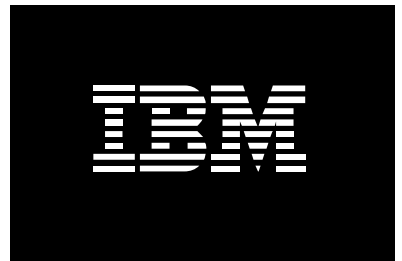


Brussels, 18.12.2002



Summary of the Study Rail Liberalisation Index 2002

*A Study Conducted by IBM Business Consulting Services in Conjunction with
Prof. Dr. Dr. Christian Kirchner, Humboldt University of Berlin,
on the Liberalisation of the European Rail Transport Markets*

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This brochure contains a summarised version of the study on the liberalisation of the European rail markets conducted by IBM Business Consulting Services in cooperation with Prof. Dr. Dr. Christian Kirchner.

It provides an overview of the most important findings. Detailed particulars of the data sources, of the calculation and evaluation model as well as the reports on the individual countries are contained in the final report of the study, which will be available on www.bahn.de/presse as from 20.01.2003.

Introduction

For some time now, the European Union has followed a strategy of opening up markets for network industries such as telecommunications, rail passenger and freight traffic, and energy supply, with the aim of expanding the Single European Market to include these sectors. The findings presented in this summary reveal the extent to which the rail transport markets have already been opened up to competition.

In August 2002, Deutsche Bahn AG invited tenders for the compilation of a liberalisation index for European rail traffic. IBM Business Consulting Services (formerly PwC Consulting¹) was awarded the contract for this project in view of its experience of conducting studies relating to the railway sector and its advanced conceptual competence. In cooperation with Prof. Dr. Dr. Christian Kirchner, who holds the chair in German, European and International Civil and Commercial Law at the Law and Economics Faculty of Humboldt University, Berlin, a rail liberalisation index (LIB Index) has been drawn up for the 15 EU member states, Switzerland and Norway. Prof. Dr. Dr. Christian Kirchner specialises in competition law and network economics.

¹ PLEASE NOTE THAT IBM recently completed its acquisition of PricewaterhouseCoopers' global management consulting and information technology services business, PwC Consulting. As a result, PwC Consulting is no longer a part of the PricewaterhouseCoopers network of firms, and is now a part of the IBM Global Services business unit. IBM (including IBM Global Services) and PricewaterhouseCoopers are not the same organisation, and neither governs or is affiliated with the other, or any affiliate, subsidiary or division of the other.

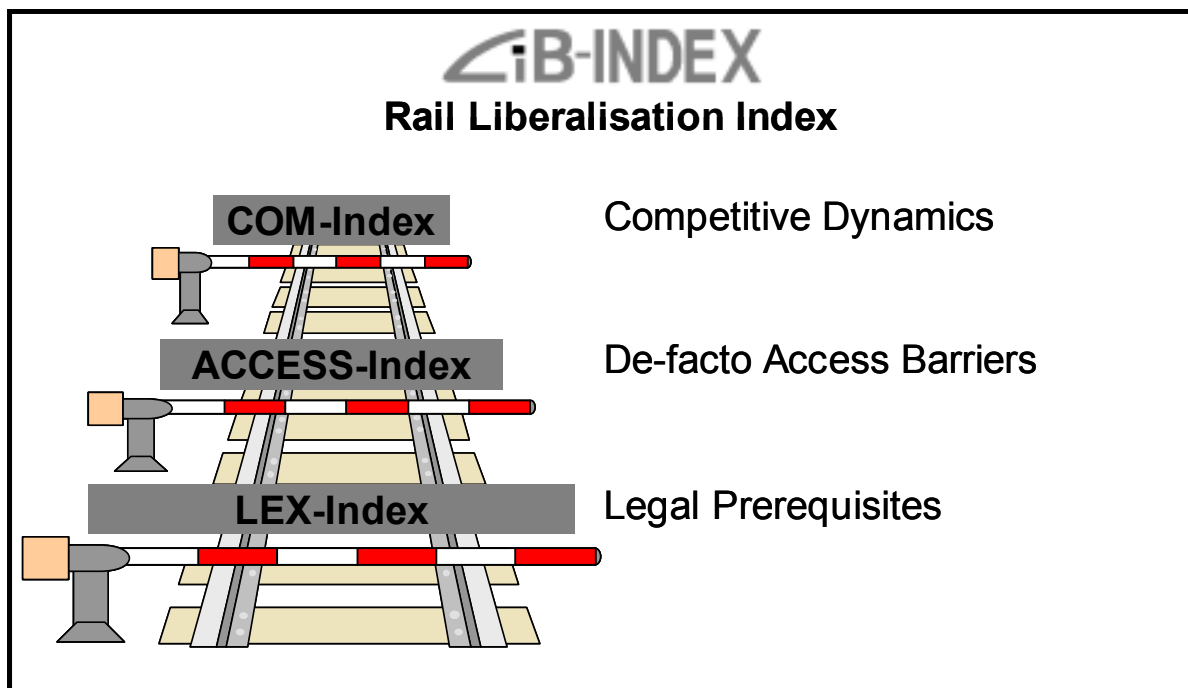
Aim of the LIB Index

The LIB Index provides an independent and sound factual basis for the transport policy debate on the opening up of the rail networks. It provides transparency about the different degrees to which the markets were opened up by 01.10.2002 in terms of network access in the European rail transport sector and thus serves as a basis for comparison.

The LIB Index has been drawn up from the point of view of external railway undertakings (External RUs²) seeking access to the networks. When drawing up their business plans, such RUs have to consider the following three principal questions:

1. What is the legislative basis for External RUs in the target country?
2. What form do the market access barriers and opportunities take?
3. How dynamic/intense is the competition in the rail transport market?

These three aspects are presented in the form of three sub-indices, as shown in the following chart. The LEX Index deals with the first, the ACCESS Index with the second, and the COM Index with the third of these questions.



The business plans of External RUs are tied to a particular time and must consequently be prepared within a manageable time framework. A period of two months was consequently judged reasonable for researching the market access conditions. From the point of view of External RUs, the need to conduct in-depth, expensive and time-consuming empirical research in order to obtain information about access to a rail network would, in fact, constitute an additional barrier.

On the one hand, the LIB Index indicates the general degree to which the rail sector is open to new competitors. On the other hand, it reveals details of where the weak points are to be found in respect of liberalisation and how the different policies applied by the individual countries are actually reflected in the openness of their respective rail networks. The de-

² External RUs refer to all railway undertakings with the exception of the former monopolists (state-owned railways, public railways): CONNEX in Germany, RTC in Italy; this term would also apply to SNCF in Germany, DB AG in Spain, etc.

cisive criterion for the evaluation was not to state an absolute degree of liberalisation, the determination of which would entail considerable methodological problems, but the relative degree of liberalisation in the different countries. The study therefore concentrated on a comparison of the current openness status of the national markets³ from the point of view of the Incumbents⁴ competitors who are currently seeking access, i. e. the External RUs. In its current form, the index does not judge which liberalisation approach is better, or at which point a national rail market can be deemed to be fully liberalised.

The modular structure of the LIB Index guarantees that it can be adapted in keeping with future liberalisation phases without the need to reconsider the structure as a whole. The detailed publication also ensures that the concept of the LIB Index is transparent, so that it is fundamentally suitable for ongoing development in the course of scientific discourse.

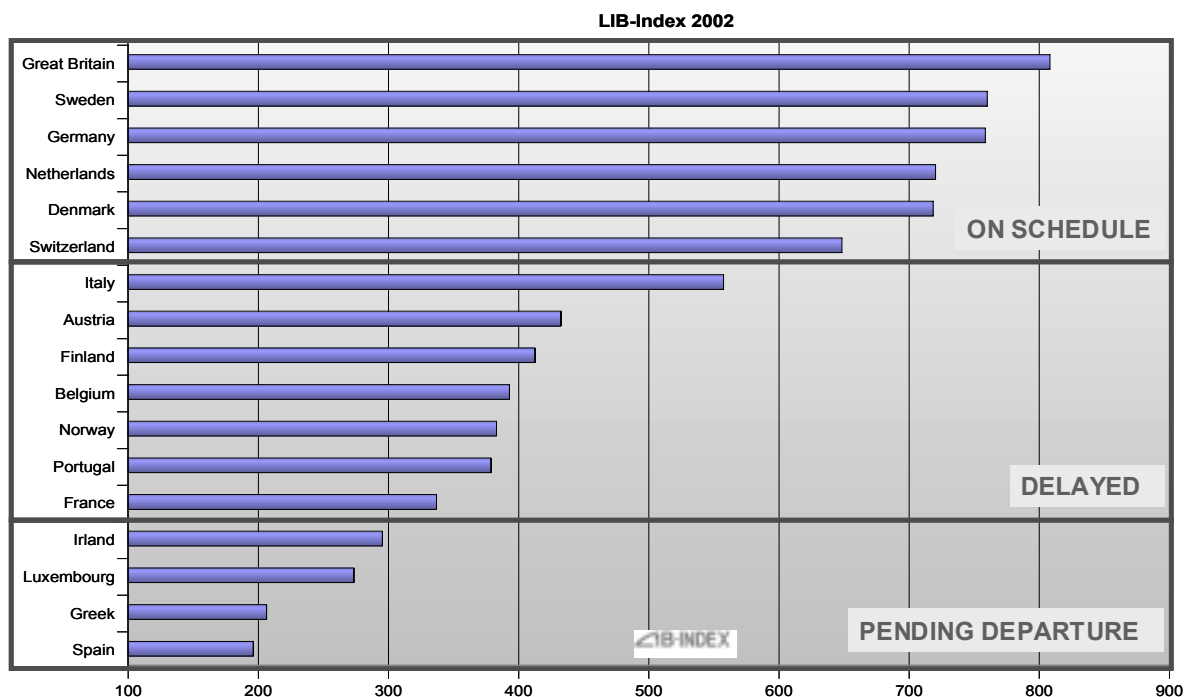
Establishment of the LIB Index as a standard which is accepted throughout Europe would be a desirable outcome of this project. The concept has therefore been aligned with the *Rail Market Monitoring Scheme* of the European Commission with that aim in mind.

³ Freight traffic, local passenger traffic and long-distance passenger traffic. The study does not cover urban passenger traffic.

⁴ Former monopolists or state-owned railways / public railways such as SNCF and DB AG

Findings

LIB Index



As a result of the study, the current status of market opening in the 17 countries investigated can be allocated to three groups.

The countries in the first group, comprising the United Kingdom, Sweden, Germany, the Netherlands, Denmark and Switzerland, have made considerable headway in opening up their markets. These countries obtained 600 and more points in the index calculation. This group is given the status "Market opening on schedule". In these countries, there is already noticeable competition and the market access opportunities for External RUs are acceptable.

Market opening in the second group, which consists of Italy, Austria, Finland, Belgium, Norway, Portugal and France, is substantially lower than in the first group. The scores of these countries vary between 300 and 599 points. This group is given the status "Delayed market opening".

When considered as a whole, it appears that the countries which make up the third group, namely Ireland, Luxembourg, Greece and Spain have made virtually no efforts to initiate the liberalisation process, scoring between 100 and 299 points. This group is accorded the status "Market opening pending departure".

At present, the United Kingdom has the most liberalised rail market in Europe. Its transport services are provided exclusively by External RUs. In 1993, the UK passed the *Railway Act*, which broke up *British Rail* into more than a hundred different companies.

Sweden and Germany have also made good progress with liberalisation. The markets of these two countries are open to roughly the same degree, although they pursue different liberalisation strategies. After intensive discussion, Germany opted for an integrated rail concept, whereas Sweden effected a full institutional separation of the state-owned railway

from the infrastructure. It must be emphasised that the assessment of access conditions takes into account the discrimination potential resulting from the organisational structure of an Incumbent at the relevant points. The fact that these three countries lead the field clearly shows that different regulatory models can be equally successful in achieving the ultimate goal.

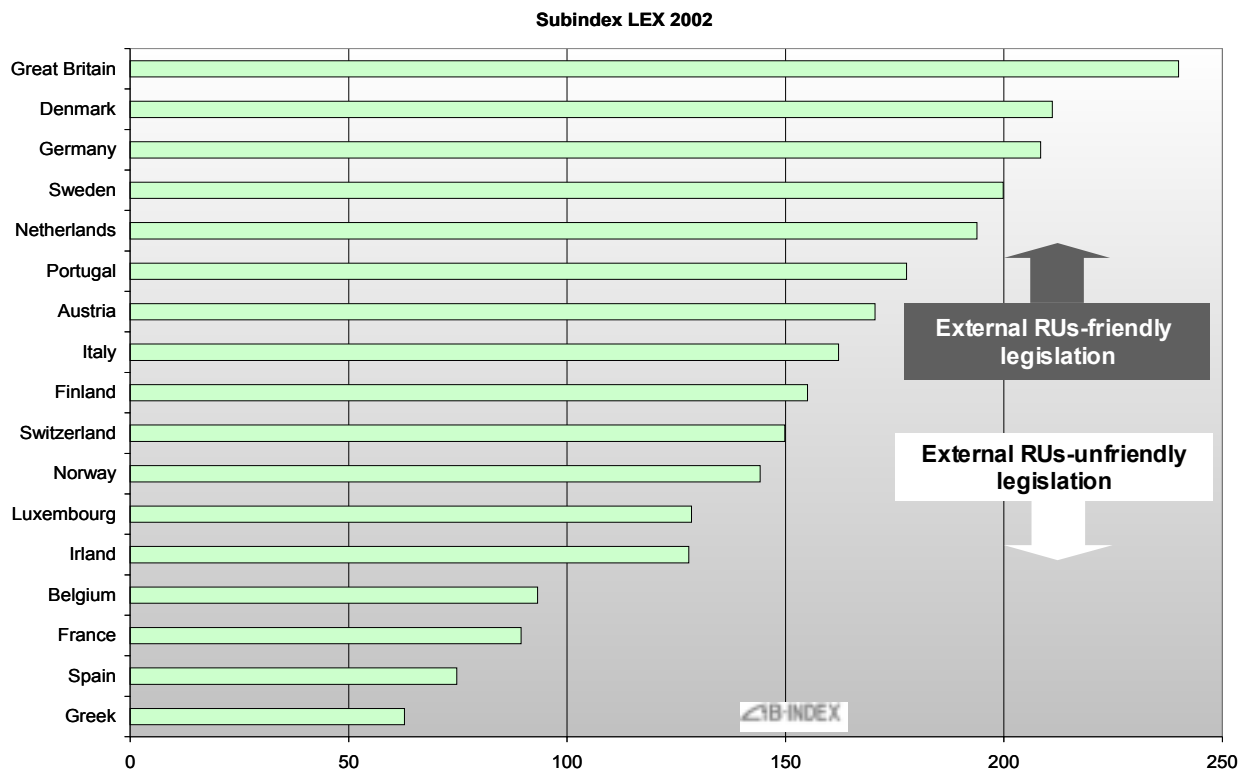
In the past few years, the Netherlands and Denmark have also made considerable efforts to facilitate market access for External RUs. They have also reached a comparable liberalisation status and have a clear lead over Switzerland, which has also been allocated to the first group owing to its efficient processes in marketing freight train paths (the analysis was restricted to the SBB and BLS networks). On the other hand, new railways have practically no chance of access to the long-distance and regional passenger traffic markets in Switzerland, whereas the other countries in the first group have opened these markets to new External RUs.

Of those allocated to the second group, Italy has opened its national rail network furthest by virtue of the Act of Parliament No. 388, passed in 2000. Structures to enable market access for other RUs either already exist or are in the process of being established.

Despite their significance for the Trans-European Networks (TEN), France and Austria are not included in the first group, as their policies for opening up the networks are comparatively restrictive. All other countries in the second and third groups also offer only restricted market access or no access whatsoever for new RUs.

An analysis of the sub-indices reveals the strengths and weaknesses of the individual countries in the liberalisation process.

LEX Index



The greatest weight in the LEX Index was given to the topic of “Regulatory Authority” because of its fundamental importance in markets with former monopolists.

State regulation of network access is most advanced in Germany, the United Kingdom, Austria, Portugal, Denmark and Switzerland. The regulation processes and structures in these countries have already been established in the interests of regulating nascent competition and to ensure non-discriminatory access. Only the United Kingdom, Germany, Austria and Portugal have already set up a regulatory authority pursuant to Directive 2001/14. The other countries have either not yet established or are in the process of establishing such a regulatory authority.

The vertical structure (infrastructure and transport) of the Incumbents breaks down into six different variants: Sweden, the Netherlands, the United Kingdom, Denmark and Norway are the only countries to have effected vertical institutional separation of their state-owned railways as well as horizontal separation (separation of accounting for the passenger and freight segments).

As regards access rights, the Netherlands, the United Kingdom, Sweden and Germany have implemented national laws which are best suited to promoting competition and which go beyond the requirements of the EC Directives.

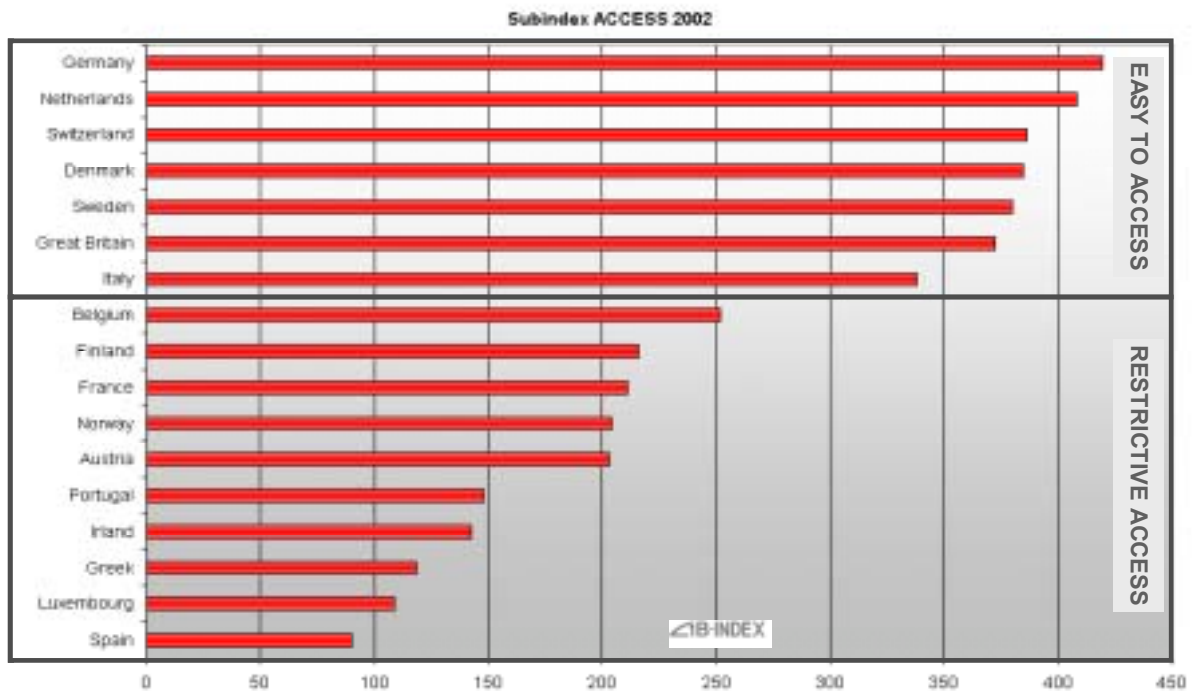
The differences ascertained between the countries in terms of “Market Access” are relatively minor. All of the countries examined have introduced statutory access and transit rights for international groupings and international combined transport goods services. All the Incumbents already have independent status and have separated their assets, budgeting and accounting from those of the state. All of the countries also prescribe separate accounting for railway infrastructure and the actual provision of transport services. They differ only with regard to the steps they have taken to reduce indebtedness. For example, the debts of SNCF, the public railway in France, have not been assumed by the French government, but by RFF (the French network operator). Nor has the Belgian government taken over the debts of the former state-owned railway.

In a comparison of European countries, Belgium, Switzerland and Portugal have made least progress in preparing for the *Trans-European Rail Freight Network*⁵ (TERFN). The Swiss are not expected to decide until next year whether or not they wish to accede to TERFN.

In relation to the overall results of the LIB Index, Portugal and Austria are relatively well placed, as both these countries already have structures for regulating competition. However, these structures have not yet been applied as no competition exists to date, or in the case of Portugal, is restricted to one External RU. Portugal has also effected vertical separation of its state-owned railway and is therefore placed within the top third of the LEX Index, but like Austria loses ground because of the way in which it has organised practical market access.

⁵ *European rail freight network as described in the EC Directive 2001/12 and which must be open to External RUs by 15.03.2003.*

ACCESS Index



An analysis of the absolute and relative access barriers reveals two different groups. The group which currently offers External RUs acceptable to good practical market access conditions is accorded the status "Easy access". In this group, Germany and the Netherlands are the access-friendliest countries. The group also includes Switzerland (only freight traffic on the BLS and SBB networks), Denmark, Sweden, the United Kingdom and Italy.

Italy forms the link to the second group, the members of which offer restrictive to insufficient practical market access conditions for new RUs. That group is accorded the status "Restrictive access". This second group includes Belgium, Finland, France, Norway, Austria, Portugal, Ireland, Greece, Luxembourg and Spain.

The Italian network is managed by RFI, a company founded in July 2001. RFI issues the necessary train path-dependent safety certificates through its subsidiary, CESIFER. The certification process is currently regarded as the principal obstacle for External RUs in Italy.

DB Netz AG, the network operator in Germany, has already created the prerequisites to enable network access for External RUs. A *One-Stop-Shop* Manager⁶ serves as central contact to assist applicant RUs with all queries relating to the marketing of international train paths. Deutsche Bahn AG has also appointed a Competition Officer who can be contacted directly in case of complaints. As regards the determinant "Licence and Safety Certificate", Germany obtained the highest score as it does not demand a separate restrictive safety certificate, and some aspects are already dealt with in the course of licence issuance.

The most comprehensive and user-friendly information about network access is available in Germany, the United Kingdom, the Netherlands and Switzerland. How a country handles that vital information is an initial indicator of the openness of its network. There is a marked disparity between the first and second group with regard to the efficiency of their administrative processes, such as the issue of licences and safety certificates.

⁶ Contact for all questions dealing with the sale of train paths

Whereas the countries in the first group all provide *Open Access*⁷ in the freight sector, they differ in respect of the access provided to passenger train paths.

Although Germany offers *Open Access* in the long-distance passenger traffic sector, there is as yet hardly any competition in that market segment. This can perhaps be attributed to the high costs required to enter the market, especially for rolling stock, to the relatively high train path user fees, and to train path availability. In the United Kingdom and Sweden, RUs wishing to offer long-distance passenger traffic services have to participate in tender procedures or acquire a concession. In all other countries, access to this market segment is even more restrictive. In Switzerland, long-distance passenger services are provided exclusively by *Cisalpine* (joint venture of SBB and Trenitalia), SBB and BLS and this is expected to remain the case until 2007.

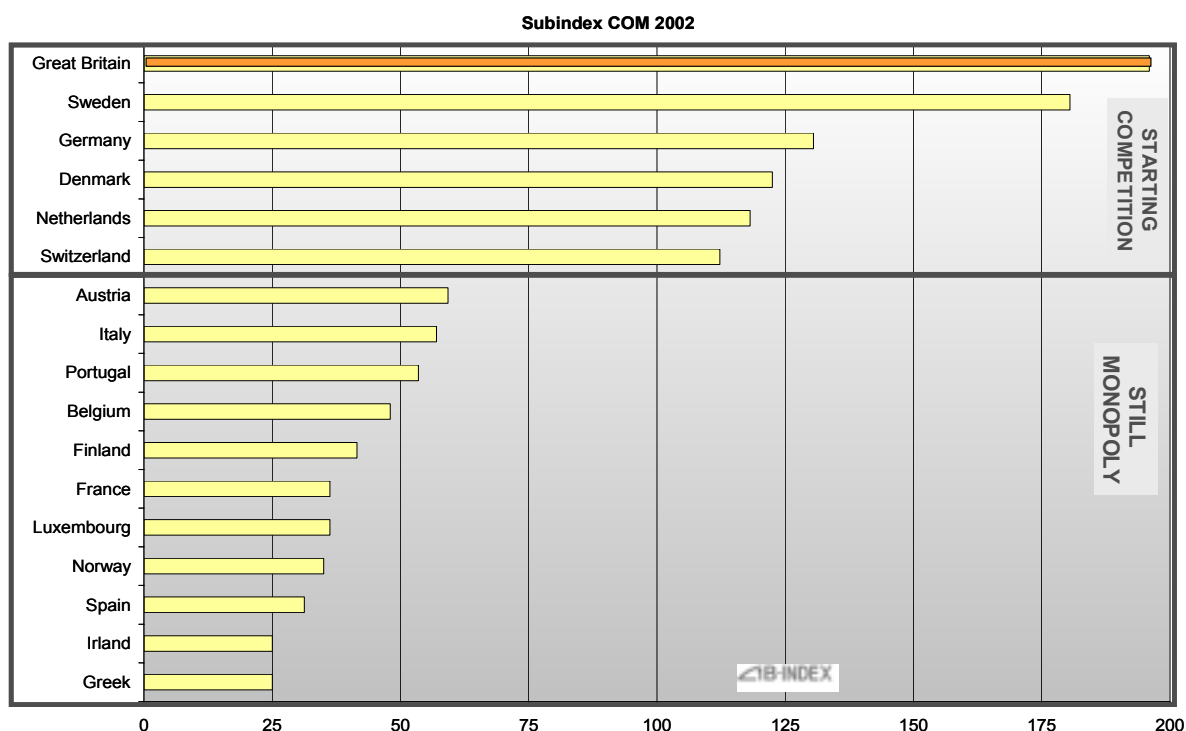
In the local passenger traffic markets in Germany, the United Kingdom, Sweden, the Netherlands and Portugal, a certain proportion of the train paths is awarded by tender in changing time intervals or every year or allocated in the form of concessions.

In contrast to the slight divergence between the countries in the LEX Index, two distinct groups emerge in the ACCESS Index. The first group, which has only low market access barriers, differs consistently from the second group, with restrictive market access, in every single determinant of this sub-index. These countries have already acquired experience with External RUs and have consequently established the relevant processes. In this sub-index, countries such as Austria or Portugal have dropped from the top third of the LEX Index into the mid-range bracket of the COM Index, owing to the practical obstacles. Some of the middle-ranking countries do, in fact, have structures and processes for market access, but these are scarcely implemented, if at all. In the countries of the bottom third, such structures and processes hardly exist or do not exist at all.

The following COM Index confirms the previous findings.

⁷ *Open Access: Independent, legally guaranteed entitlement to network access for External RUs.*

COM Index



The COM Index assesses the competitive situation in the individual countries on the basis of aggregated market factors in the three areas "Market trends of the modal split", "New RUs in 2001/2002" and "Accessible market in 2002". Wherever possible, it distinguishes between the market segments: freight traffic, local passenger traffic and long-distance passenger traffic.

The COM Index reveals two highly distinctive groups. In keeping with the criteria analysed in the COM Index, these are described as "Starting competition" and "Still monopoly".

The United Kingdom plays a special role in this case, as there is no longer any Incumbent, only External RUs. In the other countries in the first group, there is already emergent competition. Sweden is the clear leader in this group, owing to its relatively high number of active RUs and the comparatively high market share of these RUs. The group leader, Sweden, is then followed by Germany, Denmark, the Netherlands and Switzerland, which exhibit comparatively low differences.

All the other countries have either very little competition in the rail transport market or none at all. An evaluation of the COM Index puts the following countries in this group: Austria, Italy, Portugal, Belgium, Finland, France, Luxembourg, Norway, Spain, Ireland and Greece.

Three External RUs which have the necessary train path-dependent safety certificate, are active in the RFI network in Italy. However, they account for only a marginal share of the market. The other RUs which exist in Italy and Austria are not a consequence of liberalisation, but have already existed for some time or offer rail services on their own networks. In the only invitation to tender conducted to date, Portugal gave preferential treatment to the only existing new RU rather than the Incumbent.

Conclusion

Summing up, it can be stated that rail liberalisation is still in its infancy. In the countries of the *on schedule* group, there is already evidence of nascent competition in the rail sector. Despite pursuing different approaches, the countries in that group have achieved similarly successful results in opening up their markets. In the countries in the other groups, by contrast, market access still poses substantially greater problems for new RUs or is not possible at all owing to the restrictions stated above.

Annexe

Concept

For conceptual reasons, it was considered advisable to structure the overall LIB Index in the form of three complementary sub-indices in order to do justice to the diverse facets of the topic of liberalisation and reflect the logical sequence of the market access process. Each sub-index is made up of several different subject areas; these individual areas contain determinants, some of which have in turn been broken down into sub-criteria. That framework then serves as a basis for deriving specific question and answer categories for the data collection.

The modular approach means that the heterogeneous determinant quantities can subsequently be adapted without having to reconsider the overall structure of the study.

The analysis of the openness of markets for railbound passenger and freight traffic distinguishes between three levels, namely, the national legislative framework, the access opportunities and barriers actually in existence, and the level of actual competition intensity.

The first level (LEX Index) shows the existing legal framework (*law in the books*), while the second level examines the status of the access opportunities and barriers actually in existence (ACCESS Index) (*law in action*); legal questions are again relevant at that level, albeit from the viewpoint of business management in terms of application practice. The third level reflects the intensity of competition (COM Index). The first and third levels are important as prerequisites or indicators; it is the second level, however, which is decisive for market opening.

The following subject areas are reflected in the LEX Index:

- Market access (Status Quo – excl. TERFN) pursuant to Directive 91/440 as amended by Directive 2001/12
- More extensive national access rights
- Organisational structures of the Incumbents
- TERFN preparation status and
- Regulatory authority

The ACCESS Index consists of six different subject groups:

- Information barriers
- Licensing and safety certificate
- Interpretation leeway/access regime
- Network access and prerequisites
- Train path pricing system
- Access to service elements

The COM Index examines three subject groups:

- Market trends of the modal split
- New RUs 2001/2002
- Accessible market 2002

The weighting for the sub-indices, determinants and sub-criteria was specified by a panel of experts on the basis of paired comparisons. At the top level, i.e. sub-index level, weighting was effected as follows for the current liberalisation phase:

LEX Index	25%
ACCESS Index	50%
COM Index	25%

Passenger and freight traffic were each weighted as 50% in the sub-criteria, with local passenger and long-distance passenger traffic each rated as 25%.

The ACCESS Index is of prime importance as it most strongly reflects the practical market access opportunities and market access barriers. It was consequently given by far the highest weighting in the overall index. The COM Index was accorded the same significance as the LEX Index within the three sub-indices, as it can only be proved on the basis of market data that market access is not just potentially possible, but actually takes place on a corresponding scale. This compensates for any specification errors or any incompleteness of the determinants selected. In the same way as the COM Index, the determinants of the LEX Index are, on their own, only capable of revealing de-facto market access barriers to a certain extent. Weighting thus reflects the importance of national laws as the basis for demanding access in the sense of the European concept of competition.

In this relatively new market, the legislative conditions and the process-related administrative barriers (i.e. LEX and ACCESS) are the restricting factors, and therefore account for three quarters of the total weighting in the LIB Index. If the EU liberalisation policy continues with the intensity that is apparent in the initiatives of the latest "Rail Packages", the COM Index will gain in weight.

Research

The data for the LIB Index was collected by IBM Business Consulting Services consultants with proven expertise in the transport and strategy environment. For the purposes of data collection, evaluation and source identification, the research team also had recourse to the European IBM Business Consulting Services network of railway experts. The data was collected on the basis of a questionnaire (available in German, English, French and Italian) which was derived from the determinants used in the concept.

Persons with the appropriate competence at the ministries of transport, regulatory authorities, licensing and safety certification bodies, network operators, one-stop shops and Incumbents, etc. in the individual countries were contacted and interviewed directly or indirectly. The consultants also sought the opinions and experience of External RUs.

The existing specific national network access conditions were evaluated. Supranational data was collected, for instance, from the UIC, the European Commission, the Community of European Railways and the World Bank. The annual reports and internet presentations of the network operators and the Incumbents were also analysed.

The acquired data was verified by means of recent scientific publications, further secondary sources and expert assessments. Paired comparisons and plausibility checks were also conducted to validate the data.

For certain determinants of the ACCESS Index, non-answers have also been included in the findings. The reason for this is that if it is not possible to obtain the relevant information about network access within a period of two months, despite intensive and selective research, such information is either not available to the general public or is subject to restrictive handling. This impedes the External RUs when drawing up their business plans.



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