and well ahead of the deadlines set by the European Union, it is possible to conclude that the Italian railway sector is an open market; nevertheless, several obstacles remain before effective competition is established, as further discussed below. The outcome of this process can be summarized as follows: 62 licences have been issued to railway undertakings, of which 36 have also been issued a safety certificate. Of these 36, 27 are actually operating. The market share of new entrants in freight is roughly 15 %, while for long- and medium-haul passenger traffic the share of new entrants is negligible. Nowadays, the main incumbents in the freight market are RTC (Rail Traction Company), SBB Cargo Italia, Railion Italia, SNCF Fret Italia, Nord Cargo and Hupac.

For passenger services, competition for the market remains for those services which, as defined by European norms, a firm would not be interested in providing for profit alone and would hence benefit from public subsidies. These include local and regional transportation services, and long- and medium-haul night passenger services. The latter have been temporarily entrusted to Trenitalia while the power to competitively tender a local and regional franchise has been gradually transferred to local and regional bodies, although – except for the cases of Lombardy, Liguria, Piemonte and Veneto – this has not made any progress.

Several reasons explain this delay: first of all, the periphery is often slower and not as well prepared as the state administration; moreover, the matter is tied to the liberalization of other modes of local transport (with the possibility for competitive procedures that relate to more than one mode of transport); and finally, the existence of barriers to entry, starting with the difficulty of procurement of rolling stock and protective labour legislation, often providing guarantees to preserve the present employment levels and requiring the same contractual conditions as those given to the incumbent's employees.

On the long-distance connections, the Italian model of rail liberalization foresees competition 'in the market' and the first private service on the Italian high-speed rail network will start in September 2011. This is the largest private investment in the European high-speed rail market (more than €1 billion) and it will be operated with a fleet of 25 trains under the name of "Italo" by NTV. NTV was founded in December 2006 by a group of private entrepreneurs, who were

joined in June 2008 by Intesa Sanpaolo for Imi Investimenti, Generali Financial Holdings FCP-FIS, A. Bombassei and SNCF/VFE-P SA, and in January 2009 by I. Seragnoli.

Since December 2009, a joint venture between OeBB/DB/LeNord provides several international passenger services between Germany/Austria and North Italy in direct competition with Trenitalia.

4.2.3 Restructuring Ferrovie dello Stato

Along with the opening of the market, FS has been restructured, with two concomitant aims:

- the need to comply with the EU obligations to provide for a sound financial and economic base for the infrastructure manager (taking account of the infrastructure's maintenance and investment costs) and to abolish subsidies to Trenitalia unless justified by public services obligations; and
- the allocation of the most sensitive functions in terms of competition to an entity which is autonomous from the incumbent railway operator. A regulatory body called for by European norms, was also formed, as we discuss below.

The reorganization of FS was required by two directives of the Prime Minister (in 1997, and again in 1999), requiring among other things:

- the corporate separation of the infrastructure manager (RFI) from Trenitalia[2)];
- the subdivision of Trenitalia's activities into four departments: long- and medium-haul passengers, freight, local and regional transport and a unit for technology and rolling stock (UTMR)[3)];
- the achievement of economic recovery objectives and quality standards comparable to European levels;
- a pricing policy based on the price cap;
- a strong effort to increase traffic.

All of these targets have been achieved except the last, which was indeed the final objective. From the economic and financial points of view, between 1997 and 2001, a radical turnaround was in fact realized through the restructuring described above, the optimization of procurement and contracts, the renewal of rolling stock, an increase in labour productivity, as well as through a further reduction in the number of employees and the divestment or the optimization of non-strategic assets.

The state's role was to guarantee the resources needed for investments and maintenance of infrastructure and to take over the costs of the employees' early retirement program. At the same time, the management of FS became increasingly free from political and labour union interferences, thanks not only to the newly appointed managers but also to the governments in power, starting from the mid 1990s. FS actually followed an unusual path as monopolists, promptly complying with the government's directives, aware that only market openness would remove the obstacles to the firm's recovery and development.

The results are highly visible: as early as 2001, both infrastructure and transport activities complied with the directives of the European Union regarding the economic and financial

2) In fact, formally speaking, the former FS was transformed into RFI, which in turn became FS Holding Group of which Trenitalia is a subsidiary.

3) At present, UTMR is no longer a department.

equilibrium. It should be pointed out, however, that the improvements were carried out principally by controlling costs and (in 1999-00 and 2007-09) by raising passenger tariffs; traffic itself hardly increased at all. Furthermore, Trenitalia's profitability has been reduced by substantial and structural losses in the freight division, indirectly subsidized by passenger transportation. This raises delicate problems for competition, taking into account that the company is a *de facto* monopolist in long- and medium-haul passenger transport and still legally a monopolist in local transport in almost all of the country's regions.

The role of the infrastructure manager was assigned to RFI as state concessionaire. However, RFI is fully controlled by FS Holding, which also owns Trenitalia. The Italian solution was thus an accounting separation rather than a formal separation of ownership.

There are potential conflicts of interest between RFI being entrusted with public powers in guaranteeing fair competition, whilst remaining part of a group which owns the incumbent; a point which will be referred to later. The sensitive functions, in terms of competition, that RFI carries out are essentially:

– elaborating and providing the network statement;
– allocating infrastructure capacity among the various applicants;
– developing network capacity and technologies, which may potentially favour the incumbent belonging to the same group; however, it must be pointed out that the former one is subject to approval by the Committee of Ministers for Economic Planning (CIPE) and the latter will always be more bound by the European interoperability and safety regulations.

4.2.4 The Ministry and Government

The Ministry of Infrastructure and Transportation performs several functions. Firstly, the *Rail Transport Head Office*, coordinates investment policy, regulates the issue of licences of railway undertaking, regulates infrastructure access charges and passenger tariffs, sets the quality standards of regulated services and infrastructures, directs and watches over the National Agency for Railway Safety activities, and defines the norms and standards for interoperability.

The National Agency for Railway Safety is responsible for the technical regulations on railway safety, checks the application of rules, authorizes and ratifies systems, subsystems and components, issues safety certificates to rail operators, and grants safety authorizations for infrastructure managers.

Secondly, the *Office for Regulation of Railway Services*, reports directly to the Ministry and embodies the tasks of the regulatory body provided by EU legislation. This body provides for regulatory guidelines and enforces the observance of fair competition by RFI. Specifically, it carries out vigilance over RFI as regards compliance with principles of transparency, equity and non-discrimination; it also decides on complaints regarding the allocation of capacity, safety certifications and all aspects of norms and safety standards. It should be remarked that several tasks entrusted to the regulatory body may overlap with those of the Antitrust Authority. It is important, therefore, to define better their respective competencies.

Finally, CIPE approves investment plans for the national railway network, infrastructure charges and transport tariffs for services subject to regulation, i.e. medium- and long-haul passenger traffic.

By way of conclusion, in terms of functions sensitive to competition, the following picture emerges:

– the issuance of railway licences, the rolling stocks validation, the safety certification, the determination of charges and tariffs, the vigilance on discrimination among railway operators have been assigned to public bodies;
– the allocation of capacity and the supply of a set of additional services, all relies on the infrastructure manager.

In conclusion, RFI has to comply with the prescriptions of the Ministry and the National Agency for Railway Safety and has enacted a 'Chinese Wall' procedure to avoid interference from Trenitalia. Then, at least in theory, RFI seems sufficiently protected from interference by the holding company it belongs to. Despite the considerable concentration of functions on RFI, the framework depicted conforms to EU prescriptions and, presently, the substantial autonomy of the infrastructure manager from FS appears to be confirmed by a minimal number of complaints.

4.3 Further steps and shortcomings

According to the Organisation for Economic Co-operation and Development (OECD), the liberalization process, though starting late, brought Italy ahead of most European countries[4], "almost the only country in Europe to have completely liberalized all railway transportation segments"[5]. Actually, at least in theory, Italy is ahead of almost all major European continental countries, except for Germany.

The above discussion has cast some doubts on the effect of the reforms in practice, which, at least to date, has not helped improve the market share of rail. Three elements are missing, or only weakly addressed in the reforms, and, taken together, may in the long term mark its failure. These are the rules for intermodal competition, the role of the state and, finally, the relationship between RFI and Trenitalia.

4.3.1 Competition between the modes

It is commonly recognized that even if all the legal restrictions have been abolished, the rail sector in Italy remains full of barriers to competition: non-availability of rolling stock, lack of secondary markets and of interoperability, decreased costs, strategic reactions of incumbents and state subsidies (whether declared or hidden). The main hurdle, however, is the weakness of demand, since the actual contestability of a market depends first of all on its growth perspectives. Lacking this condition, competition risks being a "zero sum" game and may abort due to the barriers raised by the incumbents. As the transport sector as a whole has grown strongly, the main obstacle to the development of railways is competition from other modes of transport, primarily road freight.

Road freight is generally less expensive than rail, especially when the cost of time is included. Its price structure is more flexible, with lower indivisibilities and entry/exit costs. However, prices do not incorporate external costs, and thus road haulage firms often benefit from more or less hidden subsidies and from lack of compliance with labour and safety norms. They also pay access charges for the use of infrastructures which are very low. Competition in road freight is extremely intense and, in spite of widespread inefficiencies, it results in downward

[4] OECD, Regulatory Reform in Italy, March 2001, p. 4
[5] Ib., p. 93

price pressures. As a consequence, road freight is the price maker, whenever there is room for competition among the two modes of transport. In this way, it can often be the case that railways must operate at a loss or leave the market.

Rail freight traffic in Italy carried only 11.7 percent of inland freight traffic in 2008. To increase this share significantly, the rules of the competitive game between road and rail freight must be reformed, by means of a strong policy coherent with the declared target of intermodal equilibrium. According to the strategy designed by the Commission[6], the support for railway transport must be coupled with steps to reduce the distortions of intermodal competition; stemming partly from a price system which does not reflect the total social costs of the different modes. The Commission specifically proposed a reform of the access charges to all transport infrastructures based on the marginal social cost, in order to internalize external costs of the various modes of transport. Without that step – *inter alia* – there is no room for rail to compete with road freight.

Few actions to increase rail's modal share have been implemented in Italy. The inauguration of the high-speed network, the consequent increase of the rail capacity and the decongestion of the more critical segments constitute an important step for the preservation of the current share of freight traffic. But this is not enough.

It may appear paradoxical that freight traffic is the most dynamic segment in terms of competition: unfortunately, it's just a matter of competition within the railway sector itself, by which demand is diverted from Trenitalia to other new railway firms, but this does not imply creation of additional traffic. Furthermore, competition is developed only on the most profitable segments, leaving the state incumbent with the obligation to provide the services that are less profitable.

In 2006, the Italian Government allocated subsidies for combined transport, mostly aimed at directly sustaining demand. This is undoubtedly a useful step, but reducing the costs of railway transport is not sufficient to reverse its decline. Other elements are also needed: a policy setting prices that are coherent with total costs (internal and external) of the various modes of transport, intermodal terminals which allow freight to switch modes, better logistics (which Italy lacks much more than its European competitors), alliances and substantial market consolidation, even at the expense of pluralism, which today is little more than cosmetic: competition actually requires the survival of the contenders. This calls for coordination among national antitrust authorities across Europe.

4.3.2 The role of the state

The system of public functions in the transport sector is intricate, inefficient, non-transparent and subject to conflicts of interest. Here more than elsewhere, the Italian state appears to have many identities: it is a shareholder, grantor, investor, guarantor of users, employees, suppliers, taxpayers; furthermore, and more generally, it is responsible for public finance equilibria. Each of these souls carries conflicting objectives, among which it is obliged to mediate, not always coherently with the alleged priorities, such as competition.

Of course, that condition is rather common, since in all countries the state joins potentially conflicting functions and the search for a balance among contrasting interests is the primary

6) European Commission, 2001, White paper - European transport policy for 2010: time to decide

ground of politics. The Italian peculiarity is not represented by the many functions assigned to the state, but by the identification of the "state" with the "government", especially due to the lack of a bureaucracy having the necessary autonomy and continuity, enabling it to assert itself. Furthermore, the functions institutionally delegated to the competent ministries are watered down by the government as a whole, with a complex regulatory chain perhaps unknown elsewhere.

An appropriate example to explain the confusion of roles and the resulting inactivity can be drawn from the procedure to determine the tariffs for long- and medium-haul passenger services. On the one hand, the regulatory reform of tariffs, which took place in 1999, led to the introduction of a fundamental principle: the recognition of the firm's right to earn a reasonable market rate of return on capital invested. The reform appears important as profits are required to fund investment in rolling stock, and also, in the long run, to attract capital from private investors. In most European countries, the prices for long- and medium-haul passenger services are not regulated, except sometimes via ex post control by governments. In Italy, instead, tariffs are strictly regulated by price cap. Though, as argued above, the Italian approach is correct in principle, taking into account that Trenitalia is still *de facto* a monopolist, pricing regulation should not prevent the company from carrying out effective marketing policies – as it actually does in Italy. On the other hand, the increase of tariffs was allowed only in 1999–00 and then 2007–09; in the meantime, it was frozen without providing official reasons and infrastructure charges rose. Trenitalia could not pass this additional cost on to the customer until 2007, when an important increase in passenger tariffs took place.

Under this aspect, other European railways can claim points in their favour since (i) they enjoy a greater degree of freedom in pricing, thus setting market-oriented – not policy-oriented – tariffs, (ii) the accomplishment of the decisions on tariffs taken by the regulatory body is not made uncertain by the political cycle "tyranny", and (iii) the tariffs presently charged exceed those of Trenitalia.

In a liberalized context, competition operates not only through prices but also through investments, provided that adequate profit margins are achieved. The equal opportunities, which the liberalization should aim to allow and the regulator should guarantee, should not paradoxically be denied by a shareholder who acts as guarantor of the policies to contain inflation.

An independent regulator could play a role here. However, in the Italian political and institutional system, independent authorities have never been very popular: political supremacy refuses the notion of the existence of autonomous organisms that can avoid the dispositions of the government in office. For instance, a proposal made in 1995, to constitute an independent authority for transport, was aborted following the position taken by the Parliament Commission, which felt that the time was not ripe. Even the General Plan for Transport of 1999 was quite prudent, perhaps intentionally intricate, in relaunching the proposal. And there is no other way to explain why even the non-autonomous bodies, whose aim is to regulate the various segments of the transport market, are left – for lack of personnel, professionalism and financial resources – unable to operate efficiently.

4.3.3 Relationship between RFI and Trenitalia

In the last few years, the debate regarding the organization of the Italian rail system has almost entirely centred on integration vs. full proprietary separation of RFI from FS: a debate that has

seen the former choice prevail in the government. The supporters of full proprietary separation advocated this as the only way to guarantee the independence of the infrastructure manager from the main operator. Those supporting the other solution stress its industrial advantages.

The basic reason why the European Union preferred to allow the states to introduce different degrees of separation is to allow flexibility to combine the safeguard of competition with industrial necessities, especially with a view to the need of raising investments in infrastructure and stimulating recovery efforts of the firms. The advantages of integration consist in larger economies of scale, reduced costs for information and transaction and coordination of investments both in capacity and technologies. These advantages become even more apparent in the event that the infrastructure manager and the incumbent agree to "take or pay" contracts – under which the buyer pays [MSOffice1]even if he does not use the network – or to long-term framework agreements, both aimed at guaranteeing return on infrastructure investments.

The key question is whether these industrial advantages are automatically transferred to all competitors or whether they benefit the incumbent only. In other words, discrimination could result from maintaining unitary ownership. Benefits accruing to the infrastructure manager are probably shared (for example, economies of scale are reflected in lower charges, optimization of the capacity of the network provides greater spaces for all operators). This is probably not the case, at least not automatically, as far as benefits accruing to the integrated operator are concerned, such as those deriving from technological co-operation. Theoretically, even the investments in capacity could be planned according to the priorities of the integrated operator, by developing the lines on which it plans to increase its services and by reducing the development of others, whenever it wants to discourage other competitors from entering. One should note, however, that discriminatory behaviour of the type mentioned above seems improbable, since investments in infrastructures are financed with public resources all over Europe and are therefore planned based on government instructions.

However, in order to contribute to the benefits of integration spreading and to reduce the risks of *"ad excludendum"* collusions, the infrastructure manager should enact procedures of consultation with all the existing operators, also regarding investment in capacity and technologies. Better yet, it should consult with associations that represent railway firms, taking into consideration that the firms already present may be motivated to keep the status quo of the infrastructure as a barrier to competitors entering. At the same time, Member States should require infrastructure managers to achieve certain objectives and incentives, such as to encourage them to maximize the degree of utilization of the network's capacity, thus creating conditions for contrast of interest between them and rail operators they are integrated with.

One must not forget that new entrants enjoy benefits different from those of incumbent operators. Incumbents have inherited the burden of the past, though this is destined to disappear over time. In short, latecomers not only experience disadvantages in terms of positioning on the market but also the advantages of being able to start operations without being conditioned by the past.

Finally, proprietary separation among the two subjects is imperfect whenever both the infrastructure manager and the rail operator are publicly owned. Until privatized, both the train operator and the infrastructure manager will be owned by a single shareholder (the Ministry of Economics and Finance, in Italy), thus maintaining a common umbilical cord not exempt from partisan temptations.

Source: Railway Gazette International

5 Sweden[1)]

Gunnar Alexandersson and Staffan Hultén

Area (km²) 450.295

	2008		2008
Population on 1/1/2009 (million)	9.3	Freight tkm (billion)	23.1
GDP (€ billion)	328.1	Passenger-km (billion)	11.0
Length of line (1000 km)	11.0	Modal share – passenger (%) Modal share – freight (%)	9.3 % 36.2 %

Source: Eurostat, Statistical Office of the European Union, 2010

5.1 Introduction and overview

The Transport Policy Act of 1988, with its ground-breaking split of railway infrastructure from operations, is commonly considered the starting point for the transformation of the Swedish railway system – from a vertically and horizontally integrated monopoly to a market characterized by decentralization and intramodal competition.

Until 1988, the Swedish State Railways (SJ) was a state-owned business administration with a monopoly position on both freight and passenger rail services, protected from competition by means of laws and regulations (Table 1). SJ was responsible for and controlled all aspects of the railway services, and was also involved as owner or co-owner in supporting businesses such as ferry traffic, long-distance bus services and forwarding agents. For the passenger services, an overwhelming majority of lines were run by SJ under its own account. For those passenger services that were unprofitable, but considered important for socio-economic and political reasons, parliament granted SJ the amount of money it demanded to cover the deficits. On a limited number of passenger lines, SJ worked as the contracted operator to regional (county level) public transport authorities.

In the year 2010, the rail infrastructure is owned and maintained by a national authority, Trafikverket, which also handles the train traffic control function. Public procurement by competitive tendering is being applied on almost all the unprofitable lines, which make up the

1) The authors would like to thank Trafikverket (formerly Banverket) for financial support to carry out the research presented in this chapter.

majority of all the railway system. SJ has been broken up into several specialized companies, many of which have been privatized, while others remain state-owned. One of these, SJ AB (SJ Ltd), continues to be Sweden's biggest passenger train operator. SJ still runs services under its own account, but is also operating under contract to regional and national transport authorities. The market for freight services is completely deregulated, with the exception of Green Cargo AB, the successor to SJ's freight division, still dominating this market. The only part of the railway transport market where SJ still holds a legal monopoly concerns inter-regional passenger services that the company considers can be run at a profit. The current reform process (2009-2010) also aims at opening up these railway lines to competition, with full effect as from December 2011. The evolution of the regulatory structure is shown in Table 1.

Part of market	1988	2008	2010–2012
Passenger services			
Regional (non-profitable)	SJ holds monopoly and receives subsidies	Procurement of gross cost contracts by competitive tendering (competition for the tracks)	Procurement of gross or net cost contracts by competitive tendering (competition for the tracks)
Regional (profitable)	SJ holds monopoly	Some exclusive contracts (for SJ and A-train)	Procurement paired with possibility for competition on the tracks
Inter-regional (non-profitable)	SJ holds monopoly and receives subsidies	Procurement of net cost contracts by competitive tendering (competition for the tracks)	Procurement of net cost contracts by competitive tendering (competition for the tracks)
Inter-regional (profitable)	SJ holds monopoly	SJ holds monopoly	Competition on the tracks
Freight services	SJ holds monopoly	Open access on all lines (competition on the tracks)	Open access on all lines (competition on the tracks)

Table 1: Regulatory structure of the Swedish railway sector (overview of development)

5.2 A history of reforms [2)]

Regulatory changes in the railway sector have often emanated from the wish to come to terms with the recurrent financial difficulties of SJ. Starting in the 1950s, when car ownership began to increase rapidly, SJ has been facing the problem of unprofitable passenger railway lines. Since line closures were difficult to implement due to political concerns, the problems eventually led to the introduction of state subsidies for non-profitable lines. In the Transport Policy Act of 1963, SJ's network was separated into one commercial part and one subsidized part.

[2)] This section draws partially from Alexandersson et al (2000) and Nilsson (1995).

In the Stockholm region, SJ's local train services were experiencing increasing problems of profitability by the early 1960's despite high levels of patronage. Discontinuation was even considered, transferring passengers to SJ's more profitable bus services. From a regional perspective, the continuation and expansion of these local train services were believed to be vital for the growing population of the city and its suburbs. Therefore, an agreement was reached in 1964, followed by a contract in 1966, whereby SJ for the very first time became a contracted operator of railway services to a regional authority.

Continued deterioration of SJ's finances during the 1970s, due to increasing operating costs, decreasing revenue (primarily from freight services), and political barriers to line closures and price hikes, resulted in a situation where fundamental changes seemed necessary to deal with SJ's problems. The Transport Policy Act of 1979 was to some extent a response to this development. The Act aimed at adjusting the cost burden between competing modes of transport in a way that infrastructure costs reflected marginal social costs. This was expected to stimulate the usage of railways, which typically have low marginal costs. One of the most important ingredients of the Act was the creation of a new institutional structure for local and regional public transport – the so-called County Public Transport Authorities (CPTAs). Although primarily concerned with bus services, several CPTAs also became directly involved in decisions concerning local and regional railway lines threatened by closure. Similar to the early case of Stockholm's commuter trains, SJ thereby became a contracted operator on some of these lines.

SJ's financial problems continued into the 1980s. A resulting Railway Act of 1985 aimed at reducing SJ's deficits. The state took an increased responsibility for the infrastructure investments. In return, SJ was to separate its accounts for infrastructure from other businesses and begin to pay track access charges. Despite these actions, SJ estimated a need for 1 billion SEK[3)] in additional state grant in 1986 to continue operations. This led the government to initiate a process that would result in the Transport Policy Act of 1988. Its major feature was the vertical separation of infrastructure from operations. The state took full responsibility for railway infrastructure investments and maintenance by means of a new authority (Banverket), while SJ would transform into a train operating company, paying track access charges based upon marginal costs for maintenance. Infrastructure investments were to be evaluated by means of socio-economic calculations. Among its several other components, the Transport Policy Act of 1988 also marked a general policy step in the direction of extending the responsibility of the CPTAs to unprofitable regional railway services. In return, the CPTAs were compensated by state subsidies equalling SJ's operating deficits on these lines, and the rolling stock was transferred to the CPTAs.

Deregulation of the railways in terms of increased intramodal competition was not explicitly mentioned in the Act. Nevertheless, the vertical separation of infrastructure from operations, combined with the decentralized responsibility for regional railway services to regional authorities (along with the necessary money and rolling stock), made public procurement by competitive tendering possible. Some regional authorities had already tried tendering procedures for their bus services, as a result of previous reforms in that sector. The outcome of the initial round of tendering of regional rail services was BK Tåg, the first new entrant for more than 40 years in 1990.

3) Adjusted for inflation this amount corresponded to about €176 million in 2009.

After a shift in power in parliament in September 1991, a new centre-right-wing government declared its objective to open the railways to more competition. The first step was to subject more railway traffic to tendering. When SJ lost responsibility for track infrastructure, it had been directed only to perform *profitable* train services under its own account. While large parts of the *unprofitable* services were run on the regional lines and therefore under the responsibility of the CPTAs, many services of the inter-regional main line network were also unprofitable. Since 1988, the state had been procuring these services by means of annual negotiations with SJ. In 1992, following the experiences of tendering of regional services, a regulatory change made it possible also for the state's negotiator to use competitive tendering when procuring services on the inter-regional lines.

In May 1994, a bill on a far-reaching deregulation was passed in parliament, but it was quickly postponed when the Social Democrats regained power in parliament through the election in September the same year. Instead, a less radical reform was suggested, coming into effect in July 1996. The functions of allocation of track capacity and train traffic control were transferred from SJ to Banverket, while other common facilities were to be available for other train operators under commercial but non-discriminating terms. CPTAs' rights were extended, making it easier for them to replace reductions in SJ's supply of inter-regional trains with regional CPTA-managed services. For the freight services, open access on the whole network was introduced, based upon the belief that these services would stand better chances against other modes of transport if they were forced to adapt to what the market wanted. Actual access to capacity was only limited by a "grandfather clause", giving an operator the right of precedence to a timetable position it had used before. In practice, this rule was rarely (if ever) enforced, and was eventually abandoned in 2004.

A new Transport Policy Act was passed in 1998. In an effort to achieve more equal terms for competing modes of transport, in particular concerning freight, the track access fees were lowered. In order to make entry easier for freight operators competing with SJ, some fringe railway lines that had remained in SJ's hands were transferred to Banverket. Moreover, a new national authority, Rikstrafiken, took over the tasks of the former state's negotiator, becoming responsible for competitive tendering of unprofitable inter-regional public transport services, aiming also at better co-ordination with the CPTA-tendered services. Following the inflow of new operators in 2000, a new Act was passed with the objective to facilitate for SJ to compete under the new circumstances and to ensure equal access to functions and services for all operators. SJ's organizational structure as a single-business administration was therefore replaced in 2001 by several state-owned companies concentrating on specified parts of the railway business. The passenger division formed one company (SJ), the freight division another (Green Cargo), and so on for real estate (Jernhusen), maintenance (EuroMaint and SweMaint) and other businesses. Two divisions, TraffiCare (cleaning services) and Unigrid (computer information systems), were fully privatized a few months later, followed by EuroMaint and SweMaint in 2007.

After the Act of 2000, regulatory changes in the Swedish railway sector advanced at a slower pace during the next eight years. In 2003, the state had to intervene by means of transferring a substantial amount of money (1.8 billion SEK[4]) to SJ AB in order to avoid bankruptcy and increased its borrowing rights at the National Debt Office[5] from 1 to 2 billion SEK. It was believed that the breaking-up of SJ into several separate companies had been an under-

[4] This amount corresponded to about €183 million in 2009.

[5] This Swedish agency manages central government debt and provides state guarantees and loans.

financed reform, and that several of SJ's contracts for regional and inter-regional passenger services were unprofitable because SJ had won the tendered contracts with too low bids. The reforms in the following years focused on modernizing laws and regulations to achieve a regulatory framework in accordance with European Union directives. Following the European Commission's first railway package, a new Railway Law and a new Railway Regulation were implemented in 2004, regulating access to the state's railway infrastructure and establishing a new regulatory body.

In 2006, SJ lost its monopoly on night trains and chartered trains. These changes constituted a first move towards the creation of a new framework of competition on the track for commercial services. The new centre-right-wing government that took office in 2006 decided in 2009 to complete this process, by means of three additional steps. The first step was to open up the market for passenger trains running on weekends, beginning in July 2009. In a second step, operators offering international passenger services (including cabotage) were allowed from October 2009, in order to comply with EU directives. The third and final step will be implemented in October 2010, when competition on the track will become possible for all domestic passenger railway services, with full effect as from December 2011. Thereby, all of SJ's remaining monopoly rights will be removed.

Parallel to this, there has also been a recent reform process affecting the governance of rail infrastructure. Following a government proposal in 2009, Banverket was merged with the corresponding road administration Vägverket to form the new Trafikverket in April 2010. The idea behind this is to take advantage of synergies between the organizations and facilitate infrastructure management that goes beyond and across the traditional boundaries of each transport mode, especially in investment. Related to the formation of Trafikverket, some business units of Banverket and Vägverket were divested and corporatized. For example, this was the case with Banverket Production, forming the new company InfraNord in January 2010.

5.3 The current framework

In the current framework of the Swedish railway market, the national authority Trafikverket owns and maintains the state's railway infrastructure – 80 % of all railway line kilometres. Regional authorities own two lines in the Stockholm region, and several minor fringe lines are owned by factories and municipalities.

There are about 500 passenger railway stations. Many are very simple, platform-only stops (controlled by Trafikverket), with no special buildings or facilities for passengers. Some stations are owned and maintained by regional authorities, being used only for local and regional services. About 170 stations are equipped with station buildings on separate estates. Of these, 150 are owned by the state-owned real estate company Jernhusen. In addition to this, there are a large number of terminals and facilities used primarily for freight services, owned by several different actors. Jernhusen is the primary owner of buildings used for maintenance of rolling stock. Several firms carry out maintenance work, although EuroMaint and SweMaint are the dominant providers of these services.

The Train Traffic Control unit within Trafikverket monitors all train movements on the Swedish railway network. The organization is also responsible for coordinating the operators' wishes to

run their trains. The objective is to find solutions that meet these wishes in the best possible and non-discriminatory way. The end result of this process is the granting of certain timetable positions ("slots") to each operator, and the production of a corresponding national timetable. Much work was done at Banverket with the objective to find better ways of allocating track capacity. Track capacity constraints are perceived to be relevant on a large part of the Swedish network. It is rarely the case that two or more operators compete for exactly the same timetable position, but it is very common that partly conflicting demands have to be handled by means of planned delays compared to the shortest possible time needed for a particular train. In the near future, a new model is expected to be introduced that will make it possible to evaluate different operators' needs and priorities, and handle conflicting demands for capacity. This will become a much more important issue when the domestic passenger market is fully opened.

One key authority is the Swedish Transport Agency. Formed out of the old Railway Inspectorate (and later the Swedish Rail Agency), the authority is the regulatory body responsible for regulations, permits, safety issues and related supervision of other market actors. Any operator wishing to operate train services on the Swedish rail network needs to apply for a licence from the Agency. It has also been assigned tasks such as monitoring that capacity allocation, being handled in a competition-neutral and non-discriminatory manner.

The CPTAs are important players in the market, since they account for much of the procurement of railway services. Generally, they also provide their contracted operators with the necessary rolling stock for these services. Most of the CPTAs jointly own a rolling stock company, Transitio. Firms competing for inter-regional services procured by Rikstrafiken may hire vehicles from the company ASJ (the remains of the business administration SJ), where the leasing contracts of the rolling stock are being handled. Freight operators generally have their own rolling stock. The market for freight vehicles is comparably well developed, in particular for wagons but increasingly also for locomotive power. The vehicles are more standardized than the rolling stock for passenger trains, and independent private wagon owners have been established in the market for quite some time.

Currently, about 20 train operating companies use the state's rail infrastructure, most of them being rather small. Eight companies provide railway passenger services, but the state-owned company SJ continues to be the dominant operator. Firms like DSB First, DB Regio, Veolia Transport and Tågkompaniet are gradually increasing their traffic volume and are important competitors in the market. The pioneering new entrant BK Tåg was, until its bankruptcy in March 2005, an innovative entrepreneurial railway operator. In terms of passenger kilometres, SJ's market share has fluctuated from 71 to 85 percent during the past decade, depending on the outcome of competitive tenders.[6)]

The state-owned Green Cargo, formed out of the former freight division of SJ, is the largest rail freight operator, with a market share of roughly 70%. MTAB, a subsidiary to the state-owned mining company LKAB, is the second largest operator, carrying out the transport of ore on the Iron Ore Line. TGOJ is another important freight operator, but is a subsidiary to Green Cargo. Although there are several minor private freight operators, only a few (like Tågåkeriet and Hector Rail) actually compete with Green Cargo and TGOJ for the same contracts.

6) SOU 2005:4

The state-owned operators enjoy an increasing degree of freedom from their owner, at least in terms of commercial and short-term decisions. Some members of the board, and the CEOs, are appointed by the government. When it comes to Trafikverket, the authority's freedom of action is more restricted. All long-term plans for investments and re-investments have to be approved by government, in accordance with parliament's decision regarding the national budget. The general director of Trafikverket is appointed by the government.

5.4 Competition within the rail market

Competition has gradually been introduced and spread in the Swedish railway markets, beginning with tendering of some regional services in 1989. In the market for inter-regional services, despite being tendered since 1992, the break-through for competing operators did not happen until the year 2000.

The basic model of competition in the market for passenger services from 1990 to 2009 has been competition "for the tracks". Once a contract is won in a tender, the winning firm becomes the sole provider of the specified services during the contract period (i.e. the contract is exclusive). There are two main types of contracts in use. For the CPTA-managed services, gross-cost contracts are dominant. The operators bid for the lowest amount of subsidy needed to cover the costs (including a profit) of operating the services. The CPTAs are responsible for planning and marketing the services and generally take all the revenues from ticket fares during the contract period. Systems of penalties for delays, etc. are commonly used. Contract periods vary between 3 and 8 years, but there is often a clause making it possible to prolong the period if the relationship works fine.

The other type of contract used is the net-cost contract, generally used by Rikstrafiken for the contracts of inter-regional services. The bidding firm has to project and take the risk on both the costs and the revenues from fares during the contract period, bidding for the minimum amount of subsidy needed to cover the deficit to run the services. During the contract period, the operator sells tickets and collects fares, and generally has more freedom to influence the services than under a gross-cost contract. Contract periods now currently cover 5 to 8 years.

Turning to the freight services, the first new entrants appeared in the early 1990s. Generally, these were minor freight operators working as sub-contractors to SJ. In 1993, the state-owned ore company LKAB became the first company to get its own operating licence on the state's railways. Since 1996, the model primarily in use for the railway freight sector is one of "open access" or competition "on the tracks". Initially, competition was mainly aimed at making Green Cargo lower its prices, rather than actually switching to another operator. Today, even if Green Cargo is still the dominant player, a number of new firms seem to have found their niches either as competitors or providers of new services.

5.5 The 'interface' between infrastructure and operations

Every train operator wanting to operate on the Swedish national railway network has to have a track access agreement with Trafikverket, covering details on the type of traffic and the standards of the tracks. Such contracts also include articles stating that both parties should aim at upholding safety issues and work to minimize disturbance and delays, etc. Currently, a framework is being developed for introducing more incentives to both Trafikverket and the

operators to work for the achievement of a better quality of services. This is part of Sweden's implementation of a performance regime in accordance with EU directives.

In addition to the track access agreement, an agreement on timetable positions must also be reached with the train traffic control unit at Trafikverket. Apart from these agreements between the operator and Trafikverket, the operator is also required to get its vehicles approved and obtain a licence from the Swedish Transport Agency.

For its use of the tracks, the operator pays track access charges to Trafikverket. There are also separate charges for the electricity used by electric powered trains. The main principle behind the track access charges is that they should equal the incurred marginal costs of Trafikverket in terms of track operation and maintenance. In 2008, the total income from track charges amounted to 514 million SEK, corresponding to 12% of Trafikverket's total funds directed to track infrastructure operation and maintenance. The government has declared that this amount should double until 2013.

All parts of the network have been subjected to classification, resulting in defined track standards for each line, published by Trafikverket in its Network Statement. Trafikverket is then responsible for upholding such a standard as long as the line carries a suitable supply of train services.

5.6 State measures accompanying railway reform

Since the vertical separation of rail infrastructure from operations, there has been a substantial surge in public spending on infrastructure investments and renewal. Setting up the national authority Banverket made it much easier to increase public spending on the railways, since all the money was channelled to a national authority rather than to a specific operator. The split included an agreement implying that the state committed itself to spending at least 1 billion SEK per year on infrastructure investments while SJ would concentrate on becoming an efficient railway operator. During the early 1990s, SJ launched its tilting fast train X2000, pushing Banverket to direct much of the investments towards upgrading the tracks for higher speed.

During the recession of the early 1990s, public spending on infrastructure investments increased even more to about 3 billion SEK per year. Environmental concerns and political objectives of achieving sustainable development have raised the level to about 10 billion SEK per year. In contrast, the state has decreased the subsidies to unprofitable railway lines (partly due to more subsidies going instead to ferry lines and air connections). After many years of hesitation, the state committed itself to direct subsidies of 4.5 billion SEK between 2004 and 2015 to CPTAs investing in new rolling stock.

In terms of public spending on infrastructure, the railways have probably been favoured compared to other modes of transport during the reform process. Environmental issues, but also the relative safety of the railways, have often been motivating this. A common political objective has been to achieve similar and competition-neutral conditions for different modes of transport, and, in particular, that all modes should bear the costs of their external effects. Changes in taxation and track charges have often been used as instruments to achieve this.

One particular event that affected the passenger railway services was the deregulation of long-distance buses during the 1990's. Before 1993, SJ was able to block any new entrant wishing

to start a long-distance bus line, unless the bus operator could prove that SJ's services would not be harmed. In 1993, the burden of proof was reversed, making it necessary for SJ to prove its point in each case. In 1998, these restrictions were finally abolished.

5.7 Development of production, demand and prices

The restructuring of the Swedish railway sector coincides with several improvements in measurable figures, although the cause-and-effect relationships are not always clear. The transport volumes (in terms of passenger-kilometres) increased on average by 65 % between 1988 and 2008, primarily driven by very strong demand for regional (subsidized) services. For the all-commercial freight sector, the corresponding figure (in tonne-kilometres) went up by 24 %. During the same time, the number of employees in the sector has decreased by 30–40 %. Consequently, labour productivity has increased substantially. Banverket has also improved labour productivity in recent years. For two of its monitored parameters, total delays and maintenance costs per track metre, the overall development is disappointing. However, these figures must be viewed in context of the large increase in transported volumes. In the wake of the financial crisis, rail passenger transport has managed to uphold its positive development while rail freight suffered a sharp decline in 2009 (see Figure 1).

By means of competitive tendering of passenger services, the procuring authorities have been able to achieve reductions in the need for subsidies by about 20 %. Services threatened by

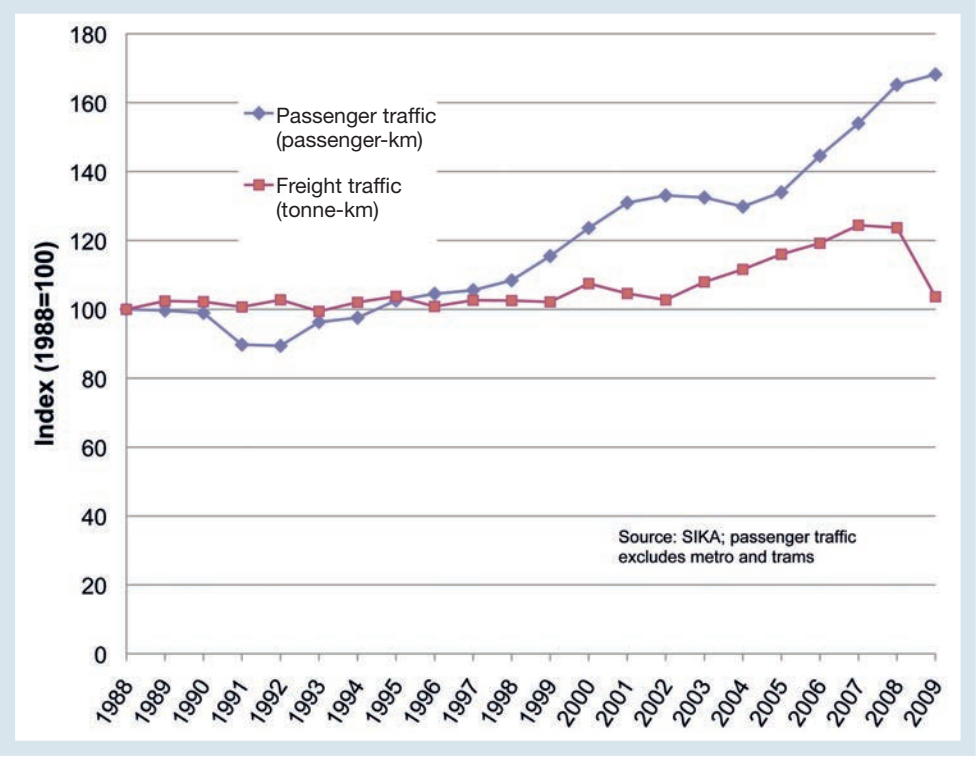

Figure 1: Development of rail passenger and freight traffic in Sweden 1988–2009

closure have thereby often been possible to keep or even develop without additional costs. In a few cases, however, strategic or unrealistic bids have resulted in contracts not being possible to fulfil.[7)]

It is difficult to assess the effects upon quality and prices as perceived by passengers. It is clear that more services are being provided, and the introduction of faster trains during the 1990's (combined with upgrading of the tracks) has resulted in shorter travel times. According to some studies, ticket prices increased much more than comparative price indices 1988-2003, although there is variation depending on the types of tickets.[8)] SJ's ticket pricing has become more diversified, with rebates for early bookings, etc. In recent years, this has contributed to breaking the trend of rising ticket prices. In the freight sector, the buyers of transport services have been able to gain from reduced costs of transport as well as higher quality due to competition.

5.8 Conclusions

The Swedish rail reforms were implemented in a step-wise process, but they have hardly followed a plan with clearly stated means and objectives (as in the case of Great Britain's privatization of British Rail). Rather, one reform has lead to another, sometimes in a path-dependent pattern.[9)] The driving forces of the development were SJ's recurrent financial problems, coupled with political objections to save the railways, improve sector efficiency, increase rail patronage and transfer freight transport from the roads to the railways. In relative terms, there has been much more focus on inter-modal competition than on intra-modal competition, especially when compared to EU objectives.

The 1988 vertical separation of infrastructure from operations was a groundbreaking event at the time. It made heavy investments in rail infrastructure possible. The investments have resulted in new lines and tracks being upgraded for higher speed and increased safety.

The decentralization of responsibility for the unprofitable regional lines placed responsibility on the actors most committed to continuing and developing these lines. The result has commonly been a revival of the services and better co-ordination with local and regional bus services. In some cases though, it is likely that – from a socio-economic and even an environmental point of view – railway lines used by only a few passengers should have been replaced by bus services.

From the first new entrant in 1990, there has been a long process of learning among train operators, procurers and regulators. Today, we have a market with several competing passenger and freight operators. The reorganization of the passenger railway services and the tendering system have put the focus on operational cost efficiency, resulting in reductions in subsidies by about 20%. Buyers of freight transport services have been able to gain from reduced costs of transport as well as higher quality due to competition. Several of the new and minor freight operators have succeeded in developing new business concepts, thereby shifting freight from the roads to the railways. Despite these positive developments there are some reasons for concern. Regional development policies to a large extent continue to

7) Alexandersson & Hultén (2006)

8) SOU 2005:4

9) A more thorough discussion on this can be found in Alexandersson (2010).

influence where public spending on infrastructure is made. Much money has been directed to large-scale infrastructure projects (like the new Botnia Link), without any guarantee that the operators will actually be able and willing to run commercial services there in the future. In at least a couple of cases, contracts resulting from strategic or unrealistic bids in competitive tenders have made it impossible for the operator to fulfil the requirements, causing severe problems for passengers.

It is quite possible that the fragmentation of the railways and the increased competition from new train operators have resulted in some sub-optimization and loss of scale economies. However, it is also clear that the former monopoly did not have strong enough incentives to rationalize and exploit economies of scale

Overall, the assessment of the Swedish railway reform results in a rather mixed picture. The reforms have made railway operations more efficient and competitive, increased patronage and rail freight transport, and made it possible to keep and develop lines that have a high degree of socio-economic importance. At the same time, the investments and upgrading of the railway network have been very costly for taxpayers which partly offsets the benefits.

The introduction of competition on the track for domestic passenger services marks a major move in quite a different direction from previous reforms. It remains to be seen what kind of effects this will have. The reform is dependent upon finding a good solution for allocation of track capacity between competing firms, especially when capacity is scarce and there are conflicting demands. In any case, the experience should be of interest for future rail policy developments in other EU countries.

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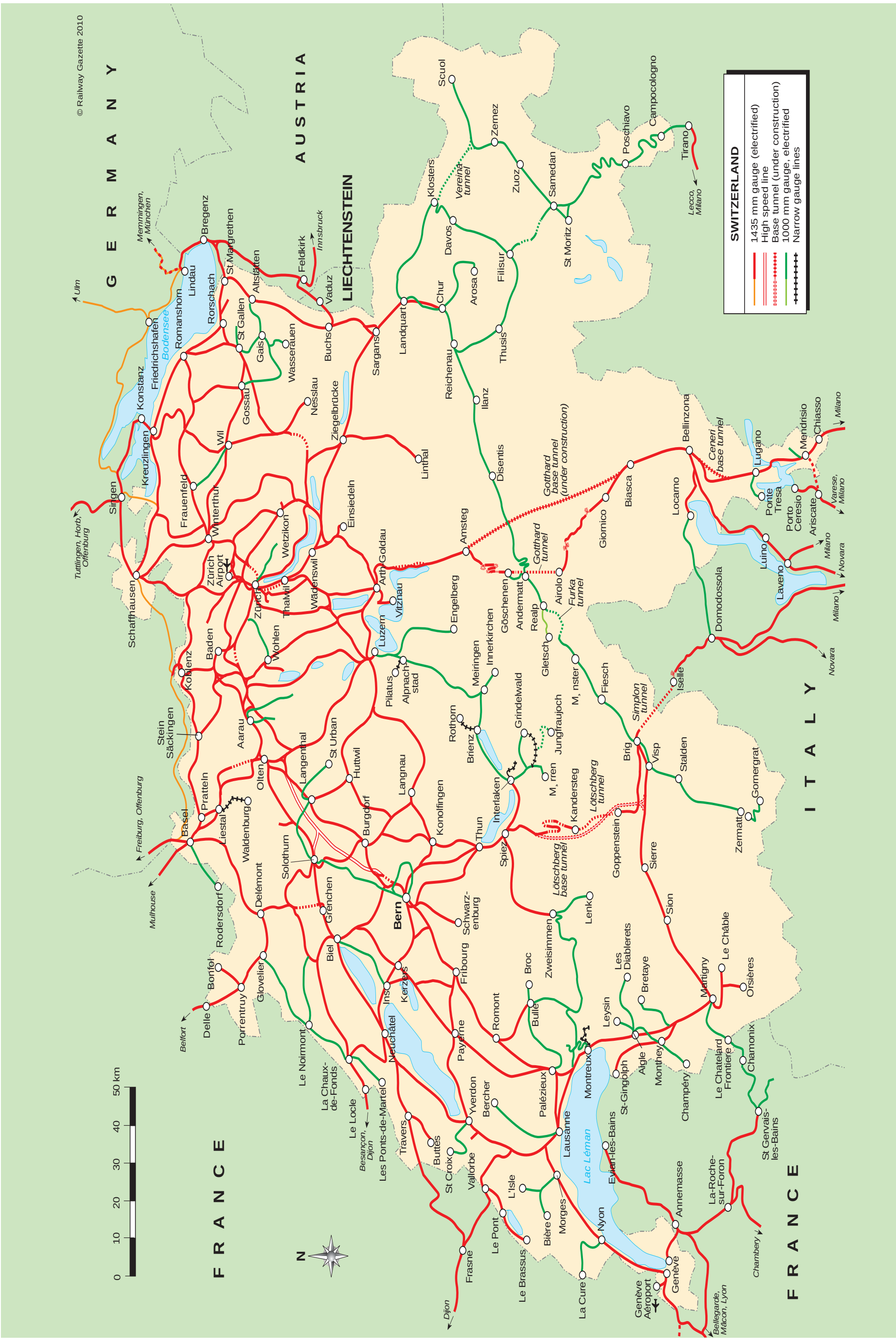

Source: Railway Gazette International

6 Switzerland

Andreas Meyer and Bernhard Meier

Area [a] (km²) 41,285

	2008		2008
Population on 1/1/2009[a] (million)	7.7	Freight tkm[a] (billion)	12.3
GDP[a] (€ billion)	341.3	Passenger-km[a] (billion)	18.0
Length of line[a] (1000 km)	3.6	Modal share – passenger[b] (%) Modal share – freight[b] (%)	17.1 % 43.6 %

[a] Eurostat, Statistical Office of the European Union, 2010

[b] LITRA, Informationsdienst für den öffentlichen Verkehr, 2010

6.1 Introduction

Railway reforms have been a recurring theme in Switzerland ever since railways were established as a mode of transport. In 1872, the federal state deprived the Swiss cantons of their right to grant concessions to operate railway lines, thus centralizing control of the railways at federal level. Shortly before the turn of the last century, the Swiss population approved the nationalization of the main railway undertakings in a referendum. The five private companies in question were merged into a public entity, an event that marked the foundation of SBB as Switzerland's national railway undertaking. Further undertakings were subsequently integrated into SBB and the company now operates 3011 of the 3720 kilometers of standard gauge railways in Switzerland.

After almost a century of relative regulatory stability, a renewed wave of railway reform projects was launched in the 1990s. The general objective of the reforms was to improve the competitiveness and efficiency of the railways and to improve customer service. Railway reforms in Switzerland have now become a continuous process, which – due notably to the influence of railway regulation in the European Union – is likely to maintain its momentum over the coming years.

6.2 Recent reforms and their driving forces

6.2.1 Objectives of the reform process

The railway reforms in the 1990s were undertaken against the background of increasing demand for mobility on the one hand and rigorous intermodal competition between road and rail on the other. The railways, at the time still operating under a system dominated and controlled by government, were not adequately equipped to compete with roads on an equal footing. This shortcoming was further aggravated by the fact that the road sector benefited at the time from a highly favorable cost structure. Against this background, the rail reforms aimed at leveling the intermodal playing field by fostering the railways' development as a resource-saving and environment-friendly mode of transport. The approach chosen was economics-based: the two main objectives of the reform were to increase the efficiency of public transport and to improve the cost-benefit ratio of public funds invested in the sector.

6.2.2 Regional traffic as the first step in 1996

The first step in this reform process was taken with the amendment of the 1957 Railway Act (Eisenbahngesetz) in 1996. This amendment mainly affected regional traffic by establishing what is known as the "ordering principle". Under this principle, the federal and cantonal authorities order regional public transport services from the transport undertakings each year. The amount payable to the transport undertakings for the services ordered is set beforehand, which means that there is no longer any ex-post covering of deficits by the state. The public transport undertakings thus bear all the entrepreneurial risks of their activities. Moreover, the scope for profits in regional transport is limited, as the public authorities set the payment due at a level which is just adequate for a breakeven result.

6.2.3 Establishment of the new regulatory framework in 1999

A further step in the rolling reform process was achieved with *Bahnreform 1* in 1999. An important part of this rail reform package was the hiving-off of SBB from the federal administration and its establishment as a corporation with a special status. The company therefore gained independence despite remaining wholly owned by the federal government. To allow the newly created company to operate without the burdens of the past, the Confederation simultaneously refinanced it. As a reflection of its legally independent status, relations between SBB and the Confederation were also put on a new footing. From then on, the federal administration would retain only limited influence over SBB as an independent railway undertaking. The principal channel of influence is a multi-annual contract defining the entrepreneurial aims of the company and providing for the financing of the rail infrastructure operated by SBB.

In addition to regulating SBB, the reform contained further measures with a general scope. Firstly, it entailed the full liberalization of the rail freight sector. The freight market was thus opened up seven years before the equivalent EU legislation entered into force. Liberalization sparked fierce intermodal competition as a large number of new entrants joined the market. In transalpine freight traffic, for example, competition has meant that SBB, the historical incumbent, now only holds a market share of about 48 % (see Figure 1), not much more than its main competitor BLS Cargo.

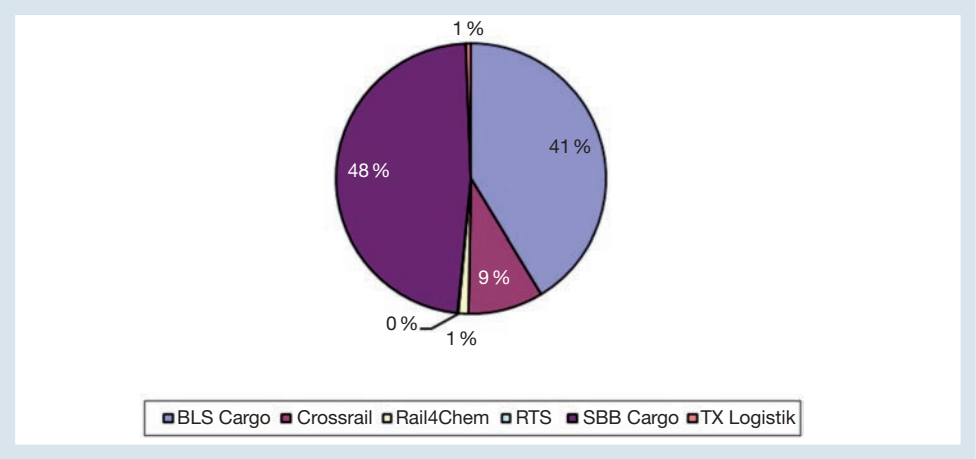

Figure 1: Market Share Transalpine Freight Traffic (tonnes) 2009

But opening up the market has brought mixed results. The main objectives of liberalization, which were to increase the modal market share of rail freight traffic on the one hand and to reduce public subsidies on the other, have not been achieved. Liberalization was pushed through in an overly hasty manner and without fully providing the framework conditions that would have allowed fair inter- and intramodal competition. Secondly, the reform extended the ordering principle (see below) to all forms of compensation. Thirdly, it established the principle of open network access for freight and thus, de facto, went beyond the requirements of Directive 91/440. Fourthly, the reform implemented the separation of accounts and the organizational separation of rail infrastructure and train operation in order to increase transparency in the provision of rail services.

6.2.4 Over-ambitious reform attempt in 2005

In 2005, the government presented a further rail reform package to parliament *(Bahnreform 2)*. Its main aim was to implement the content of the First and Second EU Railway Packages in Swiss law. In addition to this, the legislation included measures touching on various topics ranging from infrastructure financing to debt relief for smaller railway undertakings. Parliament rejected the bill, proposing to the government that it split up the package into separate, more focused bills.

6.2.5 Refinements in 2009

The government therefore began to introduce *Bahnreform 2* in parts. The first part of the reform *(Erstes Teilpaket Bahnreform 2)* entered into force in 2010. It contained a large number of small refinements to the system of railway regulation. One of the main aims of the bill was to align the regulatory framework governing small railway undertakings with the regulatory conditions affecting SBB. A further objective was to improve railway undertakings' incentives in the regional transport sector by allowing them to make free use of profits earned in this field once a certain level of reserve funds had been reached. The fact that this legislative package amended and established more than 40 pieces of legislation illustrates how extensive and

complex railway regulation has become over the last few years. It covers topics as diverse as the proper labeling of video surveillance in train stations, fiscal matters, and the specification of transport data to be provided to the regulator, as well as the transition from annual to biannual ordering periods in regional transport.

6.2.6 Ongoing reforms

The second part of the railway reform package *(Zweites Teilpaket Bahnreform 2)* was submitted for public consultation in 2009 and is likely to be presented to parliament towards the end of 2010. Its priority objective is to transpose the First and Second EU-Railway Package into national Swiss law. To this end, the project includes compliance with the requirements of the EU Directives on interoperability. In addition, it strives to enhance the role of non-discrimination in the train-path allocation procedure. Today, this procedure is in the hands of *Trasse CH* (or "*Swiss Train Paths*"), a corporation established and held in equal parts by the three main railways and the Swiss Public Transport Operators' Association (VöV). Trasse CH was established in 2006 and operates to the full satisfaction of its customers. In order to improve the body's independence from the railway undertakings, the reform package proposes its transformation along with the establishment of a full-fledged independent rail regulator in line with the requirements of EU legislation. The legislative project also embodies the principle that tendering procedures may be used to award public transport contracts in the rail and bus sectors. It does not, however, specify the details of the applicable procedure.

The next step in this reform process is planned for 2011, when a legislative project on infrastructure financing, including new rules on track access charges, is due to be submitted to public consultation.

Generally speaking, Swiss railway reforms of the last decade have concentrated on consolidating the system established in the 1990s. The general performance of this system is fairly positive. On the one hand, the existing framework features elements of competition and entrepreneurial freedom, which have contributed to considerable productivity and efficiency gains and thus have led to a significant improvement in customer service. On the other hand, its characteristics include close coordination between the different stakeholders in the system and stability – as demonstrated by the multi-annual contracts concluded between the railways and the federal authorities. Given these achievements, the regulatory framework has contributed to what can justifiably be dubbed the "success story" of public transport in Switzerland.

6.3 Success of today's railway system

6.3.1 Achievements of the system

Switzerland's present-day railway system can be rated a success story. In 2008, the average Swiss took the train more than 50 times a year and travelled 2,404 km, which is a world record according to UIC statistics. Between 1995 and 2008, passenger railway transport grew by 54 % (from 11.7 billion passenger-km in 1995 to 18.0 billion passenger-km in 2008) – see Figure 2. In 2007, the modal share attained in the passenger sector amounted to 15.8 %, more than in any other European country – see Figure 3. In freight transport, growth has also

been rapid and rail's share of tonne-km was 38.6 %, by far the highest modal share in Western Europe – see Figure 4. Further achievements of the system include its high safety level, its customer orientation and punctuality, which – defined as a delay of less than three minutes – reached 96.3 %.

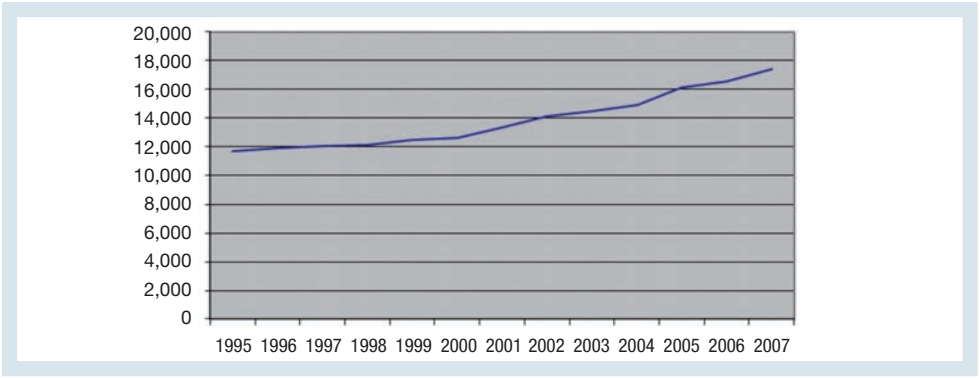

Figure 2: Rail Passenger Transport in Switzerland (million pkm)

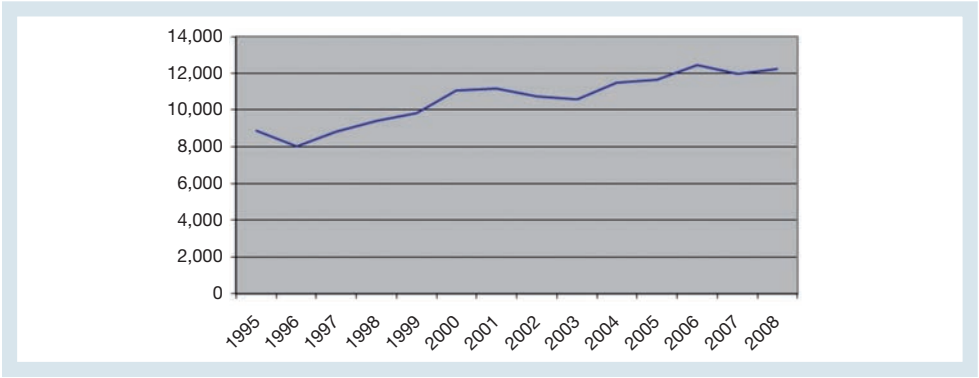

Figure 3: Rail Freight Transport in Switzerland (million tkm)

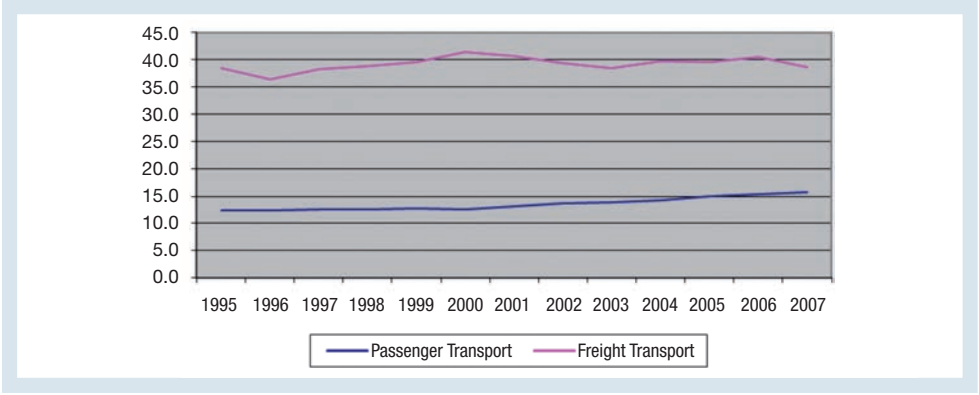

Figure 4: Modal Share Rail

6.3.2 Success factors

Cooperation: One of the key factors in the success of the Swiss public transport system is its cooperative nature. The main platform of cooperation is the *direct traffic* system, which brings together more than 130 public transport undertakings. The scheme ensures the global validity of travel passes such as the Half-Fare card. These cards today enjoy great commercial success. For example, more than two million Half-Fare travelcards are in circulation, meaning that almost one out of three Swiss now holds a Half-Fare travelcard. Tariffs and tickets have also been harmonized, which ensures that passengers only need to purchase one ticket for any journey within the country, regardless of how many services of transport undertakings they use. This cooperation extends to the timetable harmonization of different railway companies. This makes for efficient transfers, not only within the same operator but also between different operators. The transport chain is optimized across all the undertakings involved in the process, with the benefit of considerable savings in total traveling time. Finally, cooperation also extends to technological development. SBB, as the largest railway undertaking, was mandated by the federal administration to develop technologies such as GSM-R or ETCS for the benefit of all Swiss railway undertakings and the entire railway system. Cooperation in this field has not only helped to advance the development process but has also furthered the diffusion and implementation of new technologies.

Integrated railway undertaking: Another key success factor is the fact that SBB as the most important operator is an integrated railway undertaking. To have both sides of the wheel/rail interface integrated into a single company facilitates close coordination of railway infrastructure and train operations.

- Integration makes it easier to optimize schedules and network use. Optimizing network capacities is particularly crucial for Switzerland, where the network is among the most heavily used in the world and many lines are operating at the limits of their capacity.
- In addition, integration permits optimization of infrastructure planning and investment, allowing for efficient use of public funding and ensuring that investment reflects the needs of customers and minimizes system costs. On certain segments of its network, for example, SBB decided to make use of tilting technology rolling stock, thereby avoiding heavy infrastructure investments.
- When it comes to technological innovation involving both sides of the wheel/rail interface, integration makes the job much easier. In Switzerland, the development of several technological innovations, including tilting technology, would not have been possible if it had not taken place within an integrated company.
- Another important aspect of integration is customer benefit. Integration allows for quick reaction and coordination in the event of unexpected problems, such as delays or operational disruptions. During the Euro 2008 soccer championships, for example, close cooperation between the different segments of the integrated railway made for customer-friendly solutions: when one of the evening games held in Switzerland ran into extra time, close contact between the different actors made it possible to delay the planned departure of the spectator trains while advancing the departure of freight trains. As it keeps the information chain short and reduces the number of interfaces, integration also optimizes customer information when unforeseen events occur.
- And finally, integration also reduces the costs of the railway system as a whole. Not only does it bring economies of scale at the level of the individual company, thus diminishing the need for public subsidies, but it also reduces the complexity of the system and minimizes the number of actors involved, thus avoiding duplication of structures and responsibilities.

Synchronized timetable and node network system: One of the main quality features of the Swiss railway system is its integral synchronized timetable. First introduced to the country in 1982, this system features rigid synchronization, with trains serving the same lines at the same times each hour, and increasing to every 30 minutes in places and even every 15 minutes on suburban routes. From a customer perspective, this system combines high service density and thus flexible travel options with a high regularity of services that facilitates planning. To further maximize customer benefit, synchronized timetabling is combined with a network of nodes. At these nodes, regional trains arrive shortly before the long-distance services and leave shortly after, thus improving interconnectivity both between long-distance and regional trains. As a consequence, traveling time is reduced and passengers are able to take full advantage of the density of public transport services.

Incentives for efficiency and entrepreneurial freedom have been built into the current regulatory framework as another important factor in its high level of performance. As outlined above, the successive railway reforms have opened up leeway for entrepreneurial liberty, leading to a more efficient use of public funds by the railway undertakings. Since the change in the regulatory system in the 1990s, SBB has considerably increased its output while at the same time reducing the number of staff it employs. This overall gain in productivity per employee was rendered possible by entrepreneurial autonomy. To further increase this autonomy, SBB is urging the federal authorities to ease the company's current employment conditions, which are still largely in line with those of the federal administration. Not only can the positive consequences of efficiency incentives be witnessed throughout the company as a whole, they are also visible in the different business segments: the fact that long-distance traffic is now permitted to generate profits (tempered, however, by compensation between profitable and unprofitable lines) has led to considerable productivity gains and more efficient use of resources. In regional traffic, annual productivity gains of around 2% have been achieved every year since the ordering principle was introduced. As for the real estate segment, the profits generated are being used to pay for rail infrastructure investments and the financial restructuring of the company pension fund, and therefore to reduce the need for public funds. In the freight segment, the incentives to enhance efficiency stem directly from competition, but have not yet reduced the need for public subsidies or increased rail's modal share.

Public funding: Finally, the success of Switzerland's railway system is also based on public funding. Public investment in rail infrastructure has long had a high priority in Switzerland. Since the 1980s, in particular, both the federal state and the cantons have put large amounts of public funds into rail infrastructure, the prime examples being the *Rail 2000* project and the "*NEAT*" transalpine rail corridors. Investment in the latter project amounts to about €12 billion, and is provided through a public fund (the *FinöV-Fonds* – "Fund for the Financing of Public Transport Projects") which is financed by the proceeds of the distance-based heavy goods vehicles tax, value added tax, and fuel tax. A debate is currently in progress about infrastructure projects for the coming decades, some of which are already decided (the so called *ZEB* projects) while others still need to be finalized by planners and put through the political process (the so-called Rail 2030 package outlining infrastructure projects beyond 2030). In addition to the investments in new infrastructure, the government also subsidizes the maintenance of the existing infrastructure to the tune of about €1 billion a year. Due to the increasing density of traffic, network expansion and rising technology costs, this burden is likely to increase significantly over the coming years. Generally speaking, the public funds allocated to infrastructure construction and maintenance currently allow for acceptably moderate track access charges (corresponding roughly to the average for Europe). This keeps both freight and passenger rail transport more affordable and is helping rail to maintain or even increase its modal share.

6.4 Current challenges

6.4.1 Clouding of the European scene

There are, however, clouds on the horizon of the Swiss rail transport scene described above. In the regulatory sphere, these clouds stem from EU regulation in the railway sector. Not being a member of the European Union, Switzerland is not directly obliged to implement EU legislation in this field. By signing the Land Transport Agreement with the European Union in 1999, however, Switzerland expressed its general willingness to follow suit where railway legislation is concerned. The acts on which equivalence has to be achieved are determined by a mixed committee in which unanimity between the two parties is required. Switzerland is not, therefore, under a binding legal obligation to implement the European legal framework in national law, but is confronted with political expectations to emulate the EU's legal development in this field.

6.4.2 Underlying problem

The basic problem, when it comes to integrating EU railway legislation into Swiss national law, is the diverging "philosophies" of railway regulation in Switzerland and the European Union:

- The EU's approach is to detach rail infrastructure from train operations. Its approach is essentially based on the assumption that such a separation is needed to permit proper competition on the tracks, which in turn constitutes a precondition for the efficiency of the system.
- Switzerland, most importantly, sees not just efficiency but also the broad availability and quality of transport services as the main goals of the railway system. The Swiss system shows, moreover, that integrating railway infrastructure and operations does not prevent competition (freight) and therefore disproves the thesis that effective competition necessarily requires separation. The considerable productivity gains in regional traffic undermine the second assumption – namely, that efficiency gains necessarily require competition.

The regulatory framework of the current Swiss railway system may therefore be considered as a special case within Europe. Nevertheless, it also proves that high efficiency and quality can be achieved under different institutional settings than the one followed by the European Union.

6.4.3 Main challenges

As for the interplay between the European and the Swiss regulatory systems, three main challenges can be identified:

1. **The future of the integrated railway undertaking:** The separation approach chosen by the European Union calls into question the role of integrated railways and the benefits yielded by integrated structures. It seems advisable here to bear in mind the complexity of the railway system and the innate need for coordination at the wheel/rail interface with regard to technical issues, scheduling, investments and planning. Organizational structures have to take this complexity into account. Furthermore, the relationship between separation and competition must also be analyzed. Swiss railway undertakings are integrated and yet entirely fulfill the non-discrimination requirement. The Swiss example thus proves that there is no inherent contradiction between liberalized markets and an integrated structure.

2. **The optimal degree of market opening:** Market opening is not a goal in itself. It makes sense and should be implemented where it is expected to improve efficiency, quality and broad availability of transport services – the ultimate objectives of transport policy. We must thus consider whether competition may be more suited to certain sectors and situations than to others, be it because of different parameters (density of network use, infrastructure, market structure, etc.) or different points of departure (level of quality, productivity, etc.). Moreover, as the rail sector has great scope for economies of scale, it tends towards a natural monopoly. For competition to be sustainable, it is therefore necessary to ensure that the resurgence of monopolistic structures is prevented by an adequate regulatory setting. It is in any case clear that liberalization should not be implemented in an overly hasty manner. Rather, the experience gained with market opening in the freight sector and in international passenger transport should be thoroughly analyzed and a level playing field with comparable conditions for all railway undertakings involved should be created before further reforms are undertaken for domestic passenger services.
3. **Clarification of objectives:** Finally, it is essential to thoroughly discuss the actual objectives of the regulatory setting. The optimal framework will depend on whether the system is aimed at competition for competition's sake or rather at quality, efficiency, volume of transport and modal share or any combination of these objectives. The European regulatory system must leave some leeway for individual states to design a regulatory system suited to their national circumstances and objectives. A flexible framework may be more in line with the multiple realities of railways in Europe than a rigid one-size-fits-all approach.

6.5 Conclusion

The current regulatory system in Switzerland was established in the late 1990s. During the past decade, successive railway reforms have consolidated and refined this framework, and this has proven to be quite successful. Cost-efficiency and a high quality of transport services along with an impressive growth in output provide ample proof of its positive performance. Moreover, the system is non-discriminatory. The best evidence of this can be found in the entirely liberalized freight sector, where functioning competition has been implemented in the absence of any complaints of discrimination.

This assessment leads to the conclusion that the current Swiss system actually fulfills the objectives of the EU regulatory framework. In many respects it may even be considered a model case. The successful features of the system, such as its cooperative nature, the synchronized timetable with the node network system and the integrated nature of the railway undertakings, have been established and developed over time and are deeply rooted in today's railway landscape. It is thus doubtful whether it would be wise to disturb this system with a regulatory revolution driven by EU legislation. Rather than a revolution, the Swiss system of public transport needs steady and constant improvement to maintain and enhance the existing incentives for efficiency and quality.

Source: Railway Gazette International

7 The Netherlands

Didier van de Velde

Area (km²) 41,526

	2008		2008
Population on 1/1/2009 (million)	16.5	Freight tkm (billion)	7.0
GDP (€ billion)	595.9	Passenger-km (billion)	16.0
Length of line (1000 km)	2.9	Modal share – passenger (%) Modal share – freight (%)	9.1 % 5.3 %

Source: Eurostat, Statistical Office of the European Union, 2010

7.1 Introduction

Looking back on the period since the adoption of EU Regulation 91/440, one can observe that the Dutch railway sector has been submitted to several changes in regulatory approach. This chapter provides an overview of these developments in the Netherlands from 1992 to 2008. It provides new information by including the findings of a recent official evaluation of the 2005 legal reform in the railway sector. The document containing the government's position on this evaluation report that was sent to Dutch parliament in June 2009 (Ministerie van Verkeer en Waterstaat, 2009) is, together with its underlying reports, one of the main sources of information for this chapter. This chapter concludes with a few general remarks on the observed evolutions and the performances of the sector.

7.2 Initiation of the reforms in 1992

The rail sector has been in continual flux ever since the 1990s. Over the years, views on the ultimate objectives for its organization have changed. European legislation on market opening for rail freight was one of the drivers that started the restructuring process of the Dutch railway sector. Directive 91/440 required for an administrative separation between infrastructure management and transport of passengers and freight. This first step was meant to enable competition on the tracks in freight.

In 1992, the Wijffels Committee, appointed by the Minister of Transport, worked out how to apply the new European rules; and designed a new relation between the railway company and the state (Commissie Wijffels, 1992). The main idea of the reform was that passenger transport should become a non-subsidized commercial activity while building and maintaining the infrastructure remained a responsibility of the government. Dutch Railways (NS) was reorganized according to the recommendations of the Committee.

7.3 Railway reform and transitional contract in the years 1995–99

The railway reform initiated in 1995 in the Netherlands aimed to increase the market share of railways in overall transportation and intended to lead to a lower burden on the public purse. NS undertakings were split up in 1995 (within the NS Holding) into a number of separate companies, each with its own account.

The split-up resulted in an organizational separation between the commercial activities – such as passenger transport, the exploitation of railway stations and development of real estate – and the infrastructure activities and infrastructure development and maintenance. The latter activities were placed in the so-called 'task organizations'. The three task organizations created in 1995 were: Railned, NS Traffic Control (NS Verkeersleiding) and NS Rail Infrastructure Management (NS Railinfrabeheer). A unique aspect of the Dutch model at that time was the distinction between Railned and NS Railinfrabeheer. Railned was responsible for licensing train operators, for allocating capacity (passenger, freight and maintenance), for overseeing railway safety, and for providing infrastructure advice on investments and maintenance to the Ministry of Transport. NS Railinfrabeheer was responsible for constructing, maintaining and managing the railway infrastructure. NS Verkeersleiding was charged with daily traffic dispatching and real-time passenger information.

The costs of the three task organizations were covered directly by the Ministry of Transport even though these organizations were still part of the NS Holding. Passenger transport (NS Reizigers) and freight (NS Cargo) became separate organizations within the NS Holding. In 2000, the freight division was sold to the German Railion consortium, belonging to DB (Deutsche Bahn), being the state-owned rail operator of Germany.

This resulted in a contract between the state and NS, which aimed at giving NS more freedom to make its own commercial decisions. It should be noted that this reform did not involve a privatization of NS, since NS has always been a joint-stock company ('naamloze vennootschap') with all shares held by the state. It refers more to the withdrawal of subsidies. NS became an independent company, free of the direct control by the Ministry of Transport, even though the state remained as sole shareholder. The transitional contract between the state and NS for the period 1996 to 2000 was also meant to allow the development of a new railway legislation to replace the Railway Act of 1875. For this period, the transitional contract foresaw a gradual reduction of subsidies to NS and the possibility to stop operating non-profitable passenger services. This resulted in the separation of a number of non-profitable lines from the NS network. These were then, gradually, contracted out (based on government subsidies) to private parties. Since then, passenger growth and quality improvements on these lines have been realized. Additionally, in the first transitional stage up to the year 2000, the government decided to set the infrastructure charges at zero, which probably also encouraged new operators to enter the freight market.

7.4 Performance contracts in the years 1999–2001

In 1999, a policy document *De Derde Eeuw Spoor* ('The third Century of Rail') (Ministerie van Verkeer en Waterstaat, 1999) on competition and development of the railway sector was published by the Ministry of Transport. It chose to adopt competition for the tracks for passenger transport. According to the policy document, a 10-year concession contract was to be directly awarded to NS. This concession should include performance indicators with financial incentives on passenger growth and punctuality. It would contain conditions on minimum service levels, fare increases, integrated ticketing and access for people with reduced mobility. These proposals would be laid down in a new railway and concession legislation. To bridge the gap until this legislation would be finalized, a memorandum of understanding (MoU) was made up, which set performance levels for punctuality and passenger growth in peak hours. The targets for these performance indicators were proposed by NS and agreed upon by the state. However, there were further delays in the legislation process. These delays made it necessary to make up a second transitional contract based on the MoU. This contract set performance levels for a period of 6 months and was extended twice for an additional period of 6 months each time.

In 1999, a report by the National Audit Office (Algemene Rekenkamer, 1999) concluded that the Ministry had failed in its supervisory and steering role of the task organizations, which were responsible for building and maintaining the infrastructure. The independence of the task organizations from the NS Holding could not be guaranteed and adequate corrective action by the Ministry was overdue.

In the meantime, the level of train punctuality fell to a level that was not compliant with the second transitional contract signed in 2000 (see Figure 1). The Ministry concluded that there was insufficient focus on integral quality by the management of various railway organizations within NS (task organizations and passenger transport). At that time, there were also internal changes and plans to create a different type of operational groups for train operations. This would have meant that drivers and conductors would remain more closely bound to one geographical area, rather than operating through major parts of the network on various train services. These plans, however, received massive opposition from the unions, as this was

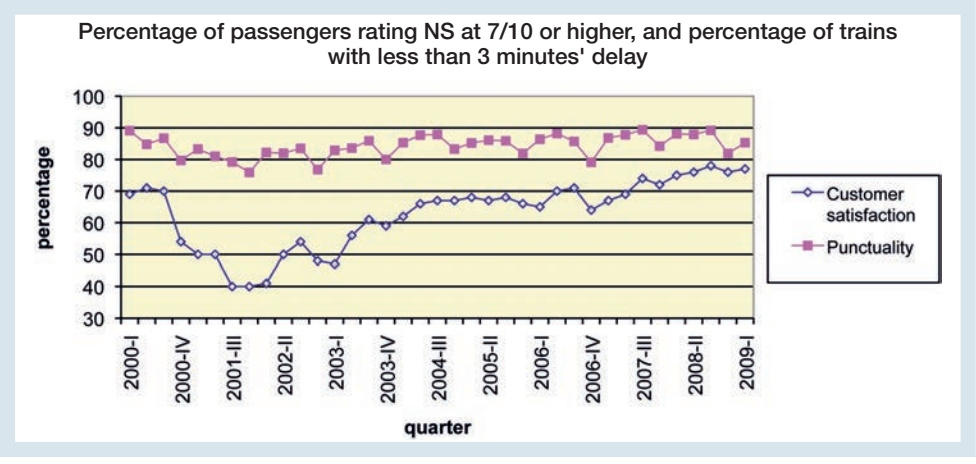

Figure 1: Customer satisfaction and train punctuality (2000–2009)

perceived to reduce the job attractiveness, and the company declined rapidly as many strikes followed. The urgency of the situation led the Ministry to introduce a policy change, called *"Herbezinning spoor"* (Railway reconsideration) in September of 2001. The punctuality target was reduced from 88 % to 80 % (based on a 3-minute delay norm, which is stricter than the norms of 5 or 15 minutes' delay used in many other countries). When NS, towards the end of 2001, failed marginally to achieve the 80 % punctuality target, two members of the executive board and all members of the supervisory board resigned.

The railways' poor performance in 2001 and the unrest this caused led to a reappraisal of the previous reorganization plans. After this reappraisal, parties in the rail sector and the government focused on working more closely together and on remedying and improving the railways' performance.

7.5 Preparing for new legislation in the years 2001–05

Against this background, the second transitional contract was again extended for six months and subsequently for a period of one year as the new Railway and Concession acts had still not been passed. A full institutional separation between infrastructure management and train operations was implemented in 2002: all the infrastructure management tasks were separated from the other NS activities and these tasks merged into a new organization called ProRail in January 2003. This company is fully owned by the state, where the Ministry of Transport acts as shareholder and is thus entirely separate from NS. ProRail is responsible for rail capacity management, train path management, real-time passenger information, as well as the management of the passenger transfer spaces at the stations, and infrastructure maintenance and development. ProRail operates within the framework set by the Ministry of Transport, concerning general policy on track usage and network development.

In April 2003, the new Railway and Concession acts were eventually approved by parliament. However, final parliamentary agreement on the concession texts could not be reached before December 2004, allowing the new regime to come into force in 2005, five years later than the original reform plan. As a result, the current organization, with the relevant legislation, was only introduced in 2005 (see Figure 2). This organization combines directly awarded concessions to the national operator of passenger railway services (NS) and to the infrastructure manager (ProRail), both being publicly owned companies, with a series of competitively tendering concessions for regional railway lines.

The competitively tendered regional lines are mainly branch lines that were formerly operated by NS and that are now gradually submitted to competitive tendering by the regional transport authorities (provinces and city regions) but still on ProRail tracks. Several of them have been chosen for a multimodal contracting approach, where the operator is responsible for operating both the local branch line(s) and the neighbouring bus services, serving as feeders to the railway services. Most contracts are net-cost contracts, implying that the operator is in charge of service design and carries both cost and revenue risks after payment of a contract price by the tendering authority. These lines, representing 7 % of the total number of passenger-km by train in the Netherlands, had an average growth of 2.75 % per year between 2000 and 2006 compared to the national railway network with 0.9 % per year. This is to a large extent due to the service improvements that resulted from the competitive tendering of these lines, such as an increased supply (early and late trains and week-end services), increased frequency, new

rolling stock and a better integration with the neighbouring bus services (Van Ooststroom and Savelberg, 2008).

The organization chosen in the Netherlands dovetails closely with European legislation and policy developments, which are aimed chiefly at opening up the market for freight transport and for international cross-border passenger transport. The Netherlands have always opposed opening up the national passenger market to open access competition because it is considered that one railway undertaking with exclusive rights for the provision of passenger services in a region will be in a better position to optimize these services and secure reliability with both acceptable travel and transfer times, especially in a densely used network such as in the Netherlands.

The Ministry of Transport has three distinct roles. Firstly it must oversee the public interest, secondly it awards the operating concession contracts and thirdly it is sole shareholder of ProRail and NS. As from January 2005, the formal shareholding of NS is transferred from the Ministry of Transport to the Ministry of Finance, such as to separate the role of principal from that of owner. The government sets the rules and acts as a regulator according to the railway legislation. The mutual responsibilities of the infrastructure manager and train-operating companies are stated in track access agreements. These arrangements are shown in Figure 2.

The intensification of the cooperation between the infrastructure manager and the train-operating companies is essential to the new regime. The quarterly meetings under the name

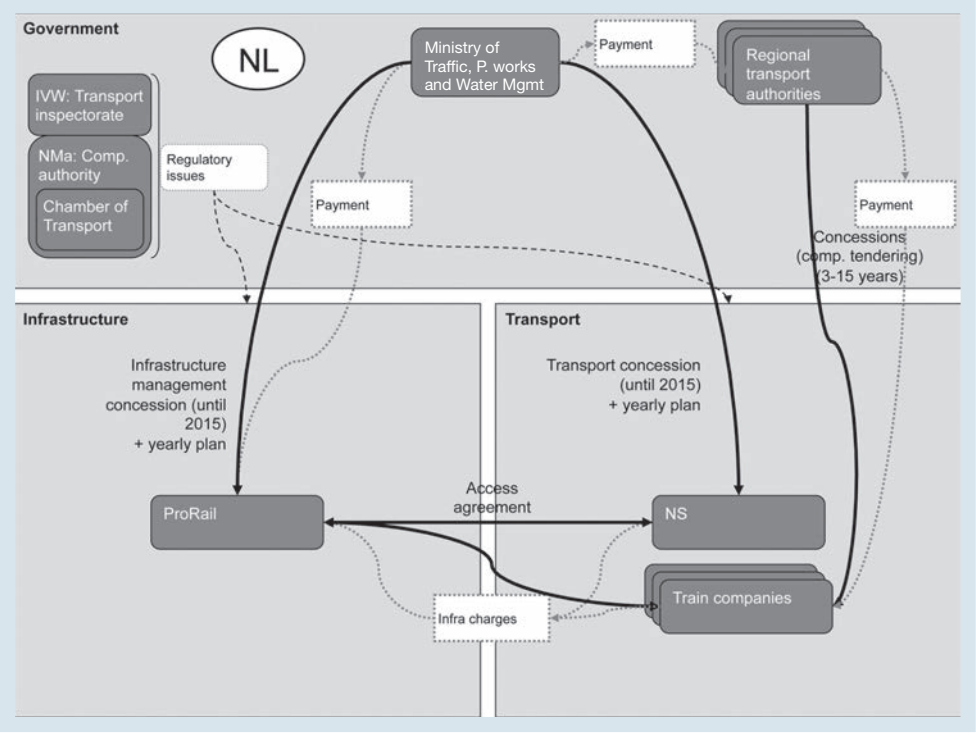

Figure 2: Current institutional configuration (van de Velde and Röntgen, 2009)

of Samensporen ('Tracking Together') between the directors of ProRail, NS, Railion and a representative of the other freight operators serve as an example of the forms of cooperation. To accommodate future growth, these meetings discuss interfaces between the parties and monitor the progress being made in better usage of capacity and the reliability of the entire railway system.

7.6 Building a new system: improving in the years 2005–08

Ten-year concession contracts for NS and ProRail were drawn up and enacted in January 2005. These concessions set performance indicators for NS and ProRail. Every year, NS and ProRail have to propose improved values for these indicators in so-called transport and infrastructure plans. These values have to show continuous improvement or else NS or ProRail are required to explain why this is not possible in a specific year. Using yearly plans makes the system flexible and makes adjustment to changing circumstances possible. The government analyses and then approves these proposals. In a transitional period up till 2007, both companies were allowed to learn to work with this indicator regime. The aim was to get ProRail and NS ready for output steering after a few years. This was to be reached in 2008 and from then on penalties would be imposed if indicator levels were not met.

7.7 Encouraging growth, better performances and development for the years 2008–15

The 2005 railway legislation required an evaluation of the regime in 2008 (Ministerie van Verkeer en Waterstaat, 2009). The four main conclusions of the final report of this evaluation were:

- The rail sector now has a decent structure, but it needs to be put to better use.
- The usage of the railways by the public is increasing.
- The transport operators and the infrastructure manager are primarily responsible for day-to-day management.
- The legal system could work better.

The government concluded that a radical reorganization is not required. However, the government has also come to the conclusion that the organization needed some improvements which were laid down in a policy document. It also concluded that the frameworks for user charges and allocation of capacity needed to be tightened up, improved and made more transparent, and that the position of regional authorities in the management of stations needed to be improved. Furthermore, the position, role and management of the infrastructure manager ProRail and NS needed to be made more transparent.

The evaluation found out that not all improvements required could be brought about through legislation. Equally important is the behaviour of the parties in the rail sector and especially the cooperation between them, since they are the ones who have to deliver services together. Cooperation between the infrastructure manager and the transport operators has improved in recent years, but it was perceived that cooperation had to be further stepped up. Moreover, the points for improvement listed in the final report of the evaluation indicated that existing instruments were not fully utilized.

The government then announced ambitious aims for the rail sector in the Netherlands. It identified four priorities for improving the quality and capacity of both passenger and freight transport:

- more frequent services on the busiest lines in and around the Randstad in the west of the country;
- an integrated regional public transport system revolving around rail transport;
- reduction of travel times to the various parts of the country;
- a strategy compatible with several future growth scenarios for freight transport routes.

In its 2007 coalition agreement, the government aimed for 5% annual growth in passenger transport during its term in office. Until 2020, €4.5 billion was earmarked for investment in the rail sector through the *High Frequency Rail Transport Programme*. The government plans to achieve these ambitious aims by expanding the capacity and quality of the railways, and by making the organization of the rail sector, the rules and regulations applicable to it, and the distribution of responsibilities between the various parties more transparent and more effective.

In a follow-up to the evaluation, the government is also planning to present a clear, uniform policy framework for user charges, which should led to more clarity and certainty. The main concern is for tariffs, and the principles on which they are based, to be clearer, and the costs and the system used by ProRail for user charges to be more transparent. The stability of the system, tariff development and better utilization of the railways are also major considerations.

The evaluation observed that NS and ProRail have improved their performance in the past few years. To keep them on track and stimulate further growth, the government felt it necessary to adapt its guidance of the two organizations in a number of areas and to take a more hands-on approach to providing direction to the two parties. In 2010, the government will explore how the interface between the concession for the main rail network and existing regional concessions can best be redesigned in the new concession for the main rail network that will enter into force in 2015. It will do so in combination with a re-evaluation of what share of the rail network should count as 'main rail network' – and thus fall within the national railway concession – as opposed to regional networks that are submitted to competitive tendering.

The government sees ProRail first and foremost as a provider of public services. As such, it should focus on implementing its statutory, public responsibilities. In order to ensure that ProRail fulfils this role, the government will bring more pressure to bear through its position as shareholder and awarder of concessions and grants. It will amend the company's articles of association, give the state legal ownership of the main rail network infrastructure and expand its array of enforcement instruments.

In view of the outcome of the evaluation and the government's aims, NS' concession for the main rail network will be modified. The government is planning to introduce a number of new performance indicators and expand its array of enforcement instruments. It has opted to press for more efficiency by charging NS for the right to operate the concession from 2009 onwards, and required NS to provide more detailed financial information. A Policy Document on State-Controlled Companies, will give the Minister of Finance, as NS shareholder, more forceful means to secure the public interest (Tweede Kamer, 2007).

On the basis of the evaluation, the government also concluded that the position of provincial and regional authorities needed strengthening. The government therefore plans to take statutory and organizational measures in a number of fields. Good regional public transport networks are an essential and integral part of the transport chain that brings passengers from door to door. The government regards rail transport as the backbone of integrated regional public transport systems, and is therefore in favour of more extensive cooperation with and between

the authorities responsible for providing services. The provincial and regional authorities will be represented by their umbrella organizations in advisory groups, giving them the opportunity to provide input in assessing the management and transport plans of ProRail and NS.

7.8 Concluding remarks

Looking back on the past decade or so of railway policy, one can see that the views on the ultimate objectives for the organization of the sector have changed considerably. Prior to 2000, competition on the track was foreseen combined with a possible privatization of the state-owned company NS. Around the turn of the century, however, the policy changed towards advocating competition for the track, starting with regional lines only, and the privatization aim was dropped.

One main observation is that the government has used several regulatory styles over the past decade. The changing roles of the players during this period of change seem indeed to have influenced performance. Summarizing the evolutions, one can observe that NS was granted a substantial level of autonomy in the first period of the reform (1995–99). This led to political pressures to make firmer arrangements to secure public values. These public values were then secured in ad hoc contracts which were prolonged several times, awaiting new legislation. After consultation, the government set clear performance indicators and intended to give penalties for performance breaches by NS. This, however, was not successful and performance dropped, leading ultimately to the replacement of the management of NS. Furthermore, the Ministry also concluded in 2001 that the institutional setting existing at that time gave insufficient incentives towards integral quality management to the various railway organizations, and that these organizations tended too much to pass the buck on to 'the government' rather than solving daily operational issues themselves. This eventually led to the current regulatory regime, with its focus on continuous improvement and increased cooperation between the railway organizations.

Another observation is that earlier uncertainties as to the final organization of the sector appear to have had a negative effect on investments and performance. For example, NS was reluctant to invest in new trains at the beginning of that period because of the uncertainty related to whether or not NS would be granted a renewed licence to operate in the forthcoming years and whether this would be in competition or not. NS' reasoning was that the situation created too much uncertainty as to whether adequate return on investments could be realized in the next years. After launching a more long-term policy window in 2001 and providing assurance that NS would be granted a ten-year concession, one could observe that investments in new rolling stock were made again and that performance (such as customer satisfaction and number of trains that run on time) improved (see Figure 1).

The hybrid character of operators has also somewhat complicated the situation, as railway companies have conflicting goals, especially state-owned companies. On the one hand, they are seen as actors that should secure public values, such as customer satisfaction or travel times. On the other hand, they are also expected and want to improve efficiency and cut costs. For example, NS proposed to shut down train stations in more rural areas with a low number of passengers and suggested to remove toilets in some trains that run on short routes. Such conflicting goals have indeed lead to political requests for increased public control. In this concrete case, intervention took place and the compromise was found

in keeping the stations open but allowing the operator to remove toilets from some trains in return for an increased number of toilets availabe at the stations concerned.

The new legislation introduced in 2005 differs from the previous periods in that it combines policy-making with a negotiation component as far as the national railway services are concerned. The government sets performance indicators but NS proposes the target values. Negotiations are then conducted between NS and the government before setting the targets. Breaches to fulfil these targets then lead to penalties. The negotiations that take place between train-operating companies and ProRail on track access and usage also fit into this negotiation model. The railway regulator plays a back-up role in case an agreement cannot be reached. Regional railway services are, contrary to the national services, more and more submitted to competitive tendering.

The sector has come a long way and the outlook now seems positive. Customer satisfaction and performance have improved and the number of people that travel by train is rising (from 14.7 billion passenger-km in 2005 to 16.3 in 2009). The government has deemed that the policy set out in 2001 does not need big adjustments and it appears that the development of a more long-term policy for the sector has brought rest and stability and room for continuous growth of passenger numbers. It now seems that a regulatory approach that includes negotiation has worked out well for the performance of the sector.

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Part C
Central and Eastern Europe

Source: Railway Gazette International

1 Poland [1)]

Juliusz Engelhardt

Area (km²) 312,685

	2008		2008
Population on 1/1/2009 (million)	38.1	Freight tkm (billion)	52.0
GDP (€ billion)	362.4	Passenger-km (billion)	20.2
Length of line (1000 km)	19.6	Modal share – passenger (%) Modal share – freight (%)	6.3 % 22.7 %

Source: Eurostat, Statistical Office of the European Union, 2010

1.1 Rail traffic trends

From the early 1990s to 2004, Poland saw a major downward trend in rail passenger operations. This was attributable to factors such as a decline in the real income of the population in the first stage of the economic transformation process, the emergence and persistence of relatively high unemployment, and rapid growth in individual motoring. In the mid-2000s, a period of growth in rail passenger operations seemed to have started. It can be seen from the figures shown in Table 1 that, starting in 2005, there was an increase in the rail passenger transport volume and operations to 292.7 million persons and 20.3 billion passenger kilometres (pkm) in 2008. This positive trend was reversed in 2009, when a total of 283.4 million passengers were carried, with a transport performance of 18.6 billion passenger-kilometres, i. e. 3.18 % less passengers and 8.15 % less passenger-kilometres compared with the previous year's performance. The decrease in the number of passengers in 2009 is a consequence of the economic slowdown, which – according to the Polish Central Statistical Office (GUS) – has resulted in a reduction of the number of persons employed in the economy by 0.7 % (4.5 % in industry), and consequently in reduced demand for transport, especially commuting.

The statistical data in Table 1 confirms that there is continued relatively high demand in the Polish economy for rail freight. From 2005, when freight operations dropped by 12.6 million tonnes from the previous year, an upward trend was maintained in rail freight operations from

[1)] This text is a continuation of the author's deliberations in the book "Reforming Europe's Railways – An assessment of progress" published in 2005 by CER and Eurail.

Year	2004	2005	2006	2007	2008	2009
Passenger operations						
m passengers	271,194.7	257,574.2	262,645.1	278,755.6	292,741.7	283,446.1
m passenger-kilometres	18,305.3	17,814.8	18,298.9	19,495.2	20,263.1	18,611.7
Freight operations						
m tonnes	288,000.0	269,400.0	290,310.0	293,947.6	276,311.5	240,718.2
m tonne-kilometres	52,053.0	49,664.0	53,291.0	53,923.1	51,569.9	43,394.5

Source: GUS (Central Statistical Office) Statistical Yearbooks, UTK (Rail Transport Authority).

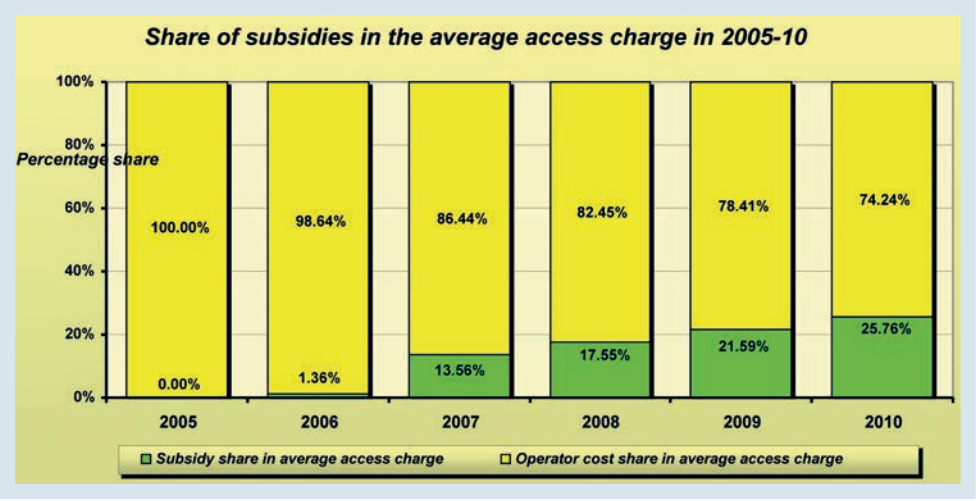
Table 1: Rail traffic in Poland in 2004–09

269.4 million tonnes in 2005 to nearly 294 million tonnes in 2007. A decline in rail freight started in Poland as early as 2008, when the operations dropped by about 6% in tonnes and about 4.5% in tonne-kilometres. A further, much steeper decline in rail freight operations followed in 2009. In total, carriers transported 240.7 million tonnes of freight (43.4 million tonne-kilometres) in 2009. Compared with 2008, this represented a drop in the volume of cargo carried by nearly 13% and in freight operations expressed in tonne-kilometres by 16%. Poor performance reported by Polish freight carriers was largely due to the global financial crisis, which led to a major economic slowdown in Poland. It should be noted that the transport of goods by rail, both due to its mass nature and strict linkage to other sectors of the economy, is sensitive to even a slight decline in the market share.

In 2006, a very important new feature of the Polish Government's policy in the rail sector was the introduction of subsidies to the rail infrastructure maintenance costs with a view to stabilising or even reducing infrastructure access charges paid by rail carriers; a step destined to lead to an overall growth in rail transport and its increased market share. As it is widely believed that in Poland and in other CEE countries, rail infrastructure access charges are very high, while in Western Europe they are relatively low, it is worth looking closer at this issue based on Poland's example. Figure 1 shows the share of subsidies in the average network unit rates of the rail infrastructure operator PKP Polskie Linie Kolejowe S.A. (PKP PLK S.A.) in the period 2005–10.

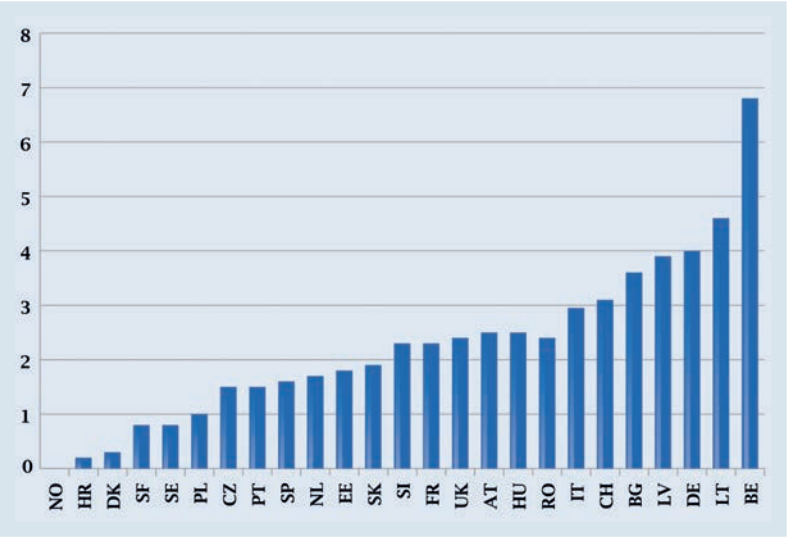
As can be seen from Figure 1, the share of governmental subsidies in the average rail infrastructure access charge in Poland increased from zero in 2005 to 25.8% of infrastructure costs in 2010, with the remainder paid for by operators (and ultimately customers). This policy, continuing over a five-year time span, made it possible to considerably reduce access charge levels both in freight and in passenger operations. During 2005–10, the average rail infrastructure access charge for passenger trains dropped from PLN 8.95 (€1 = ca PLN 4) to PLN 7.02 per train km, i.e. by 21.6%. In freight, the decrease in the average access charge in 2005–10 was even more substantial, as the charge dropped from PLN 23.50 in 2005 to PLN 17.42 per train km in 2010, i.e. a drop by 25.9 %.

By comparison, Figures 2 and 3 show the average infrastructure access charges in euro/train km in other EU Member States relative to those in effect in Poland. A comparative analysis reveals that, with its level of charges in freight traffic, Poland ranks slightly above the average, and



Source: UTK (Railway Transport Authority).

Figure 1: Share of subsidies in the average access charge for PKP PLK SA infrastructure in the 2005–10 period

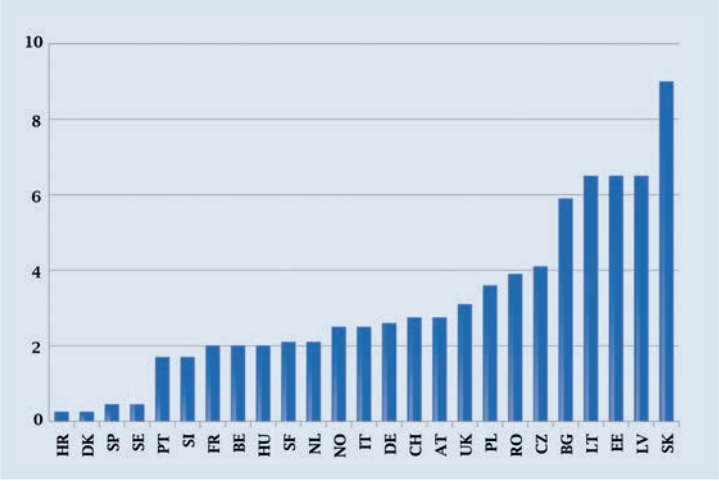


Source: European Transport Policy – Progress and prospects.

Figure 2: Average access charges for intercity passenger trains in EU Member States in 2008

does not differ significantly from countries with a high degree of market liberalisation in the freight segment, e.g. Germany or the UK, who reported increases in freight traffic in 2008. At the same time, Polish charges are considerably higher than those in Sweden, for instance, (where almost all infrastructure maintenance costs are covered by the state) or France. Despite such low charges, e. g. French railways report steady declines in freight traffic.

The opposite tendency can be seen in the passenger sectors of France, Germany or the UK. Despite relatively high charges, these countries are reporting increases in passenger operations. Until 2008, Poland also reported increases in this segment, however, notably with



Source: European Transport Policy - Progress and prospects.

Figure 3: Average freight access charge in EU Member States in 2008

much lower tariffs. This means that demand for rail services is not only determined by access charges (though this has a significant impact in terms of the price – demand relationship in the long term), but also other parameters, such as infrastructure quality, quality of transport services provided, value-added services, movement speed, logistic services, regularity, punctuality and reliability of service. In addition, much depends on the conditions of intermodal competition; in recent years, Poland has seen a gradual decline in the volume of rail transport, offset by an increase in road transport. According to data available, during the economic crisis affecting all areas of the economy, railway transport declined whereas road transport continued to increase.

1.2 Restructuring of the state-owned company "Polskie Koleje Państwowe" (PKP)

In the 1990–2003 period, the state-owned company "Polskie Koleje Państwowe" underwent several stages of restructuring and transformation. In the early 2000s, Poland faced necessary adjustment decisions in the railway sector related to EU accession. The decisions concerning the "old" PKP were then affected by three main considerations:

– the need for Poland to comply with the EU recommendations regarding the separation of infrastructure from operations and the provision of conditions for open access to rail infrastructure for different domestic and foreign operators (Directives 91/440/EEC, 2001/13/EC, 2001/14/EC);

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Road transport	74,403.0	74,679.0	78,160.2	110,481.0	119,740.0	136,416.4	159,527.0	174.2	191.5
Rail transport	47,913.0	47,756.0	49,392.2	52,052.9	49,663.9	53,291.0	53,923.1	52.0	43.5

Source: GUS (Central Statistical Office) Statistical Yearbooks

Table 2: Tonne-km by road and rail 2001 – 09

- the aim for institutional separation of rail passenger transport services of general interest (regional services), which continuously requires financing support from public budgets (Council Regulation (EEC) No. 1191/69, Council Regulation (EEC) No. 1893/91);
- creation of the opportunity for partial privatisation of the rail sector, with the state retaining full control of rail infrastructure.

In meeting the recommendation contained in Directive 91/440/EEC to separate "infrastructure" from "operations" and being aware of the existence of different models of such separation in Europe, Poland selected and implemented a holding model, whereby rail infrastructure was unbundled to form a commercial company partly owned by PKP SA (a holding company) and partly by the State Treasury, with no privatisation for the company. This model is currently in place in countries such as Germany, the Netherlands and Austria. Consequently, the rail infrastructure operator in Poland is the company Polskie Linie Kolejowe SA (PKP PLK SA), while the main freight operator is the company PKP Cargo SA, and the main passenger rail operators are the companies PKP Intercity SA and Przewozy Regionalne.

From the beginning of its operations, the PKP SA holding group has faced four problems, which were not resolved by the 2000 restructuring act, namely:

- financial problems in the operation of rail passenger transport services of general interest;
- historic debt of the state-owned enterprise PKP;
- difficulty in transferring rail properties to the new companies that are necessary for their operation, through contributions in kind;
- a burden of excessive fixed assets, including a large number of housing units and plots of land.

The four areas mentioned above determined the direction of the PKP reform in the years 2004–10. During the period 2007–08, a concept was developed in Poland to transfer regional rail operations to *voivods* (i.e. regional governments). Problems with financing this segment of rail transport had been accruing for years. In 2004, after a reform of local-government financing, the organisation and financing of passenger rail operations became the responsibility of *voivods*, of which there are 16 in Poland. However, in 2004–08, the *voivods* had insufficient funds in their budgets for that purpose, which gave rise to major problems, conflicts, protests and even strikes, as the company PKP Przewozy Regionalne, having insufficient financial backing, started seeking to close down a number of loss-making local services. In such a situation, the government decided to relieve PKP Przewozy Regionalne of its debt (about PLN 2.2 billion) and to transfer 100% of its shares to regional governments, whilst increasing financial backing for public service contracts made by *voivods* with that company, through an increase in deductions from corporate income tax (by 0.75%) retained at the local level.

At the same time, an investment programme was prepared for Przewozy Regionalne with a value of PLN 7.5 billion up to the year 2020, of which the central government will directly finance about 60%. The transfer of shares in Przewozy Regionalne in December 2008 to *voivods* was preceded by the allocation of locomotives, workshop facilities and drivers to PKP's three carriers, i.e. Cargo SA, Intercity SA and Przewozy Regionalne. Until December 2008, locomotives hauling freight and passenger trains including drivers were controlled by PKP Cargo S.A. In the previous years, the Train Drivers' Union had blocked necessary transfers of traction stock, workshops and drivers between carrier companies.

Transfer of ownership of regional rail operations to voivods is unprecedented in the European Union as other countries simply transferred the responsibility for financing and service specification. In Poland, the reform is connected with the country's general decentralisation policy and the transfer of an increasing range of tasks to local governments. It should also be noted that the reform has not effectively resolved all problems involved in organising and financing regional rail operations, mainly due to the conflict of interests between the 16 co-owners of Przewozy Regionalne. Therefore, the present stage of regional rail reform in Poland seems temporary and Przewozy Regionalne will probably soon be divided into smaller companies (an arrangement preferable to the regions), which could subsequently undergo partial or even full privatisation.

The problem of the historical debt of the state-owned enterprise PKP was not the main concern of the government's interest after the establishment of PKP SA.[2] It was believed PKP SA should itself pay the debt with the funds it derives from the sale of real estate properties and the privatisation of companies. However, quick sale of assets and privatisation of rail companies was not possible. In 2009, government decided to provide financial backing to PKP SA for debt repayment (parliament passed a relevant Act at the beginning of 2010). This provides for the minister of infrastructure, acting on behalf of the State Treasury, to buy some of PKP PLK SA shares from PKP SA through the Rail Fund[3]. Funds obtained this way will be used to support the payment of the historical debt of PKP SA. The Ministry of Infrastructure, together with PKP SA, devised a scheme for repaying PKP's legacy debt, which will be spread over the years 2010–15.

The PKP debt repayment scheme also has an additional important objective. By acquiring shares in PKP PLK SA, the state is gaining an increasing control over the company managing the rail infrastructure in Poland. Currently PKP S.A exercises voting rights attached to about 70% of shares in PKP PLK S.A., while the rest belongs to the State Treasury. The holding group model will thus be phased out with regard to rail infrastructure in Poland by gradually achieving PKP PLK SA's formal independence from PKP SA.

By solving the PKP debt problem, it will be possible to implement plans for contributions in kind (railway properties) to the different companies forming the group. Starting in 2010, an extensive programme is underway, which provides for the process to be completed by the end of 2013. However, the programme does not include rail infrastructure.

The issue of the target model of rail infrastructure ownership in Poland remains unsolved. Currently, part of the rail infrastructure (railway lines) remains the property of PKP S.A., and another has already been transferred to PKP PLK SA. In many respects, this arrangement is not viable. It seems necessary in the coming years to adopt a solution whereby the State Treasury becomes the sole owner of rail infrastructure, while PKP PLK SA will only be a manager of that infrastructure operating under maintenance contracts with the State Treasury.

In the years 2004–09, no major company of the PKP SA Group was privatised in Poland, despite quite optimistic plans made as early as 2001. PKP SA, together with the Ministry of Infrastructure, has prepared an extensive privatisation programme for railway companies for the years 2010–15, under which PKP Cargo SA, PKP Intercity SA, PKP Energetyka SA and

[2] At the end of 2009, the debt amounted to about PLN 6 billion, i.e. about €1.5 billion, which was not much by European Union standards.

[3] The Rail Fund is a financial support instrument to rail transport in Poland. It was set up by a special Act at the end of 2005. It consists of 20% "fuel charge" collected additionally on the sale of all liquid fuels in Poland.

several other companies are to be privatised. Today, in 2010, it is hard to guess how effective the programme will be, owing to the fact that privatisation of such large companies stirs up emotions around social issues (trade unions) and political ones in any country.

Since its establishment, PKP SA has also been wrestling with the problem of redundant fixed assets, including a large number of housing units and plots of land, quite characteristic of "old" railway enterprises. The privatisation of such assets has been delayed owing to complicated legal situations, welfare problems of people occupying railway flats, the location of a large part of those flats directly on railway rights of way, as well as the situation in the property market in Poland as a whole. It seems that further commercialisation of these assets will continue until 2020. In order to streamline the process, PKP SA set up two funds dedicated to the management and commercialisation of real property in 2010.

To sum up, it can be concluded that the general structural policy of the government as the sole shareholder of PKP SA is aimed at solving ownership problems, privatisation, gradual transfer of the company's tasks to the infrastructure manager (PKP PLK SA) and making PLK independent of PKP SA, i.e. a gradual reduction of PKP's role as holding company of the railway group. After 2015, subject to solving the problem of debt and completion of the privatisation programme, suitable conditions may emerge for the transformation of PKP SA into an independent governmental agency involved only in further restructuring of redundant railway assets.

1.3 Regulatory system

When joining the European Union on 1 May 2004, Poland already had a developed regulatory model of railway transport consistent with the First Railway Package, set forth in the Rail Transport Act of 28 March 2003, which guaranteed equal treatment of all rail operators irrespective of their size and ownership sector. In general, Poland joined the European Commission's trend towards far-reaching structural reforms of rail transport, irrespective of the fact that several other countries of the then EU15 did not support the reforms. Several years later, Poland became one of the leading European countries to establish the legal and regulatory conditions for the abolishment of monopolies, general liberalisation and free access to the railway network for independent operators.

The infrastructure manager (PKP PLK SA) carries on activities involving the allocation of train paths to rail operators and providing access to necessary rail infrastructure. Hence its primary duty, strictly specified in the Act, is to provide access to rail infrastructure based on requests from licensed rail carriers on an equal treatment basis. Train path allocation and the use of allocated paths are governed by special rules of procedure announced to the general public. Rail carriers to whom specific train paths have been allocated in a given timetable under the rules of procedure and on their request enter into an obligatory agreement with the infrastructure manager. This agreement sets forth, among other things, the terms and conditions for the use of the allocated paths and, in particular, charges for the use of paths. The infrastructure access charges are set out in a special price list prepared by the infrastructure manager, approved by the president of the Rail Transport Authority and announced to the public with due notice.

In accordance with Directive 2001/14/EC and the Rail Transport Act of 2003 implementing the directive, the Rail Transport Authority (UTK) was established in Poland, headed by the president appointed by the chairman of the Council of Ministers (prime minister), based on a

proposal from the minister in charge of transport, i.e. currently the minister of infrastructure. Thus the UTK is a central authority of governmental administration, and its terms of reference include: 1) regulation of rail transport, 2) licensing rail transport, 3) technical supervision of the operation and maintenance of railway lines and railway vehicles, 4) rail traffic safety and interoperability in rail transport.

During the 2004–09 period, most recent EU legislative acts affecting railways were implemented in Poland. This applied, in particular, to the provisions of the Second and Third Railway Packages. The Act adopted provisions on train driver licensing, and, as of 1 January 2010, the Polish market became fully open to international passenger rail operations with a cabotage option. In December 2009, Regulation (EC) No 1370/2007 on public passenger transport services by rail and by road entered into force. Poland has decided (following much debate) to support the proposal for a regulation concerning a European rail network for competitive freight (freight corridors), which was under deliberation by the European Parliament at the beginning of 2010. On the other hand, Directive 2008/57/EC on the interoperability of the rail system within the Community has not been implemented in Polish law so far.

In general, it can be concluded that the rail transport regulatory system established in Poland is conducive to the rail demonopolization policy and creates legal and regulatory conditions for the development of competition in that branch of transport. Certain difficulties or even controversies could not be fully avoided, in particular with regard to the recommendation under Article 6 of Directive 91/440/EEC on separation between rail infrastructure and service operations, the minimum requirement of which is the separation of accounts. However, Member States may go further, separating the activities by establishing completely separate organisations (undertakings), a step that is an optional solution only. In addition, there is a total ban on cross-subsidisation between the two segments, which has to reflect in the accounts of each of them.

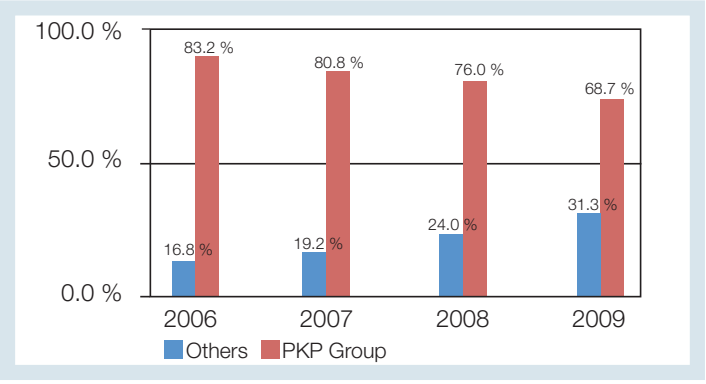
Despite the existence of certain interpretation difficulties nearly throughout the whole of the European Union regarding the nature and intention of Article 6 of Directive 91/440/EEC applicable to the separation of infrastructure management from service operations, far reaching and – it must be added – correct legislative solutions have been adopted in Poland. The provisions of the Rail Transport Act introduced the obligation for rail infrastructure to be operated by an infrastructure manager separated in legal terms as well as a general ban on any rail service operations by the infrastructure manager (with some exceptions). However, in 2008–09, in verifying the implementation of the rules of the First Railway Package by the Member States, the European Commission accused Poland (and several other countries) of incorrect implementation of those provisions concerning independent management of rail infrastructure, claiming that the Polish infrastructure manager, i.e. PKP PLK SA, is a subsidiary of PKP SA, as the latter company holds more than 70% of the capital and voting rights at the General Meeting of Shareholders of PKP PLK SA.

The position of the European Commission on Poland seems rather controversial in this case. The Polish rail infrastructure manager, i.e. PKP PLK SA, has been independent of PKP SA since the establishment of the holding group in 2001. This is achieved through specific statutory provisions, in particular due to the fact that the Supervisory Board of PKP PLK SA is appointed among persons appointed by the minister of infrastructure (and not by PKP SA, which has the majority of voting rights at the General Meeting of Shareholders of the company). Then the Supervisory Board appoints the Management Board of PKP PLK SA. This way, the majority shareholder, i.e. PKP SA, has no actual influence on the composition of the governing bodies of PKP PLK SA, and the infrastructure manager takes its decisions

completely independently of PKP SA, based only on statutory/regulatory provisions. The Commission's position on Poland may also come as a surprise because there are countries in the "old EU15" where, with the existing legal arrangements, the infrastructure manager is by no means independent of the "old railway enterprise".

1.4 Current structure of the rail transport market

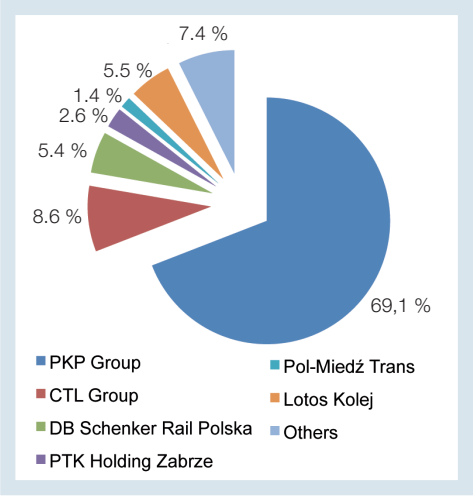
Following Poland's accession to the European Union, the existing rail operation concessions were substituted by licences, which are a milder form of rationing access to the market. Since then, there has been a substantial increase in activity of new railway carriers in Poland, especially in the private sector. At the end of 2009, licensed freight operations were carried out by 41 undertakings, including 40 on standard-gauge lines and one on a broad-gauge 1520-mm line – PKP LHS sp. z o. o. (Broad Gauge Metallurgy Line). The Polish rail freight market is relatively new. Companies of the PKP Group, i.e. Cargo SA and PKP LHS sp. z o. o. play a dominant role in the market, but their market share measured in tonne-kilometres has declined steadily in recent years from 83.2 % in 2006 to 68.7 % in 2009, as shown in Figure 4. The figures are indicative of increasing liberalisation of the Polish rail freight market. Private freight operators in the Polish market have imposed strong competitive pressure on PKP Cargo SA, especially in the bulk trainload service segment (liquid fuels, chemicals, metallurgical products, partly coal). One can expect that such pressure will now be maintained, and new operators will want to increase their market shares each year. This places PKP Cargo SA in a difficult competitive position, and in some segments it has already been actually forced to surrender freight to new operators. The goods transport market continues to see numerous transfers of ownership.



Source: GUS (Central Statistical Office), UTK (Rail Transport Authority), own calculations.

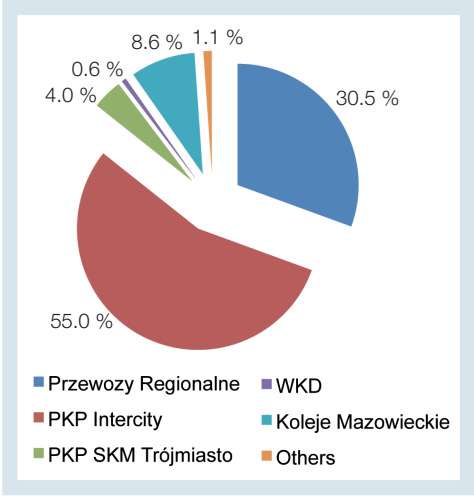
Figure 4: Rail freight market share in Poland in 2006–09 – transport performance in tonne-km

In January 2009, the German Deutsche Bahn Group bought a 97.67 % stake in the company PCC Rail registered in Poland, which meant that, in that year, the German national railways took over – under the DB Schenker Rail Polska brand – a 23.1 % market share in terms of the freight volume carried and 5.3 % in terms of tonne-km. A further process of market consolidation is also in progress in line with previous expectations. One example is the taking over by the company OREN KOL-TRANS Sp. z o.o. of all freight operations previously conducted by PKN ORLEN, focused mainly on specialised refined petroleum products. It seems likely that, despite the fact that there are more than 40 freight carriers in Poland, the market will ultimately develop into an oligopolistic structure dominated by 4 to 6 undertakings concentrating about 90% of freight, with the existence of a larger number of small carriers whose market share will not exceed 10 %. The rail freight market split in Poland in the years 2006–09 by carrier is shown in Figure 5.



Source: GUS (Central Statistical Office), UTK (Rail Transport Authority), own calculations.

Figure 5: Rail freight market split in Poland in 2009 by carrier – transport performance in tonne km



Source: GUS (Central Statistical Office), UTK (Rail Transport Authority), own calculations.

Figure 6: Rail passenger services market split in Poland in 2009 by carrier–transport performance in passenger km

It should be noted that, with the emergence of foreign rail freight operators in Poland, price dumping practices have appeared in the Polish market – a phenomenon previously unknown – which bears testimony to an increasingly tough competitive struggle. 2009 was a period of decline in rail freight in Poland, as well as in many European countries, especially in international and transit operations. In international rail freight in 2009, with 14 carriers active in the market, a total of 52.6 million tonnes of goods were transported, with a transport performance of 15.2 million tonne-kilometres. Compared with the previous year, the operations dropped by 26.9% and 32.5% respectively. The decline in transit traffic in Poland in 2009 was even greater, representing 47.6% of the tonnage carried in 2008 and 45.7% in terms of transport performance. A significant decline in freight operations was also reported in intermodal transport. In 2009, with 7 active carriers, a total of 4.8 million tonnes of goods were carried, which meant a decline of 34.4% compared with the previous year, with transport performance of 2.2 billion tkm, which meant a drop of 36.9%.

In the Polish rail passenger market, there are currently 14 licensed carriers, disregarding very small narrow-gauge rail operators, most of which operate only local services. The companies operating nationwide are PKP Intercity SA and Przewozy Regionalne. The PKP Group has still retained a local carrier PKP Szybka Kolej Miejska w Trójmieście sp. z o. o. (SKM). Major carriers also include "Koleje Mazowieckie – KM" sp. z o. o., a company owned by the local government of the Mazovian Province, the companies Warszawska Kolej Dojazdowa and Szybka Kolej Miejska w Warszawie (owned by City of Warsaw). The other passenger carriers, including three DB-owned companies, i.e. DB Schenker Rail Polska S.A., DB Schenker Rail Rybnik S.A. and Usedomer Bäderbahn GmbH, have small market shares. Figure 6 shows the split of the rail passenger market in 2009 by carrier. Given the shares held by the different entities in the transport market, it is worth noting significant strengthening of the position of PKP Intercity S.A., which results from taking over the intra-regional transport segment from the company Przewozy Regionalne as part of the transformations completed at the end of 2008.

With some exceptions, the passenger rail segment in Poland is unprofitable. Under such conditions, it is difficult to create real competition in the sector without having sufficient public funds to subsidise unprofitable services. Under the new model for regional rail services, which has been developed in Poland in the recent years, voivods have formally taken over the responsibility and obligation for contracting and, where necessary, subsidising rail passenger services in their operating area, and have taken over 100 % of shares in the company Przewozy Regionalne. For regional governments, Przewozy Regionalne is an internal operator according to Regulation (EC) No 1370/2007 and therefore it can be awarded with public service contracts on a direct award basis. On the other hand, some provincial governments in Poland have the policy of competitive tendering procedures for regional rail services, which provides an opportunity for other market players to acquire public service contracts, even at the expense of weakening the position of Przewozy Regionalne, of which they are co-owners. Moreover, in 2009, initiatives were undertaken to establish new operators, e. g. "Koleje Wielkopolskie", "Koleje Śląskie", which are intended to provide passenger service offers complementary to that of Przewozy Regionalne. In the context of Regulation (EC) No 1370/2007 entering into force, such initiatives may streamline the regional services segment as part of the regulated competition model, and contribute to the revitalisation of railway lines and suspended connection in local markets.

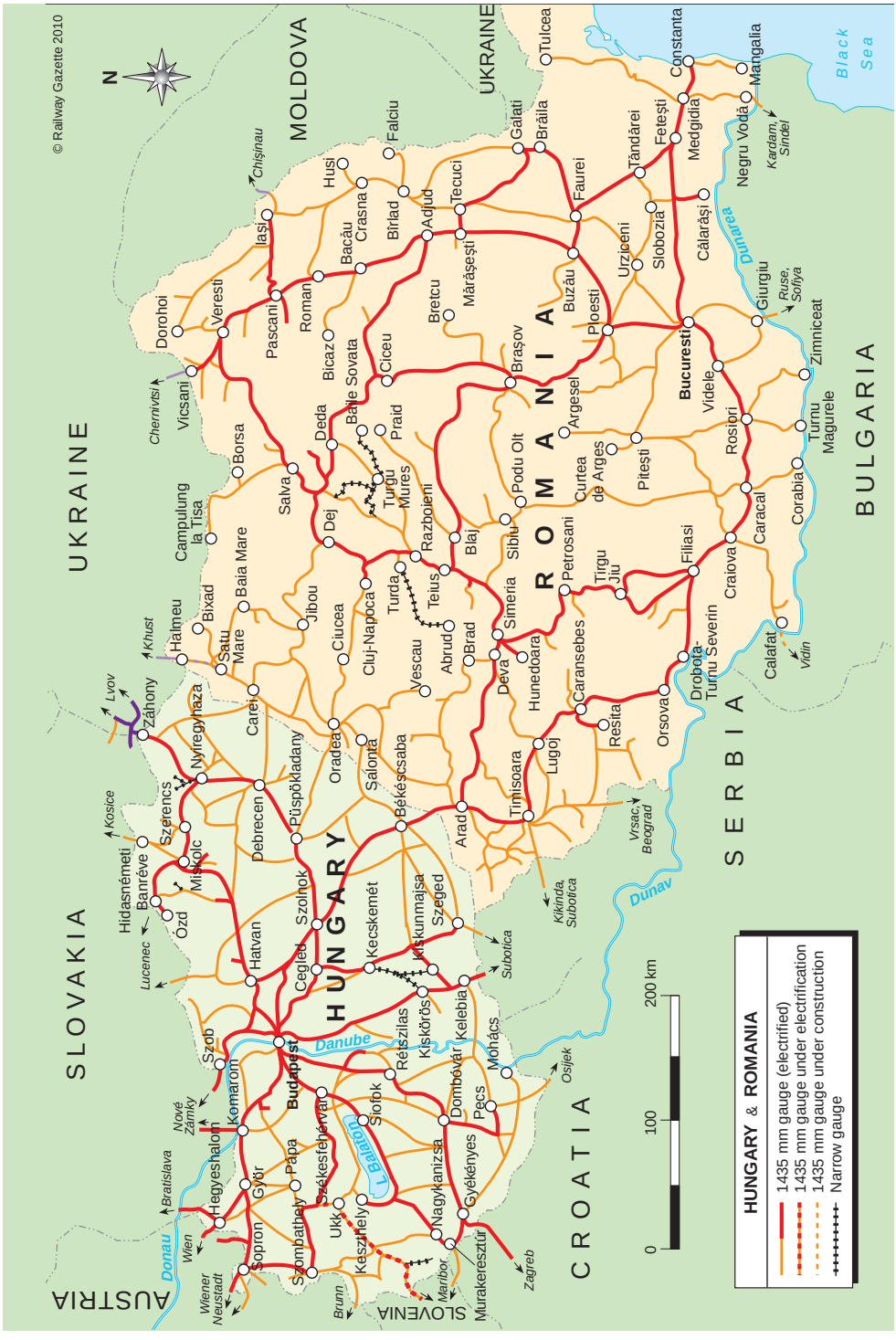
1.5 Evaluation of reforms and direction of further change

Changes in the Polish rail sector have gained momentum in recent years, especially after Poland's accession to the European Union, but the achievement of reforms is still not considered satisfactory. In rail freight services, Poland is one of the leading European countries in terms of market liberalisation. The regulatory model for the rail sector is fully adjusted to the European law.

There have been several stages of Polish rail reforms in the recent years, resulting both in success as well as some failures. There is an urgent need to complete structural changes within the PKP Group referred to earlier, i.e. full separation from the Group of the infrastructure manager PKP PLK SA, provision of necessary real property to the Group's companies, restructuring and commercialisation of redundant PKP assets, and privatisation of the PKP Group companies.

The Polish rail infrastructure still requires huge expenditure on upgrading. The programme of upgrading conventional railway lines currently in progress, with significant support from European funds (2007–13), covers only 1,500-1,700 km of railway lines, while of the currently operated network of more than 19,000 km of lines, at least 5,300 km, classified as part of the TEN-T and covered by AGC and AGTC agreements, are in need of upgrading. Another major weakness of the Polish rail sector is its technically obsolete locomotive and wagon stock, which generates excessive costs of repair owing to the need to maintain inflated staffing levels in workshops, increased wear of spare parts, tools and equipment, and consumption of materials. In future, Polish rail carriers should be provided with better conditions for investing in all categories of rolling stock in order to entirely change the standard of rail customer services and meet contemporary quality requirements.

However, despite existing weaknesses which result from historical considerations, the Polish rail sector ranks third in the European Union in terms of size and transport potential, and Poland itself is a large rail transport market. The EU accession in 2004 undoubtedly opened a great opportunity for development, especially in the rail infrastructure area. In this field, substantial acceleration of development processes can still be expected. Another factor providing new development incentives may be the anticipated privatisation of PKP Cargo SA, PKP Intercity SA and other rail companies, a process which will be backed by appropriate capital.



Source: Railway Gazette International

2 Romania

Marin Stancu

Area (km²) 238,391

	2008		2008
Population on 1/1/2009 (million)	21.5	Freight tkm (billion)	15.2
GDP (€ billion)	139.8	Passenger-km (billion)	6.9
Length of line (1000 km)	10.8	Modal share – passenger (%) Modal share – freight (%)	7.5% 17.9%

Source: Eurostat, Statistical Office of the European Union, 2010

2.1 Introduction

The development of railway transport in Romania has old traditions: from the first railway line with a length of 62 km, placed in service in November 1856, on the route Oravita – Iam – Bazias, the railway network has continually evolved up to the current period, reaching almost 11,000 km.

The major political changes that took place in Romania at the end of 1989, as in all the former communist countries of Europe, led to major economic changes, marked by the radical decentralization of the economy and the transition towards the market economy. The railway transportation system was part of these complex processes of restructuring, reorganization and modernization.

The first step to reorganize the railway system in Romania was Government Decision no. 235/1991 for setting-up the Romanian National Railway Company (SNCFR). It eliminated the status of the railways as part of the governmental structures and created an autonomous *regie*, operating on a commercial basis and financial autonomy from the state. All assets used by the railway transportation system were transferred to SNCFR. In accordance with this legislation, about 100 business units were reorganized under SNCFR that had been previously organized as entities within the various ministries and departments of the government.

SNCFR was in charge of the management not only of the passenger and freight transport, but also of the very diverse non-core activities, such as industrial, research and design,

construction, supply, domestic and foreign trade, medical, educational, social, cultural, and other activities inherited from the absorbed structures.

Later, by means of several regulations, some of these units, which initially had been part of SNCFR, were outsourced and reorganized as independent autonomous *regies* (administrations), joint-stock companies or public institutions. From 1991 to 1998, the initial number of about 200,000 employees of SNCFR was thus reduced to about 130,000. One relevant example of separation is the separation of the activities with regard to the development of the technical standards, monitoring of the technical state of the rolling stock and continued scientific railway research, by creating the Railway Register (REFER).

In 1996, parliament adopted the Transport Law No. 129 on the Romanian railways, setting down the basic principles of the commercial approach to all the railway transport activities in Romania.

2.2 Institutional separation between railway infrastructure, passenger operation and freight operation

2.2.1 Need for reform in railway transportation

The adaptation of a commercial approach to all the transport activities in the railway sector made SNCFR cope with some new challenges. The difficulties were amplified by the complex changes in the whole economy of Romania. Very soon after 1991, SNCFR management and the government found out that the decisions with regard to the reorganization of SNCFR were not sufficient.

The following progress had been made by 1998:

- The volume of transport decreased by 30 percent for freight and by about 50 percent for the passenger sector.
- The transportation capacity of SNCFR remained almost unchanged (same assets and same staff).
- The infrastructure costs did not decrease proportionally to the decreased traffic.
- In 1998, the arrears of track renewal were 3000 km out of a total of 11,800 km railway lines.
- Most of the railway assets (rolling stock fleet, bridges, tunnels, railway installations) were worn out and obsolete, having been used beyond their useful life cycle; and the low investment capacity did not permit any renewal of the assets.
- The number of staff of about 129,000 people in 1998 was in excess of that required, given the volume of activity.
- By September 1998, SNCFR had accumulated financial losses of ROL 600 billion (USD 67.6 million)[1)] and cumulative debts of about ROL 4200 billion (USD 473.2 million), representing mainly debts to the state budget: social security contributions, VAT and other taxes, unemployment fund, etc.

2.2.2 Principles of restructuring and reorganization of SNCFR

The government decided to further promote the reform of the railway transportation system in accordance with the main goals of the European Directives regarding the development of a seamless transportation market based on open access to the infrastructure and competition.

1) This date preceded the euro but when the euro was introduced in 1999 it was worth about the same as a US dollar.

The major political decision to reform the railway system in Romania was taken in 1998; that moment was the turning point to creating a railway based on market needs. The main pillar for the reform of the Romanian railways was the European legal framework existing at that time: the Directives 91/440/EEC, 95/18/EC and 95/19/EC.

The government defined the following major goals for the railways in 1998 to:

- eliminate the cross-subsidies between the passenger and freight;
- reorganize all the transport activities on commercial principles;
- divide SNCFR into a few institutionally separated state-owned companies, with the aim to carry out profitable activities;
- define the principle of open access for more railway undertakings to the infrastructure in Romania;
- define the principle of setting up the tariff policy for freight railway transport without any interference of the state;
- define the public service on passenger railway transport;
- clearly define the responsibility of the state.

The state exercised its rights and obligations through the Ministry of Transport as its representative, appointed to ensure the development of the national transport system, to monitor the performance of the newly created railway companies and to perform regulatory functions as a state authority in the public administration.

2.2.3 Effective reorganization of SNCFR by institutional separation

The adoption of the Emergency Ordinance no. 12/1998 of the Romanian Government on the Romanian railway transport and reorganization of the SNCFR (GUO 12/1998), approved by the Romanian Parliament by means of Law No. 89/1999, allowed the implementation of the reform principles. As a consequence, SNCFR was divided into five institutionally separated state-owned entities, organized as joint-stock companies, (Figure 1), as follows:

- the National Railway Company "CFR"-SA acting as infrastructure manager under concession;
- the National Company for Freight Railway Transport "CFR Marfa"-SA acting as a railway undertaking for freight railway transport;
- the National Company for Passenger Railway Transport "CFR Calatori"-SA acting as a railway undertaking for passenger railway transport;
- the Railway Assets Management Company "SAAF"-SA in charge of the management of the surplus assets resulting from the division SNCFR;
- the Railway Management Services Company "SMF"-SA in charge of the development of the accounting and financial services and the legal services including the management of foreign loans of newly created companies.

The newly created companies received from SNCFR those assets that were necessary for their business, according to the needs of the market.

The surplus assets (about 59,200 wagons, 1,800 coaches, 1,650 locomotives and 55 railcars, a number of maintenance shops, depots, marshalling yards, and various buildings) were transferred to SAAF, as the newly created companies did not need them.

The same policy was implemented for the transfer of staff to the newly created companies; the surplus staff (about 23,000 employees) received a compensation package from the government on the basis of their number of years of service.

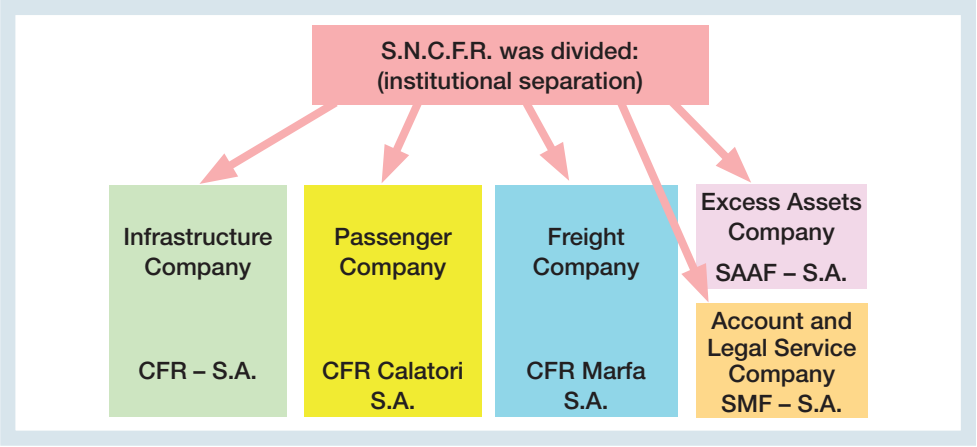


Figure 1: The institutional separation of the infrastructure manager, the freight railway undertaking and the passenger railway undertaking in 1998

The relationships between the newly established companies were exclusively based on commercial contracts.

SNCFR continued to exist as an autonomous *regie*, with a single employee, who was in charge of the management of the historical debts of the railway system at the date of reorganization.

By 1998, Romania was the first country in Central and Eastern Europe to implement the institutional separation between the management of infrastructure (the infrastructure manager) and the provision of railway transport services (the railway undertakings). Romania was also the first country in Central and Eastern Europe to implement the institutional separation between freight and passenger railway services in the same year. In both cases, Romania therefore went beyond the requirements of European Union directives.

2.2.4 The role of Ministry of Transport and Infrastructure

In accordance with the GUO 12/1998, the Ministry of Transport and Infrastructure is the state authority promoting the development of railways and railway safety, with the main tasks to:

a) develop strategies for the development of the railway transport activities;
b) prepare and submit for government approval the development programs for modernization of the railway infrastructure;
c) ensure the conditions for a normal competitive environment for the railway transport between it and other modes of transport;
d) develop the policies for the development of the combined transport;
e) provide the proper management of public railway transport;
f) ensure the management of financial resources allocated from the state budget;
g) assign the public passenger railway service, on behalf of the state.

The Ministry of Transport and Infrastructure exercises the powers of a state authority directly or through delegation of powers by a railway authority and represents the state as owner of all CFR companies.

2.2.5 Setting-up the railway authority

Setting up a railway authority was part of the major reform stage of 1998. It was necessary because the new market environment became more diverse, with more operators and open access to infrastructure. On the other hand, as the functions of the railway companies had been redefined as service providers, the functions related to the transport regulation had to be taken over by a separate entity. As a consequence, the Government Ordinance no. 97/1998 set up the Romanian Railway Authority (AFER) on October 1, 1998.

AFER was created as a public institution under the Ministry of Transport and Infrastructure, funded from extra-budgetary revenues, by including in its structure the Romanian Railway Register (REFER) and the Railway Inspectorate from the ministry.

The role of AFER was to carry out:

- state inspections and controls of traffic safety in the railway sector;
- specific activities of the railway registry;
- licensing of railway undertakings;
- approval and technical supervision of the domestic suppliers of goods and services in the railway field;
- organization of examinations and the issuance of certificates and licences, as appropriate for the railway safety staff;
- investigation of railway accidents and incidents.

It is important to note that Romania created the Romanian Railway Authority in 1998 while the European Railway Agency was established in 2004.

2.3 Continuation of the railway reform

2.3.1 Outsourcing of activities and privatization in the railway transport

One of the major goals of the railway reform was to create joint-stock companies flexible to the market needs and able to adapt their services without policy interventions. One method used for achieving this goal was to better control the costs of activities of CFR, CFR Marfa and CFR Calatori, by outsourcing the non-core activities.

During the period 1999 to 2004, a number of the new joint-stock companies became subsidiaries of CFR, CFR Marfa and CFR Calatori.

- CFR Calatori outsourced to specialized subsidiaries the activities of travelling in sleeping/berth/restaurant/bar cars, ticket sales in travel agencies, the maintenance of the locomotives, the supply storage and distribution unit of railway spare parts and materials. Furthermore, the maintenance of coaches and parcel post services were outsourced to four joint stock companies.
- CFR Marfa outsourced to five joint-stock companies the activities of washing the freight and tank wagons, distribution of railway-transported containers using trucks, production of electrical components for engines, maintenance of locomotives, operation of the freight ferry-boats on the Black Sea and freight transhipment in border stations.
- CFR outsourced to separate subsidiaries the activities related to railway automation, development of IT systems, railway telecommunication, power supply for electric traction as well as operation and maintenance of track.

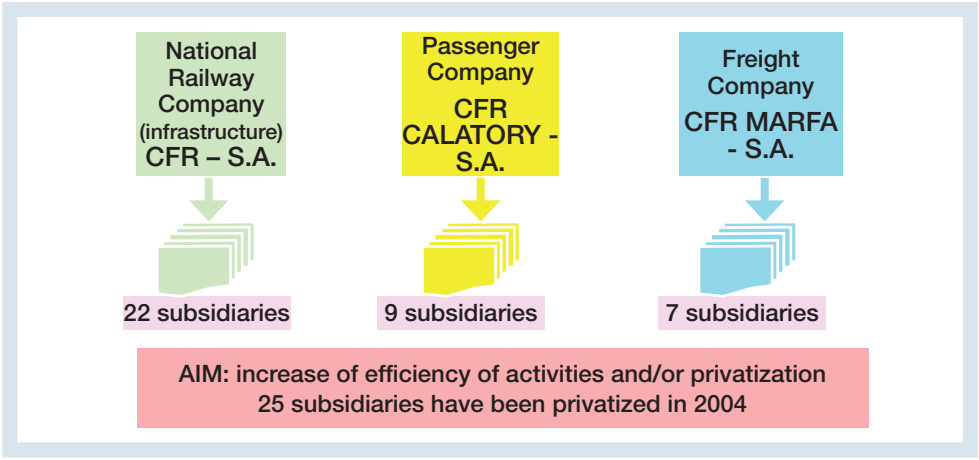


Figure 2: The setting-up of subsidiaries during 1999-2004

In 2004, the government decided to privatize a number of 25 railway subsidiaries and this process was realized in one year after the relevant government decision. This process increased competition on the market of non-core railway activities; moreover, the newly privatized companies extended their offer of products and services on the general market, reducing their exposure on the railway transport market. It saved working places in the railway industry, but decreased the number of staff related to the core railway activities carried out within CFR, CFR Marfa and CFR Calatori.

2.3.2 Consolidation of the newly created railway companies

In 2002, the government decided to absorb the activities of SMF related to accounting and financial services, legal services, and management of the foreign loans within the organizational structures of CFR, CFR Marfa and CFR Calatori, since these newly created companies were by then considered strong enough to manage their own accounting and legal services, and to manage the foreign loans. It helped the new companies to increase the quality of the services in terms of the responsiveness to the market.

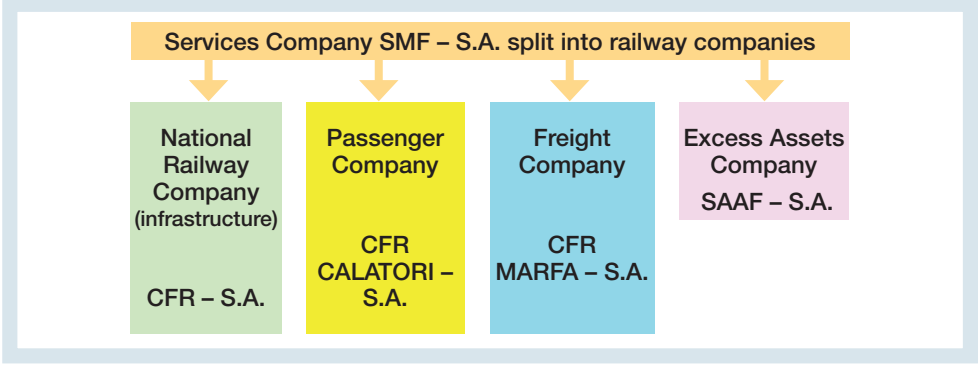


Figure 3: Services Company SMF-SA splits into railway companies in 2002

SMF ceased to exist as a joint-stock company and its staff was taken over by CFR, CFR Marfa and CFR Calatori.

2.3.3 The setting-up of the National Railway Training Centre – CENAFER

The National Railway Training Centre (CENAFER) was set up in 2004 as a public institution under the authority of the Ministry of Transport and Infrastructure.

CENAFER is designated as the national entity empowered to provide all forms of training for the railway sector, including the regular verification of the personnel conducting activities specific to the safety of railway movement, security and quality of the railway transport services and the participation in staff authorizing committees with responsibilities for the safety of railway traffic.

2.4 The setting-up of the bodies in accordance with the EU railway packages

The railway reform started in 1998 has been a long and complex process requiring continuous tuning of the legal and institutional framework based on the feedback of the Romanian transportation market to the reform, and implementation of the provisions of the three packages of the EU Directives issued after 1998.

2.4.1 The setting-up of the Railway Supervision Council (regulatory body)

A Government Ordinance in 2003 stipulated the setting-up of the Railway Supervision Council with the role of the regulatory body as defined by the Directive 2001/14/EC. The appeals against the decisions taken by the regulatory body are to be settled by the relevant law courts. Since 2005, no appeals have been registered against the decisions taken by the regulatory body implying that all its decisions were in accordance with the provisions of the national and European law.

In 2009, the European Commission requested more independence for the Railway Supervision Council and the government decided to release the Railway Supervision Council from the authority of the Ministry of Transport and Infrastructure, as an entity organized under the authority of the Secretary General of the government. Presently, this process is still pending and the appropriate update of the legal environment will be adopted shortly.

2.4.2 Bodies required to comply with the EU Safety Directive

In 2006, through the Law No. 55/2006 on railway safety, transposing Directive 2004/49/EC:

- The Romanian Railway Safety Authority (ASFR) was set up as an independent body within the Romanian Railway Authority (AFER);
- The Romanian Railway Investigation Body was set up as an independent body within the Romanian Railway Authority (AFER). It is functionally independent from the safety authority and from any regulator or procurement entity;
- The Romanian Railway Notify Body was set up as an independent body. After the accession of Romania to the European Union on 1 January 2007, the Romanian Railway Notify Body was approved by the European Commission.

2.5 Railway market opening and current competition

The 1998, Ordinance opened the domestic railway market in Romania both for passenger and freight railway transport. It created the conditions for the licensing of private railway undertakings. In order to gain access to the railway infrastructure, the railway undertaking must sign the access contract with CFR, the infrastructure manager.

2.5.1 Issuing of railway licences

The legal and institutional framework for the licensing of railway undertakings in Romania has been created as from 1998, and has regularly been updated in accordance with the EU directives.

Prior to 1998, licences were issued by the Ministry of Transport. In 1998, the institution designated to issue the railway licences was the Romanian Railway Authority. The requirements for obtaining a railway licence must be in accordance with Directive 95/18/EC.

Law No. 55/2006 was also set up the Romanian Railway Licence Body as an entity independent from any railway undertaking, infrastructure manager, charging body, allocation body and applicant, acting within the Romanian Railway Authority (AFER).

Since 1998, the railway transport licence has entitled the railway undertakings to non-discriminatory access to the railway infrastructure and to all the facilities offered by the infrastructure manager in order to carry out railway transport services, including railway shunting operations under the provisions of the access contract signed with the railway infrastructure manager.

2.5.2 Increasing private railway undertakings

The early implementation of the open access principle to the railway infrastructure allowed the development of strong private sector participation in railway transportation services. The number of private railway undertakings has been continuously increased since 1999 up to the present. Currently, there are 28 licensed private railway undertakings, especially in freight railway transport, with an increasing market share on the railway transportation system, as shown in Figure 4.

Presently, Romania has one of the highest participation rates of the private sector on the railway transport market share in the EU (second place in the EU Member States after Britain concerning the market share of private freight railway undertakings).

In the passenger railway, the market share of private railway undertakings was about 2.5 % in terms of passenger-km in 2009.

2.5.3 Extension of open access to infrastructure for all freight traffic

The transposition of Directive 2004/51/EC was made by means of Law No. 155/2005. Starting on the date of accession of Romania to EU (in January 2007), railway undertakings have been granted access on equitable conditions to the Romanian infrastructure, for the purpose of operating all types of railway freight services. Track access to and supply of services in the terminals and ports linked to rail activities must also be provided to all railway undertakings in a non-discriminatory and transparent manner.

2002	2003	2004	2005	2006	2007	2009
2.2 %	6.6 %	11.2 %	17.5 %	22.4 %	35.3 %	51.4 %

Source: CFR-SA and National Institute for Statistics

Figure 4: Market share evolution for private freight railway undertakings (tonne-km)

2.5.4 Extension of open access to infrastructure for international passenger services

In 2009, the Directive 2007/58/EC was transposed into Romanian law, through OUG 62/2009. Since 1 January 2010, railway undertakings are granted the right of access to the infrastructure in Romania for the purpose of operating international passenger services. In the course of an international passenger service, the railway undertakings shall have the right to pick up passengers at any station located on the international route and set them down at another, including stations located in the same Member State.

The current structure of the railway transport system in Romania is presented in Figure 5.

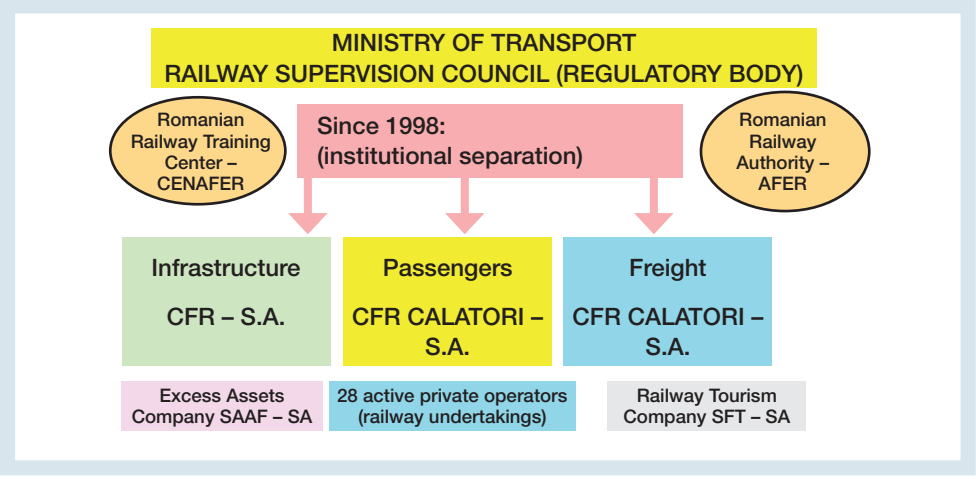


Figure 5: The Romanian Railway System in 2009

2.6 Railway track access charges

In accordance with the provisions of EU railway directives, the methodology for calculation of the track access charges has evolved since 1998 in the attempt to create a reliable instrument for collecting the charges from the infrastructure users.

Between 1998 and 2000, the infrastructure manager and the national railway undertakings calculated the railway track access charges as a global amount, which was separately paid on a lump sum basis by different railway undertakings. The lump sums to be paid by each

railway undertaking were calculated by allocating to each of them the direct costs of railway infrastructure according to the volume of traffic units that were operated.

In 2001, to allow for new entrants, a more precise method of calculation, based on the volume of train-km operated by each railway undertaking, was introduced. Two different values were applied to the train-km, one for freight and one for passenger services, reflecting their different costs.

After the transposition of Directive 2001/14, a new railway track access charge system was approved in 2004. The methodology for the calculation of charges for use of the railway infrastructure is stipulated in the multi-annual contract concluded between the infrastructure manager and the Ministry of Transport and Infrastructure, approved by the government (as discussed below).

This calculation of charges is based on the following charging elements:

a) distance covered by the train;
b) gross tonnage of the train;
c) traffic type - freight or passenger;
d) route of the train;
e) class of the traffic section and
f) supply of electric power for traction.

The traffic sections are divided into classes based on the technical characteristics of each section, as set out in Table 1:

Traffic section class	Speed regime (km/h)	
	from	to
A	121	200
B	101	120
C	61	100
D	0	60
E For lines with freight traffic only	0	60
R For lines with low traffic: traffic volume below 5 trains per day	–	–
I For lines with narrow gauge	–	–

Table 1: Classification of traffic sections

CFR made available the access charge calculation system to the railway undertakings in order to conclude the Access Contracts.

CFR may levy charges in order to ensure compliance with the efficient use of the allocated paths to reflect capacity.

2.7 Financing of railway infrastructure

In Romania, according to the existing legal framework, the railway infrastructure includes the state-owned railway infrastructure (public railway infrastructure), as well as infrastructure in private ownership.

In terms of inter-connectivity with the European railway network, the Romanian railway infrastructure can be:

a) interoperable, allowing open access to the railway undertakings of different Member States, developed in accordance with the technical specifications for interoperability adopted at European level; or
b) non-interoperable, being managed and developed on the basis of specific internal regulations.

The management of railway infrastructure in Romania is provided by the infrastructure manager CFR, which took over the public railway infrastructure under a concession agreement with government.

CFR may lease, upon the approval of the Ministry of Transport and Infrastructure, parts of the non-interoperable railway infrastructure to other legal entities licensed to manage the railway infrastructure and to operate freight and passenger transport. Leasing of the non-interoperable railway infrastructure is performed through competitive open tender. More than 1500 km of about 3300 km of non-interoperable railway lines had been leased to private operators by 2009.

The relationship between CFR as infrastructure manager and the state is regulated by the multi-annual contract concluded with the Ministry of Transport and Infrastructure. The multi-annual contract has to be concluded for a period of 4 years, approved by the government and annually updated, after the approval of the State Budget. The first multi-annual contract was concluded for the period 1999-2003 and the multi-annual contract for the period 2008-2011 is presently in force.

The multi-annual contract includes: (i) the activities of the infrastructure manager for fulfilling the tasks related to the operation, maintenance, repairing, modernization and development of the railway infrastructure, and (ii) the government's responsibilities regarding the adequate operation of public railway transport, including the transfers from the State Budget for railway infrastructure investments.

The multi-annual contract contains the following provisions regarding financing of the railway infrastructure, in accordance with the legal framework:

– The maintenance is provided by the infrastructure manager CFR from its own revenues.
– The state finances the costs related to investment, modernization, development and overhaul of the public railway infrastructure.

2.8 Public Service Contracts

The relationship between the railway undertakings carrying out public passenger railway transport and the public institutions requesting public services is regulated by multi-annual Public Service Contracts concluded with the Ministry of Transport and Infrastructure.

The Public Service Contracts are concluded for a period of 4 years, approved by the government and annually updated, after approval of the State Budget. The first Public Service Contracts were concluded for the period 1999-2003 and the Public Service Contracts for the period 2008-2011 are presently in force. Presently, there are 4 passenger railway undertakings that perform passenger services and have concluded Public Service Contracts; currently, two more operators are about to conclude Public Service Contracts.

The Public Service Contracts mainly include a list of services to be provided, the tariffs for each type of service, and the state compensation for covering public service obligation (the difference between the cost of providing the requested services and the revenues collected according to tariffs approved by the state, with a reasonable profit margin).

2.9 Conclusions

2.9.1 Summary of achievements

In 1998, Romania was the first country in Central and Eastern Europe to implement the institutional separation between the management of infrastructure and the provision of railway transport services, and also between freight and passenger railway services, even if this last principle was not required until 2003 through the implementation of the Directive 2001/12.

The implementation of the reforms has allowed a more sustained upgrading activity than before and increased the quality of railway transport activities. Starting with the reorganization of SNCFR in 1998, freight railway tariffs have been set by the market. The new CFR companies created subsidiaries according to the principle of decentralization of activities and most of them have been privatized, thus increasing competition on the non-core railway activities market.

The institutional separation in 1998 was “the engine” for competition on the railway market. The number and share of private railway undertakings have continuously increased since 1999 up to the present, especially in the freight railway transport. In 2009, the market share of private freight railway undertakings was about 51.4% and Romania comes second among EU Member States, after Britain, in terms of the market share of private freight railway undertakings.

Romania transposed and implemented all of the three railway packages and created all the institutions required by the directives.

Track access charges are levied on a non-discriminatory basis for all the railway undertakings for similar transport conditions and are calculated and collected by CFR as the railway infrastructure manager. The methodology is based on the distance covered by the train, the gross tonnage, the traffic type, and the traffic route, the class of the traffic section and the availability of the electrification systems.

The relationship between the infrastructure manager and the public institutions is regulated by the Performance Contract (a multi-annual contract) concluded with the Ministry of Transport and Infrastructure on behalf of the state for a 4-year period, and is approved by government and annually updated.

The relationship between the railway undertakings carrying out the public passenger railway transport and the public institutions is regulated by Public Service Contracts concluded with the Ministry of Transport and Infrastructure on behalf of the state, also for a 4-year period.

2.9.2 The need for continuation of reform

The reform of the railway transportation system is a complex process in any European country. The major changes started only 10 to 15 years ago and it is too early to make comprehensive evaluations of the results. The process that started in Romania in 1998 created a completely new legal and institutional framework.

However, problems remain. Investment remains inadequate, the rail market is declining and railway companies are financially weak, especially after the economic crisis. Much therefore needs to be done as the reform process, like in many other EU member states, is far from being finalized. Railway reforms are chasing a moving target and the railway reforms can be considered successful only if the outcome is a flexible and nimble railway industry that can adapt to the rapidly changing business environment — without resorting to constant policy interventions.

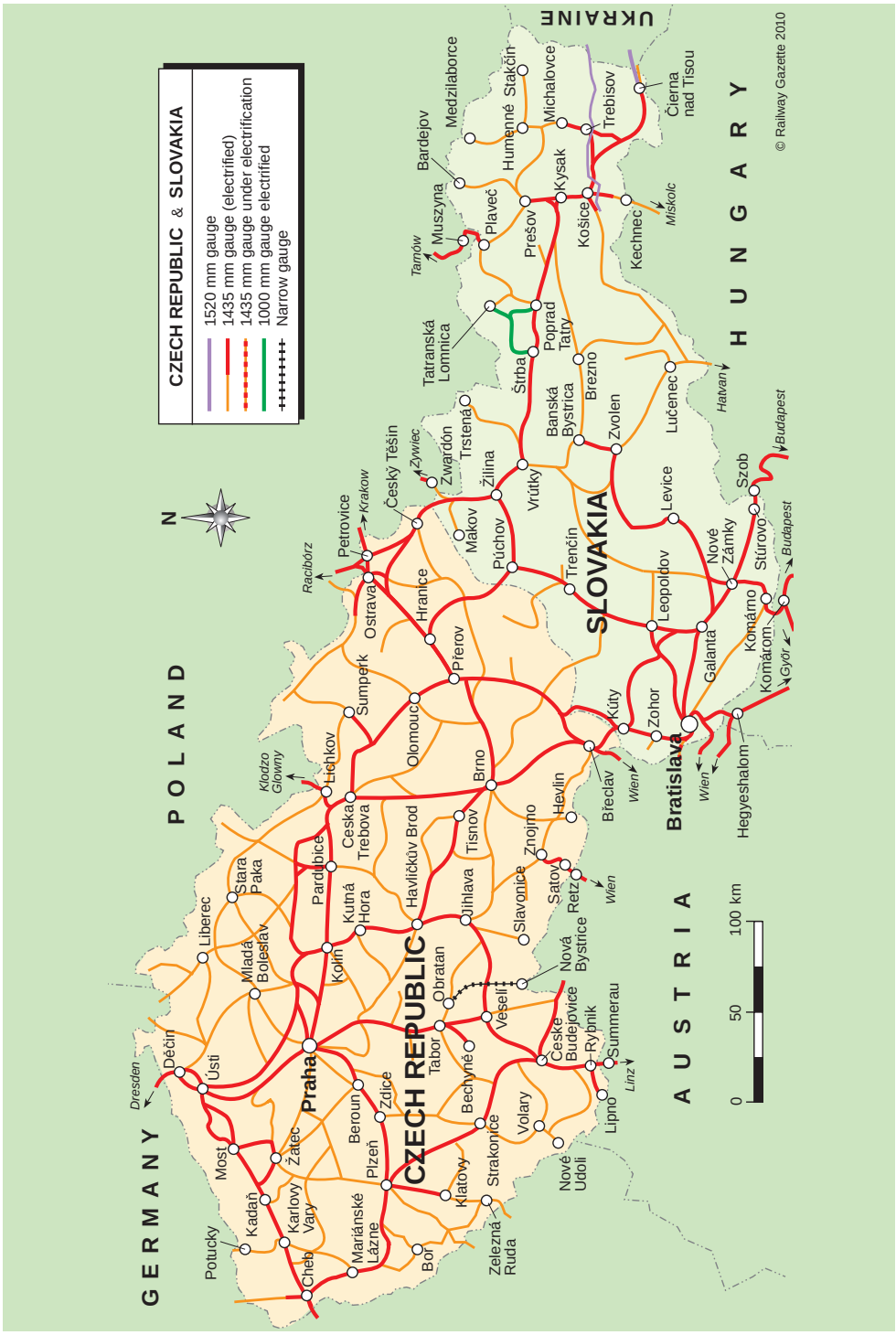
The continuation of the reform in Romania should be focused on three major objectives: (i) an improvement of the framework for financing the railway infrastructure, (ii) increasing the market share of the railway transport, and (iii) the consolidation of the financial sustainability of the railway companies.

The first objective can be achieved by increasing the rate of investment in railway infrastructure in order to stop its degradation and to reach the level of interoperability and quality of services requested by the seamless transportation market of the EU. The level of track access charges should also be reduced in order to make railway transport services more attractive to customers. This should be done by reducing the operating costs of CFR and by increasing the state contribution for overhauling the railway infrastructure, in order to make the Romanian railway network an attractive alternative for international railway transport, especially to the port of Constanta and for transit between Europe and Asia.

The second objective for the continuation of reform — increasing the market share — should be facilitated by taking adequate measures for increasing the predictability of the railway transport services. The legal framework for multi-annual contracts for the railway infrastructure and public service contracts for passenger services should be improved to guarantee the multi-annual allocation of public funds as required by EU directives. It will bring stability of transport tariffs and will give confidence to railway operators and customers also to sign multi-annual contracts with positive effects in planning the investments in rolling stock and developing the business.

The third direction for a continuation of the reform shall be achieved by further strengthening the management of the railway companies as the vital component in delivering on reform. In parallel, the state should strengthen its oversight role in controlling the performance of the railway companies.

Now the reform process is well underway, it must continue based on the signals of the ever changing transport market and, in this context, the government should continuously search for new solutions to improve the railway transportation sector in support of development needs of the country. By continuing the railway reform process, the Romanian railway system will become competitive on the open transportation market of Europe.



Source: Railway Gazette International

3 Czech Republic

Petr Moos[1)]

Area (km²) 78,868

	2008		2008
Population on 1/1/2009 (million)	10.5	Freight tkm (billion)	15.4
GDP (€ billion)	147.9	Passenger-km (billion)	6.8
Length of line (1000 km)	9.5	Modal share – passenger (%) Modal share – freight (%)	7.1 % 23.2 %

Source: Eurostat, Statistical Office of the European Union, 2010

3.1 Introduction

The Czech Republic has one of the densest railway networks worldwide. This fact derives from historical developments. Railway transport and the railway industry have a very long tradition in what is today the Czech Republic, indeed one of the longest in Europe.

In the 1980s, the Czechoslovak State Railways transported nearly 200 million tonnes of goods and over 300 million passengers (figures relate to the territory of the Czech Republic which separated from the Slovak Republic in 1993). By 2008, transport output of the Czech Railways had fallen to 86 million tonnes of goods and 175 million passengers. Despite the dramatic decrease in output, the market share of railways in freight transport remains above 20 %, above the EU average.

The basic drawback in the organisation of railways in the Czech Republic before 2003 was the unclear division of responsibility between the state and the national railway carrier, both in operations and infrastructure. All national railways in Europe had previously been state organisations that have, at one time or another, been used by the state to implement economic and social policies and often to burden them with duties, for which "the states had no money to pay". Unlike other types of transport, state railways had to finance the operation and development of the state railway infrastructure, and to provide public passenger transport

1) Based in part on the chapter written by Jaroslav Soušek for CER's 2005 book "Reforming Europe's railways – an assessment of progress".

services for lower prices than actual costs. This resulted partly in their loss of profitability and poor incentives to meet market demands.

The basic task of the transformation of the Czech railways in the past two decades was to convert the state organisation Czech Railways into a business organisation running its own operations on the transport markets of the Czech Republic and elsewhere in Europe. The task of the state should be to create the conditions for the development of the transport system that satisfy the needs of society and work with the maximum application of market mechanisms. Therefore, it is necessary to create a harmonised market environment, in which carriers of various modes of transport would compete based on equal conditions. But this would require prices to reflect all costs, i.e. costs of transport operation itself, costs of railway infrastructure (recovery for usage of the infrastructure), costs of operational safety and control, recovery of damages from accidents and damage to the environment. This is far from the case now.

3.2 Legal consequences of the transition

The transformation of the state organisation Czech Railways was performed in compliance with legal requirements of the European Union. Initially the “French model” was used in the transformation of the Czech Railways and the successor organisations of the former Czech Railways had a similar position to SNCF and RFF in France. The 2002 Transformation Act (No 77/2002) converted the state organisation Czech Railways into a joint stock company, 100 percent owned by the state. It was expected that the application of the act on transformation of the Czech Railways would make financing of rail transport more transparent and create fair market conditions. The business organisation Czech Railways performs the task of the national railway carrier. Besides this organisation, other railway carriers can gradually establish themselves.

Two basic entities were therefore created initially – the joint stock company Czech Railways (ČD) and the state organisation Railway Infrastructure Administration (SŽDC), both fully owned by the state. In 2008, the government then decided to establish, as a daughter of ČD, ČD Cargo a.s., which operates in the freight transport market. The French model has also been abandoned and SŽDC no longer contracts with ČD for infrastructure maintenance although it still does for traffic management.

3.2.1 Czech Railways joint stock company

The legal responsibilities of ČD are therefore now limited to the performance of rail transport and other activities for business purposes.

3.2.2 Key performance indicators of the Czech Railways Group

The legal bodies of ČD consist of the Steering Committee, the Supervisory Board, and the Board of Directors. Through the Steering Committee, the state exercises its shareholder’s rights as the 100 percent owner of the ČD. The Steering Committee consists of employees of the Ministry of Transport and Communications (three members), the Ministry of Finance, the Ministry of Defence, the Ministry of Industry and Trade, and the Ministry for Regional Development (one member each), all appointed by the government. The Supervisory Board of ČD consists of nine members. Two thirds of them are appointed by the Steering Committee,

KEY INDICATORS	2008	2007
ČD Group		
Total revenues (CZK billion)[2)]	59.559	50.615
Operating profit/loss (CZK billion)	-5.330	51
Profit/loss (CZK billion)	2.344	-597
Total assets (CZK billion)	58.765	55.710
CAPEX (CZK million)	7.900	6.375
Average recalculated headcount	48,592	56,672
Passenger transport (ČD, a.s.)		
Number of passengers (million)	175	182
Transport output (billion passenger-kilometres)	6.8	6.9
Traffic output (million train-kilometres)	120.9	117.5
Average distance (km)	39	38
Occupancy ratio (%)	23	24
Freight transport (ČD Cargo, a.s.)		
Transport volume (million tonnes)	86.19	91.62
Transport output (billion tariff tonne-kilometres)	16.0	17.1
Train output (million train-kilometres)	32.4	33.5
Average distance (km)	185	186
[2)] Exchange rate 2008 €1=26.2 CZK		

one third elected by employees. The Board of Directors of ČD consists of five members and adopts decisions on all matters of the company, unless they are reserved to the Supervisory Board. The Supervisory Board elects the members of the Board of Directors.

3.2.3 The Railway Infrastructure Administration (SŽDC)

The Railway Infrastructure Administration (SŽDC) is legally obliged to:

- ensure the operation of the infrastructure and its operability management;
- maintain the operability of railway control and interlocking infrastructure at the cost of the state, including its updating and development;
- manage the property of the state that was not transferred to ČD;
- settle existing liabilities and receivables of the previous state organisation Czech Railways;
- issue the "network statement" (available at the SŽDC's website www.szdc.cz – also in English) and assign capacity of the railway infrastructure to authorized applicants – this crucial role as capacity distributor is designed to ensure non-discriminatory access.

Under the Transformation Act (77/2002), SŽDC assumed from ČD assets representing the railway infrastructure at the net book value.

SŽDC is a state organisation and, like ČD, is governed by the legal regulation included in the Act (77/1997) on state enterprises. Its bodies are the Director General and the Board of

Directors appointed by the government. The main activities of SŽDC are the supervision of the development, upgrading, maintenance, and management of the railway infrastructure. The division of costs between the infrastructure and operations is determined by a legal regulation – Decree 44/2003 – on the definition of costs associated with the operation of the railway infrastructure.

3.2.4 Access to the transport infrastructure

Starting in 1994, each railway carrier that proves that it has the required professional and financial fitness can obtain a licence and SŽDC is obliged to enter into a contract for operating railway transport with such a carrier. As a consequence, in addition to ČD, there are several new railway carriers, especially in the field of freight transport.

3.2.5 Procurement of licences for railway entrepreneurs

The Czech Republic recognises the validity of licences issued by member countries of the EU. The condition for issuing a licence is the professional and financial qualification and absence of criminal records of the applicant. Insurance is also required. A rail authority issues the licence to the applicant. The Rail Authority is an independent regulatory body, but on technical aspects it has to consult the infrastructure manager, SŽDC.

Upon joining the EU, the Czech Republic established a system of railway infrastructure capacity allocation upon request of an authorized entity. For railway lines owned by the state, the capacity of railway infrastructure is allocated by SŽDC.

The procedure in case of insufficiency of capacity is set out in regulations.

3.2.6 Procurement of safety certificates

The applicable legal regulation on issuing safety certificates to carriers (Carrier Certification) for operating railway transport on national and regional railways is issued by the Rail Authority for a definite period of time. The Carrier Certification substantiates that the carrier:

- fulfils conditions of professional qualification of persons ensuring the operation of railway transport;
- satisfies the conditions for operating rolling stock and the specified technological equipment laid down by the Act on rail systems;
- has an internal organisational structure and management system necessary for ensuring railway transport.

3.2.7 Track access charges

Railway infrastructure capacity is charged according to Act 625/1990 on prices. The price assessment is issued every year by the Ministry of Transport and Communications in the Price Bulletin.

The basic approach taken to infrastructure charging in the Czech Republic is described by the Ministry of Transport as being based on short run marginal costs of using existing infrastructure including scarcity and congestion.

The Ministry reports that revenues from charges were, in 2006, 65 % of total infrastructure expenditure (including that paid from loans and grants), and 100 % of marginal costs. It also reports that charges are designed to partly cover the following categories of cost:

– traffic management
– maintenance

The charges do not cover renewals, investments, accident costs or noise costs. Those costs not covered by charges are covered by the central government budget.

The following kinds of charges are levied:

– a variable charge per train-km – applied at different rates to both passenger and freight trains and accounting for approximately 45 % of charging revenue;
– a variable charge per gross tonne-km – applied at different rates to both passenger and freight trains and accounting for approximately 55 % of charging revenue.

Charges are much higher for freight trains than for passenger trains. For example, for 100 km, a 300-tonne passenger train has to pay 1,720 Kč (€1=24 Kč) whilst a 1,500-tonne freight train pays 13,675 Kč. Charges are 10–20 % higher for international trains than for the domestic intercity trains, which are in turn 10–30 % higher than for regional trains.

There is no fixed access charge (independent of traffic intensity).

3.2.8 Contract for the operation of railway transport

Based on the licence, the granted capacity of railway infrastructure and the Carrier Certification, the infrastructure manager SŽDC concludes a contract for the operation of railway transport with the corresponding rail operator. The rail operator is obliged to enter into such contract with SŽDC; in the event of disputes, the Rail Authority shall decide such disputes upon motion of one of the parties to the contract. The decision of the Rail Authority shall replace provisions of the contract. The contract usually covers the following legal obligations:

– the lines covered, the type, quantity, time schedule and weight of trains and conditions for change;
– the type of rolling stock used;
– the extent of necessary route knowledge and local conditions (station regulations), provisions of internal regulations for the rail operations by professionally qualified personnel;
– the method of execution and responsibilities for the execution of technical inspections of vehicles, trains and brake tests;
– measures taken in the event of emergency events;
– mutual responsibility of both parties to the contract and the method and competence for mutual inspections;
– the payment for using railway infrastructure and for other services provided to the carrier;
– carrier's liability to indemnify for damages resulting from the operation of railway transport;
– penalties for breaching contractual obligations, especially the interruption of rail operation;
– the period of validity and the possibility of revocation of the contract.

Unless the transport is performed using block trains or limited kinds of goods are transported, the contract for operation of freight transport should also include:

– the output of the railway stations where trains are shunted;
– specification of attraction zones of shunting stations;
– routing of wagons;
– the method of organising the utilisation of empty wagons.

The process of appeal of applicants against SŽDC or the rail carrier, when making a contract on operation of railway transport, is regulated by Act 266/1994 on rail systems, as amended. The appellate authority is the Rail Authority.

Within 15 days from publication of the network statement, the applicant for allocation of railway infrastructure capacity can request the Rail Authority to review it. The applicant for the allocation of railway infrastructure capacity, is, within 15 days after delivery of the statement of the capacity distributor (SŽDC), authorized to request the Rail Authority to review the process of allocation of railway infrastructure capacity, including its results and the method of setting prices.

If the Rail Authority discovers mismanagement during the elaboration of the statement and contained criteria or during the allocation of railway infrastructure capacity, including its results and the method of setting prices, it has the power to change the network statement, the allocation of railway infrastructure capacity and the method of setting access charges.

3.3 Competition on the railway market

In the Czech Republic there are five passenger operators (including the “national” operator) and 13 freight operators (including the “national” operator) who pay infrastructure charges; but freight trains carrying materials for maintenance do not pay any charges.

New entrants carry nearly 18 % of rail freight traffic. Business in railway freight transport on the networks of national and regional railways in the Czech Republic is fully liberalised. Access to the railway infrastructure is granted to every authorized carrier until capacity is exhausted.

Rail business activities have mainly been started by entities with long-term experience in this kind of transport, e.g. with factory (sidings) transport. These are usually the transport companies of large chemical industrial enterprises, mining and metallurgical works. Furthermore, new entrepreneurs – often from within the Czech Railways – have established independent businesses, often using foreign capital. Some of these are national branches of international business entities (e.g. Veolia). A majority of these carriers focus on integrated transport of a certain kind of bulk material (coal, chemical raw materials and fuels).

Public passenger transport service is operated by only a few new entities, mostly operating just regional transport. Veolia Transport is currently the only company running long-distance passenger transport on the line Binz – Berlin – Liberec. However, there also is an assumption that this company will expand passenger transport to other long-distance lines as well. Business conditions in regular passenger rail transport services stand for relatively low profits – without subsidies in the framework of public service contracts, it would be impossible to run this kind business. Therefore, new entrants carry less that 1 % of public passenger railway transport. The monopoly of ČD a.s. in rail passenger transport was supported by the Czech Government in 2009 by “The Memorandum about stable financing in public rail transport in

the regions", which requires regional officials to choose ČD a.s. as the regional operator for the next five years.

3.4 State interventions accompanying the transformation

Several measures have been undertaken by the state to accompany the railway reforms. Firstly, the Czech Republic assumed full responsibility for financing the upgrade and expansion of railway infrastructure by means of the dedicated State Fund of Transport Infrastructure, based on the Special law (Act 104/2000). Secondly, the Czech Republic has settled the debt of the state organisation SŽDC by issuing government bonds. Last but not least, a programme of state assistance was adopted to eliminate the social impact caused by the termination of employment contracts of about 16,000 employees of ČD a.s. at the end of 2008.

Since the accession to the European Union, the Czech Republic has faced difficulties to cope with a considerable increase in road freight transit traffic. It is necessary to create promptly a competitive environment on the whole transport market. The market is distorted considerably by the fact that different modes of transport do not have to cover comparable costs. In particular, the costs on maintenance of infrastructure, safety provisions, and the protection of the environment vary between modes and are not charged in the same way. Unlike heavy goods vehicle transport, railways cover most of these costs. As the Czech Republic is unable to solve this task by themselves, it must be solved at the European level. Although the European Union has been endeavouring to find a solution for quite some time, its 2006 Directive prevents member states from charging for the external costs of heavy goods vehicles.

3.5 Evaluation of the transformation

Regional governments have been choosing ČD a.s. as their regional operator, without tendering. Similarly, the Czech Government decided to choose ČD, a.s. as long-distance operator. These actions strongly limit competition in public transport.

ČD, a.s. continues to improve its economic management. The trends and economic results in 2007 and 2008 have been described earlier in the chapter. From these figures it is possible to see the growth of profitability. This has been achieved through the transformation of ČD into a strategic holding. The transformation has been realised in two main stages. Service and utility activities were separated into subsidiary companies in the first stage. This model now allows these companies to accelerate expansion and renewal of technical engineering facilities. The aim is also to improve the overall position of the Czech Railways in individual activities and in the Railway Research Institute and ČD Telecommunications, in which the Czech Railways has increased its ownership share. The second and final stage of transformation of the Czech Railways has been achieved by the formation of a strategic holding and by establishing companies focused on the following main activities: regional passenger transport, long-distance passenger transport and freight transport.

3.6 Current prospects

It is hoped that, in consequence of the new investments and independent business activities of the Czech Railways, the economic situation will improve every year and thus, within 10 to 15 years, its equipment will reach the level of modern European railways.

In the Czech Republic, the way the railways are perceived has changed during recent years: it is now being considered as a transport system with good prospects, where partial changes are gradually taking place. The document "Transport policy of the Czech Republic for the period 2005–13", agreed by the Czech Government in 2004, correctly assumed that railway transport should start focusing especially on fast and high quality long-distance and regional lines running at regular intervals, and on quality suburban and urban lines, which would be included in integrated transport systems. Transport policy further directs all its steps towards establishing rail transport as the backbone of these systems. The majority of Czech regions have established integrated transport systems and the remaining regions are in the final stages of creating them. Railways have become an essential part of these transport systems. In many regions and cities, railways are included in the integrated transport system, which makes the railways more attractive for passengers, ensures they are used more often and thus contributes to the relief of the congested road system.

Growth prospects are now good, particularly in freight. The freight transport market is divided mainly between road (75.5 % of tonne-km) and rail (20.8 %). The remaining 3.7 % are carried mainly by inland waterways. Strengthening the intermodality in freight transport and creating public logistics centres are both important targets of the transport policy. For this, it is necessary to provide closer links between railway, water and combined transport and their logistics processes, and also new flexible, efficient, and cheaper technologies for transferring consignments from one mode of transport to another.

Eigenanzeige

Source: Railway Gazette International

4 Estonia

Raivo Vare

Area (km²) 45,227

	2008		2008
Population on 1/1/2009 (million)	1.3	Freight tkm (billion)	5.9
GDP (€ billion)	16.1	Passenger-km (billion)	0.3
Length of line (1000 km)	0.9	Modal share – passenger (%) Modal share – freight (%)	2.1 % 40.0 %

a) Eurostat, Statistical Office of the European Union, 2010

4.1 Introduction and short historic overview

The origin of the Estonian railways dates back to the middle of the 19th century. In 1845, the owner of Narva textile factory presented a plan for the construction of a railway, running from the capital of the Russian Empire, St. Petersburg, to the border town of the Estonian province Narva and onward to the Minister of Finance of the Russian tsarist government. This railway was built with private funds. Later, as part of the tsarist policy of construction of railway infrastructure with the aim of providing also for massive military supplies, it was extended to the main military ports of that time – Tallinn and Paldiski. Traffic began to run on this railway in 1870. By 1887, the railway was extended to the southern border and the currently existing basic configuration for the Estonian railway network was formed. However, private railways were not set to last for long: the railways were nationalized in 1893 and remained state owned until the reforms of the 1990s.

In its early development, different railways had different gauges – wide (1520 mm) gauge tracks, compliant with Russian standards, existed simultaneously with narrow (750 mm) gauge tracks. Narrow gauge railways were removed[1)] over the period 1959 to 1975, with some rebuilt to wide gauge standards.

Estonian Railway was a part of the large trans-Russian railway network, forming part of the regional Baltic Railways, with main lines directly connecting to the Estonian ports. Like all

1) To date, the narrow gauge track is preserved only in the Lavassaare Railway Museum and by a few private companies.

railways in Russia, later in the Soviet Union, railways in Estonia were developed primarily for military reasons, securing armament supply and mobilization, and not in the interests of freight transportation or passenger service. Military reasons have therefore determined the configuration and parameters of railway infrastructure as well as the location of railway lines and junctions, which still exist today.

4.2 The first stage of reforms: 1992 to 1995

After the restoration of Estonian independence, on January 1st, 1992, a state-owned enterprise, Estonian Railway (EVR), was formed on the basis of the former Estonian department of the Baltic Railways. This enterprise managed the railway infrastructure and operated the freight and passenger traffic, as well. The main goal of this company was to ensure a fast transition from the soviet railway management model to the contemporary market economy model, subject to competition from other transport means and neighbouring railways. In a relatively small network – the longest diagonal being less than 300 km – with a relatively well developed road network and growing car ownership, it was impossible to continue with the old Soviet management model and remain competitive.

Almost immediately, the company was restructured and refocused on core business. For example, numerous social and healthcare institutions, housing, trade organizations, kindergartens, schools and summer camps and many other assets in different spheres of activities were transferred to municipalities or sold to private companies. The state was interested in ensuring the main activity of the railway – efficient freight and passenger services.

At the same time, a genuine Estonian regulatory base was developed, replacing the earlier Soviet regulations. In 1993, the government of Estonia decided to join the system of the Organization of Cooperation of Railway Organizations (OSJD), established on the territory of the former Soviet Union, which gave a strong impulse to the further growth of transit and international railway operations in Estonia. This period can therefore be considered as a period of regulating and developing relations as well as a period of adjustment to the market situation.

Important structural changes in traffic demand took place during this period, with a switch in freight demand and a general fall in passenger demand. In 1992, for example, 27.2 million tonnes of freight was transported, mainly oil shale and ore, bulk goods, metals, grain, foodstuffs and frozen goods. By 1994, freight volume had reduced almost by one-fifth. However, within this general decline, one product began to grow – oil. By 1996, oil products made up 40 % of the total volume. The number of passengers reduced from approximately 36.5 million in the mid to late 1980s to 8.8 by 1994. The reason was straightforward – rapid growth in motorization and competition from bus services over the short Estonian distances.

4.3 The second stage of reforms: 1996 to 2000

A development program for the Estonian Railway for 1996 to 2000 was planned in 1995 and approved by the Estonian Government in March 1996. The aim was, following EU principles, to introduce competition into an otherwise monopolistic market to improve efficiency. In addition, and for the first time, a policy to privatize railway operations was included in the governmental privatization program of 1996. Moreover, a separate legal act on concessioning of infrastructure was envisaged – though this was never adopted.

The cornerstone of the railway development program was to improve efficiency through restructuring, reducing non-productive costs and improving productivity. Accounting separation was introduced between infrastructure and transport activities. This required dramatic changes in the total accounting system of the company, which lived in the former world of monopolistic, uncontrolled cross-subsidizing. The program also provided for a division between freight and passenger services. Both were given an independent commercial structure, and it was intended to change them into independent companies at a later stage.

A joint venture, EVR Koehne AS – a railway construction company, was incorporated to improve the efficiency of maintenance works. It was formed largely from the assets of Estonian Railways, but with 51% of the stock of the company owned by Koehne, a European railway construction and engineering firm.

In January 1997, an independent 100% state-owned passenger operating company, Edelaraudtee AS, was incorporated out of the assets of the state-owned enterprise Estonian Railway. The new company was allocated assets – a definite part of the domestic infrastructure in the form of two main lines and rolling stock – to operate domestic passenger services using diesel trains. Additionally, this company started to organize freight operations, mainly domestic, though with some international ones.

At the end of 1996, I was appointed as the Transport and Communications Minister of Estonia. In addition to implementing the basic provisions of the governmental program, it was decided to amend and further develop the program. This was approved by the government in June 1997 under the title “Principles of reorganization and privatization program of the state-owned enterprise Estonian Railway” (hereafter – “Privatization Plan”).

This program envisaged a number of measures to be taken in 1997–98 for the reorganization and privatization of Estonian railway sector. It was planned to perform a further division of the former state-owned railway company into several independent businesses in different areas of activities as well as to introduce a concession agreement with investors. The freight company would be privatized and would lease the railway infrastructure on the basis of a long-term (25–30 years) concession agreement and the railway infrastructure would continue to be owned by the state. This program was developed with the assistance of experts from international institutions, taking into account the positive experience from other countries of the world, including concession models implemented in Latin America, Asia and Australia. The first experience of UK railway privatization and massive franchising were also taken into account.

The terms and conditions of the Railway Infrastructure Concession Agreement were also approved by the government. They provided that the railway would remain in the ownership of the state, and control over its management would be performed by the state-owned company Estonian Railway, remaining after completion of all divisions and splits. This company, together with an international strategic investor selected at an international public tender, would found a joint undertaking Kaubavedude AS (freight operator), 49% of whose shares would be owned by Estonian Railway and 51% by the investor. This relative power was designed to maintain the balance of interests between freight transport as the most productive area of activity, on the one hand, and the infrastructure management, which this undertaking (Kaubavedude AS) would have been obliged to perform under the Concession Agreement. Also, it would pay a fixed annual concession fee and perform the management and development of railway infrastructure, which was in very poor condition at the time. The task of the state-owned

company would have been, in addition to the control over railway infrastructure management, the provision of infrastructure access for railway companies.

Although attractive, the idea of a concession for infrastructure was rejected in the run-up to new elections, and therefore this part of the railways model was never executed and the concession was replaced by sales of shares.

Furthermore, the Privatization Plan converted the state-owned company Estonian Railway into a public limited company. This was carried out by a government resolution of 2 October 1997.

In addition, the Plan suggested carving out the electric train passenger services (in and around Tallinn). In December 1998, Elektriraudtee AS was founded on the basis of electric railway assets and human resources of Estonian Railway. This company was 100% owned by Estonian Railway and commenced its activities in January 1999. It operates its own rolling stock over the Estonian Railway infrastructure, based on an infrastructure access agreement, paying a respective access fee.

The Plan also proposed to carve out international passenger services, to allow for their eventual privatization. In the end, the company AS EVR Express was founded for international passenger services as a joint undertaking with a private investor selected by way of competition, whereby Estonian Railway holds 49% and the private investor holds the majority 51% of the shares. This company also started using the railway infrastructure as from April 1999 on the basis of a respective infrastructure access agreement and payment of a fee.

Besides this, the Plan also proposed to sell the remaining 49% of the stock of the railway construction company, EVR Koehne AS, to a strategic partner. The Privatization Agency naturally hoped that there would also be other bidders besides the major partner, but this turned out to be unrealistic. No one has the desire to buy minority shares except for the major investor, especially in such a specific area as railway construction. The major investor therefore acquired the total package.

And last but not least, the Plan sought to create an independent Railway Administration within the system of the Ministry of Transport, which would perform the function of state regulator and supervisor. Also, it was planned to adopt the Railway Act, which was supposed, together with lower level regulations, to ensure compliance with EU regulations. A particular plan provided in the extensive program document “Strategic Plan for Trade Supporting Infrastructure & Services 1998-2005” was implemented as activity plan for the accession to the European Union.

In this period, a special Railway Act was developed and adopted. This gave a legal basis to an independent Railway Administration performing the functions of state regulator. The Act regulates the entire set of railway-related technical and legal issues, and issues related to the licensing and supervision. Under this Act, 20% of infrastructure capacity must be allocated to rail operators other than the Estonian railways. This allocation occurs under public tender. This obligation was the first of its kind in Estonia and the rest of Eastern Europe. As discussed below, this obligation was later increased to 100% of capacity – a move which is unprecedented in all of Europe.

Freight flows grew continuously during this period, largely due to Russian oil exports – which experienced a growth of 35% during 1995. This was accompanied by a sharp fall in

passenger services. By the end of the period, passenger volumes were at their lowest for 40 years. The government considered that the involvement of private initiative in the passenger service would help to resolve the situation. On the one hand, it was necessary to start quickly with improving the infrastructure condition and ensure its consistent development together with the increase of market competition in rail freight operations; on the other hand, it was necessary to maintain an efficient passenger service, free of cross subsidy and performing according to clearly defined rules.

The increase in freight flows from Russia was so dramatic that the existing capacity of Estonian Railway proved insufficient. Therefore, at the end of 1997, a shuttle train route was established between Kirishi oil refinery and Estonia's largest commercial port – Muuga – by a joint company LinkOil, which was founded in a co-operation between the oil operator, Estonian Railways and the Russian October Railway on the basis of private initiative and capital. The particular technology applied proved highly effective for streamlined logistic servicing of oil products, and was later duplicated by several rail transport undertakings (in Estonia: BTS and later TransOil, Spacecom and ERS; plus many other companies in neighbouring countries). This development facilitated the rapid growth in rail freight volumes.

By the end of this stage in the development of the Estonian railways, the railway market was emerging, with the following main players:

- Eesti Raudtee (henceforth EVR) as the rail infrastructure manager and, based on a separate accounting, a railway undertaking;
- four other railway undertakings, which mostly use shuttle trains to transport oil products, and use both their own and Estonian Railway's locomotives;
- Edelaraudtee AS, mainly providing national passenger services using diesel locomotives, and owns infrastructure and locomotive stock;
- Elektriraudtee AS, providing passenger services on the electric railway in the nation's capital city and its vicinity; and
- AS EVR Express, providing international passenger services, as well as small-parcel and postal services.

In addition, the public railway was also used by a dozen or so local companies with their rental railcars, as well as non-resident railcar owners with a large number of common rental railcars, including the Russian Railways (RZD) and numerous Russian private companies. The technical and market supervision and inspection was conducted by the independent Railway Administration (later the Railway Inspectorate), which acts on the basis of the Railway Act. All construction and maintenance works on infrastructure were outsourced to privately owned companies.

4.4 The third stage of reforms: 2000 to 2007

A new conservative coalition government took power in the spring of 1999. It proceeded with the already developed measures, yet deemed it necessary to further increase private capital and to involve additional private initiative to the development of Estonian railways. In 2000, the shares of AS EVR Express were sold to the local majority shareholder. Additionally, the shares of Edelaraudtee AS were sold at an international auction. Both sales were conducted by the Estonian Privatization Agency.

EVR Express has continued its subsidy-free activities mainly on the only profitable route to Moscow, although the St. Petersburg-bound route was later closed due to its low profitability. Similarly, the Tallinn/Vilnius/Polish border route could not compete with the highly efficient and convenient long-distance bus line.

The shares of Edelaraudtee were purchased at the end of 2000 by an international consortium, in which a UK railway company, GB Railways, participated in cooperation with local investors. Among other terms, the precondition of the sale included a 10-year operational contract. This specified the state payments to the company in order to:

– maintain passenger services in certain distant sparsely-populated areas;
– offer a lower ticket price for particular social groups;
– make the necessary investments in infrastructure.

For this purpose, a special scale was applied – with fixed rates over time, considering inflation.

In practice, the infrastructure element proved complicated. Edelaraudtee wished to transfer the railway infrastructure owned by the company (together with the corresponding maintenance and development liabilities) back to either the state or Estonian Railway. Nevertheless, in the end, the winning consortium managed to stop the continual decrease in passenger volumes on national railways, and even increase the volume by one-fifth, compared to the time before privatization – a tribute to the benefit of introducing private initiative.

The most distinguishing feature of this stage of the railway reform is that the new government coalition decided to sell shares in the EVR as a vertically integrated company, rather than adopt a concession-based privatization as had been previously advocated. The Estonian Privatization Agency implemented the scheme, which constituted its last large-scale transaction – everything else that could be privatized in Estonia had already been sold.

On 8 July 1999, the government amended the Privatization Plan stipulating that a strategic partner should be found in the course of preliminary negotiations to the privatization in the form of an international tender. Between 51 and 66 percent of shares of Estonian Railway should be sold to a strategic partner, while the state would retain a blocking shareholding of 49 to 34 percent. The government prescribed that the privatization had to be carried out during 2000 and that the agreement for purchase and sale of shares had to provide for additional conditions for retaining land in state ownership, as well as for ensuring the placement of additional large-scale investment in infrastructure with a prospect of increasing the capacity and competitiveness of the railway.

In view of the complicated nature of privatization, the government requested that an internationally established and experienced consultant advise the privatization process. Taking into account the tremendous social resonance caused by the process, which had not occurred in the case of the previous stages of the railway reform (including the privatization of passenger traffic), a relevant working group was formed within the Privatization Agency – with financial aid from the European Bank of Reconstruction and Development (EBRD) being used to engage a financial consultant, (Gibb Ltd., UK).

Given the political interest in this project, it was perhaps inevitable that the process took longer than initially envisaged. On 11 April 2000, the Estonian Privatization Agency announced

the international privatization tender in order to find a strategic investor for acquisition of the majority shareholding in EVR. The tender stage was scheduled to be completed on 17 July 2000. By the beginning of August, four companies emerged for the second stage. A certain re-grouping took place among those companies and, as a result, on 20 November 2000, three companies submitted bids for 66 % of shares in EVR.

On 13 December 2000, Rail Estonia AS was declared the winner. However, the company then failed to implement its bid – and on 2 March 2001 the Privatization Agency broke off negotiations and invited BRS OÜ (Baltic Rail Services), the second-best bidder, to participate in negotiations. The Privatization Agreement and the Shareholders Agreement involving the state as the co-owner were signed with BRS OÜ on 30 April 2001. The said agreements entered into force on 31 August 2001, following the payment of nearly €65 million by the investor. As a result of that transaction, 66 % of shares in EVR - the major railway company in Estonia – were held by a strategic private investor, while the state retained the blocking shareholding of 34 % (the state was represented by the Minister of Economic Affairs and Communications). In addition, the state had several special "Golden Share" rights that it could exercise in the process of adopting major resolutions by the owners. Also, the land was owned by the state, whereas EVR was entitled to use the land for provision of railway services for 50 years. This period of use could be extended to 99 years. A detailed methodology for calculation of infrastructure access fee was established and the Railway Inspectorate exercised supervision over adherence to that methodology.

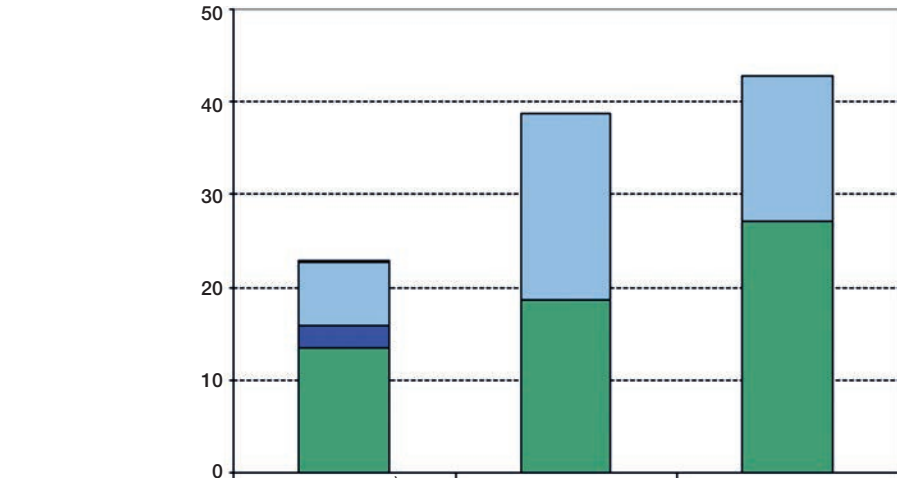
The strategic investor – Baltic Rail Services – was formed by an international consortium led by Mr. Edward Burkhardt, an internationally renowned railway manager and investor, as well as local investors. The shareholders of BRS include Ganiger Invest OÜ, Jarvis Estonia BV (the latter sold its interest to co-shareholders recently), RailWorld Estonia LLC, Railroad Development Corporation (RRDC) and Emerging Europe Infrastructure Fund (EEIF) Rail BV.

What did the privatization of Eesti Raudtee achieve? Practically, the state no longer invested in railway infrastructure, except for the construction of the new Koidula border station, as required by the European Union. Figure 1 below shows clearly that the private investor interest brought investments, including infrastructure, even without state budgetary funding.

The state regulated EVR in the public interest issues in a variety of ways: firstly, it could exercise voting rights at the shareholders' or supervisory board meetings; secondly, the Railway Inspectorate had the legal powers to regulate EVR; or, finally, as agreed under the Privatization Agreement, the government had an annual control over investment obligations of the investors.

The technological and financial performance of EVR improved considerably after privatization. In the year prior to privatization, EVR generated only €1.7 million of net profit. In the two years following privatization, the company earned €10.8 million and €21 million respectively. The state received dividend payments (based on its 34 % stake) instead of providing financial support. Indeed, it is from these amounts that the state was able to subsidize the passenger service within the framework of extremely strict state budget balance requirements established in Estonia. In addition, of course, the state received €65 million for the sale of the company. Figure 2 plots in the increase in earnings (EBITDA) over the period 1995 to 2004 and shows a substantial increase in profitability after privatization in 2001.

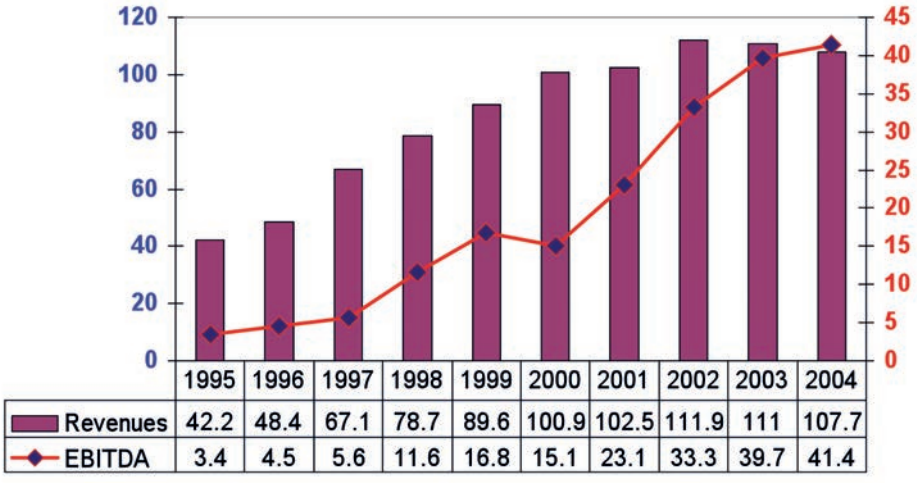
Freight transportation turnover increased by 13 % after privatization. Although EVR does



	1994–2000*)	2001–2004	2005–2009
Other (state support)	0.2	0.0	0.0
Other (EVR)	6.8	20.0	15.7
Infrastructure (state support)	2.5	0.0	0.0
Infrastructure (EVR)	13.4	18.7	27.1

*) 1994-00 without PHARE aid (approx. €5 million)
1994-00 was the pre-privatization period, 2001 (from September) – 2004 is the present Business Plan period, and 2005-09 is envisaged as the renewed Business Plan period

Figure 1: Investment comparison 1994-09 – yearly average (€ million)



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Revenues	42.2	48.4	67.1	78.7	89.6	100.9	102.5	111.9	111	107.7
EBITDA	3.4	4.5	5.6	11.6	16.8	15.1	23.1	33.3	39.7	41.4

Figure 2: Financial improvement in EVR post-privatization (€ million)

not provide passenger services directly, other operators use its tracks. The number of passengers/train-kilometres grew by 24 %, particularly from Edelaraudtee AS. This has been conditioned by an increase in the number of train lines to meet the state order. As a result, total infrastructure access fees for the purpose of passenger service have been raised by 19.1 %, mostly by Edelaraudtee AS. At the same time, the infrastructure access fee per gross tonne-kilometre has remained on a relatively stable level (raised only by 2.3 %). This has been conditioned by the methods established by the Railway Inspectorate for calculation of infrastructure access fees (if the volume increases, the fee to be charged per unit will be lowered).

Customer service, which was never the state monopoly's strongest side, has improved significantly. The company has implemented an on-line customer service system as well as a flexible pricing policy to retain customers while competition tightens. With major customers, the company consequently concluded one-year, three-year and five-year long-term contracts with fixed conditions.

Private investors made major investments in the locomotive fleet, replacing hitherto Russian locomotives with poor technical data and high maintenance costs with 75 more powerful and economical GE locomotives; a single unit allows trains to run up to 5,500 tonnes and, using double units, they can haul trains up to 9,000 tonnes. In addition 15 shunting engines were acquired, which increased the locomotive efficiency by 6.2 % and enables the company to operate with a smaller number of locomotives. The average train weight has increased: for instance, in Petseri border station from 4,294 tonnes before privatization to 5,014 tonnes in 2004. In Narva border station the result is even better – the average weight reached 5,200 tonnes. This is an important figure, considering that the main business partner – Russian Railways – is rapidly replacing 60-wagon trains with 100-wagon trains. The number of trains delivered/received at the border grew by 10 % after privatization.

It was during this period that the freight transport volumes of Estonian Railways hit record levels. Management and operations also significantly improved. As a result of close cooperation with customers and partners, freight flows grew from 38 million tonnes during the pre-privatization period up to 44.3 million tonnes in 2006. At the same time, the number of employees was reduced from 4,498 down to 2,674 (in 1992 the number of employees was 8,530). Over the post-privatization period, employees' salaries increased by over 40 %. Cooperation with other railway undertakings improved and the rules of cooperation became clearer. The introduction of new technologies helped improve the management of the rolling stock, while infrastructure developed rapidly. Improvement of the information support system of railway business as well as large-scale upgrading of communication systems and automation of working processes proceeded successfully. The purchasing system of operational materials, equipment and investment goods was improved. Activities in the area of safety and environment protection became very strict and consistent.

4.5 The fourth stage of reforms: from 2007 to the present

On 9 January 2007, the Republic of Estonia acquired 66 % of the shares of BRS, thereby becoming the sole owner of the company once again. It was a clear political choice of the governing coalition determined by the principal position of one of the leading coalition parties and by political interest vested to the coming general elections, as the privatization had not been popular in public opinion, despite the actual results. This emotion was strengthened

by the early scandals related to the first choice of private investor back in 2000, which was dropped later for its misdoings in the process. But the memory of something unpleasant remained and therefore politically driven arguments against privatization became a popular theme on the eve of the elections. On top of that, emerging private operators lobbied heavily for re-nationalization, as they thought it would be easier to negotiate the use of infrastructure and operational issues with the state than with the private owners.

Unfortunately, the abrupt chilling of political relations between Estonia and Russia in 2007, together with the downturn in the global economy, had a detrimental impact on the transport of freight. In 2007, the infrastructure of Estonian Railways had transported 36.7 million tonnes of freight, while the respective volumes reached 26.1 and 25.4 million tonnes in the subsequent two years.

In light of these circumstances, the management of Estonian Railways was forced to implement prompt cuts in order to bring costs in line with the decreased revenues. In that way, the difficult economic situation helped Estonian Railways to increase the efficiency of the company and to ensure sustainable and profitable management. In early 2007, Estonian Railways employed a staff of approximately 2,350; by 2010, that number has fallen to just below 1,700.

The reduction in transportation of freight and the return to state ownership led to a growth of requirements for state investment in infrastructure. Between 2007 and 2009, the average annual amount invested by Estonian Railways amounted to €37 million. State ownership has allowed Estonian Railways to make extensive use of the financial support offered by the various EU Structural Funds, where subsidies reach a level of 85 percent.

In the period between 2008 and 2009, Estonian Railways carried out major repairs within the Rail Baltica project on the Tartu-Valga route, and major repairs are currently in progress on the Tallinn-Tapa route. These projects will allow trains to travel at speeds up to 120 km/h by the end of 2011 on all routes east of Tallinn.

The modernization of the infrastructure has an especially beneficial impact on passenger train traffic. The Estonian Government is making plans to replace the rolling stock used for domestic passenger traffic by 2013, and this will allow Estonian Railways to make maximum usage of the effect resulting from the modernization of infrastructure.

On 14 January 2009, the restructuring of AS Estonian Railway was entered into the Commercial Register reflecting the founding of two AS EVR's subsidiaries: AS EVR Infra, responsible for infrastructure management and maintenance, and AS EVR Cargo, responsible for freight train operations.

Separation of the infrastructure and commercial services of Estonian Railways, which was initiated by the Estonian Government in 2007, was necessary in order to achieve greater transparency of the financial accounting in both areas of activity, in line with EU directives.

The changes mainly concerned the management of the companies where the founding of independent companies saw some increase in bureaucracy in the administration between the two companies, but the services provided to each other are based on strict accounting.

Gaining legal independence put a heavier burden of responsibility on the shoulders of the managers of the subsidiaries of Estonian Railway, EVR Cargo and EVR Infra in monitoring the company income and expenses and developing profitable management.

4.6 Conclusions

Privatization brought substantial efficiency gains to Estonian Railways that has largely been retained under state ownership. The return of Estonian Railways to the sole ownership of the state has substantially extended investment opportunities for the improvement of the railway infrastructure, as new opportunities appeared for obtaining finances from EU Structural Funds amounting to more than €100 million. As a result, Estonian Railways has been able to make considerable investments in the modernization of the Rail Baltica route, which will be completed by the end of 2011. Also, a new modern railway border point was established in 2010 in south-eastern Estonia, at a cost of almost €64 million.

Together with the acquisition of controlling interest in Estonian Railways, the Estonian Government has developed a substantial interest in the development of railway infrastructure and transport. By 2013, Estonia will have replaced the entire rolling stock for the domestic passenger traffic at a cost of about €192 million. Despite the change of ownership, the consistency in the management of Estonian Railways was maintained. This was highlighted by the management's ability to make prompt and extreme decisions in order to ensure the company's sustainability, competitiveness and profitable management in 2007, when there was a sharp fall in the volume of freight traffic.

In 2009, the government fixed the methods for calculating the railway infrastructure user fee, resulting in the stability and possibility to prepare long-term forecasts together with the fixing of the framework for fees, which enables newcomers to enter the market easily, with a clear and sufficient perspective on future prospects.

The Estonian railway transportation market is open to free competition and is, in fact, one of the most open in Europe. This is also reflected in the fact that Estonia is the only country in Europe where the share of the oldest railway company in the rail freight transport market ranges below 50 percent, as the most profitable bulk freight operations have become the business of private operators.