# German Railway Reform

## — Chances and Risks

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*Railways in Germany and elsewhere were the backbone of domestic transport and their businesses ran profitably for more than half a century. However, they lost their monopoly in the late 1950s and began suffering from shrinking market shares and increasing deficits. In several countries (Japan, New Zealand, Argentina, Sweden, Great Britain, Germany), this led to different fundamental reforms. The German railway reform started early this year with the foundation of the German Railway Corporation, DBAG. This article surveys the German railways up to the reform, the reform model and its chances and risks.*

## 1. Development of German railways until 1993

In 1993, the German rail network amounted to about 44,000 km of tracks, 41,000 km of which were operated by the two government-owned railways, Deutsche Bundesbahn DB (West Germany) and Deutsche Reichsbahn DR (East Germany). Rail transport and the transport market in Germany can be characterized as follows (Figure 1):

- Compared with other European countries, Germany is relatively-densely populated with 225 people/km$^2$. However, this density is only 66% of that in Japan (328 people/km$^2$), a country with high urban densities favouring railways. In addition, the German settlement structure is marked by high urban spread.
- Car ownership in Germany is 469 cars per 1000 people (1992), among the highest of the industrialised countries. The road network is well developed both quantitatively and qualitatively. For most transport, there is no speed advantage of railways over cars.
- The daily passenger density (number of passenger-km/length of rail tracks/365) is only 4100 much lower than that of Japan (32,100) and also well below Great Britain and France.

Since the 1950s, railways in Germany and most other countries have faced shrinking market shares and increasing deficits. The reasons are found in the general development of the transport market on the one hand, including:

- Explosion of personal car ownership
- Quantitative and qualitative improvement of road network
- Change in nature of transported goods from those favouring railways to those favouring roads
- Development of new logistic concepts best suited to road transport other problems were caused by status of government-owned national railways such as:
- Government intervention,
- Restrictions caused by public service and budget law,
- Managerial inefficiency and inflexibility.

Figure 2 shows that in 1990, the DB provided only 6% of all passenger transport in West Germany compared to a share of 16% in 1960. In freight transport, the DB market share decreased from 37% in 1960 to 20% in 1990 (Figure 3).

Since German unification in 1990, the DR has been faced with specific problems caused by the collapse of the government-regulated transport market in former East Germany. While the

**Figure 1 Conditions of rail transport in some countries—1990[1]**

| | Great Britain | France | Germany | Sweden | Japan |
|---|---|---|---|---|---|
| 1. Land area (1000 km$^2$) | 244 | 552 | 357 | 450 | 378 |
| 2. Population (million) | 57 | 57 | 80 | 9 | 123 |
| 3. Population density (/km$^2$) | 235 | 103 | 225 | 19 | 328 |
| 4. Motor vehicle ownership [2] (1000) | 24150 | 27360 | 42457 | 3945 [3] | 60499 |
| of which cars | 21485 | 23550 | 35502 | 3621 [3] | 32436 |
| Number of cars/1000 people | 377 | 410 | 440 | 402 [3] | 264 |
| 5. Length of motorways (km) | 3180 | 6825 | 10810 | 936 [3] | 4700 |
| 6. National railways | | | | | |
| Network length (km) | 16584 | 33282 | 40900 | 10970 | 20250 |
| Million passenger-km | 32058 | 62101 | 61060 | 5524 | 237657 |
| Million tonne-km | 17274 | 50632 | 103481 | 17980 | 26728 |
| 7. Rail passenger density [2] | 5296 | 5112 | 4126 | 1380 | 32154 |

[1] As per 31 December [2] Not fully comparable because of different definitions in the national statistics
[3] Figures for 1991

Sources: German Automobile Association, Eurostat,JRF,UIC.

DR provided 18% of all passenger transport and about 67% of freight transport before unification, these shares fell to 8% for passenger transport and 50% for freight transport in 1990 and are still falling.

The economic situation of German railways deteriorated as a result of shrinking market shares leading to increasing financial burdens on the government budget. Although the government provided subsidies of about DM55 billion from 1975–1990, the DB deficits increased to about DM5 billion by 1990. This was related to exhaustion of DB's capital which fell from DM22 billion in 1975 to DM15 billion in 1990. The debts incurred by DB also rose constantly and amounted to DM50 billion in 1990.

With the German unification, the problems of the DR added to the financial burden on the government. As already mentioned, the DR faces problems such as old-fashioned production with high intensity of material and personnel, an enormous investment backlog, and decreasing revenues because of the collapse of the former East German transport market.

In 1993, the total debts of both DB and DR reached a record level of DM70 billion, twice their sales of the same year.

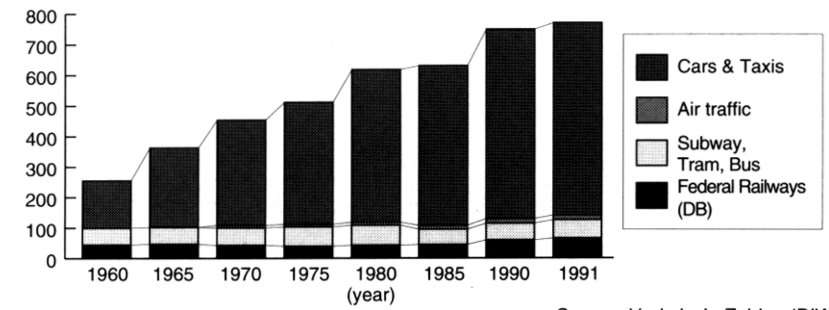
In addition to the continuously-deteriorating financial situation, two specific aspects suggested the need for reform:

(1) The expected explosion of freight transport as a result of the opening-up of Eastern Europe, and the establishment of the EC-transport market with decontrol of cabotage and deregulation of tariffs and licensing. Because Germany is a transit country at the heart of Europe, this development is especially hard to face. Obviously, DB and DR in their former form were not in a position to compete with European truck carriers who run relatively lean and flexible business and are experienced professionals.

(2) The EC-directive 91/440 which obliges all EC countries to revise their railways in the following areas.

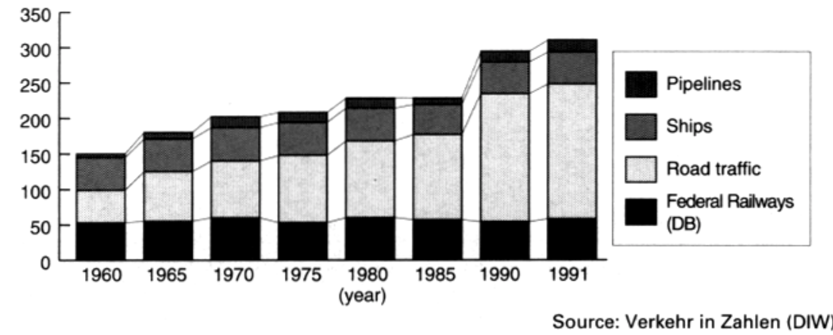
- Separation of infrastructure and transport at least in book-keeping (Institutional separation is not required but depends on the intentions of each EC country.)
- Free access of EC rail companies to national rail networks of all EC countries
- Payment of usage charges by transport companies for use of tracks
- Establishment of mechanisms for financial sanitation of railways and reduction of debts to extent enabling railways to run on sound financial basis

**Figure 2 Modal split of passenger transport in West Germany – billion passenger-km –**




Source: Verkehr in Zahlen (DIW)

**Figure 3 Modal split of freight transport in former West Germany – billion tonne-km –**




Source: Verkehr in Zahlen (DIW)

## 2. German reform approach

In December 1993, the railway reform bill containing alterations to the German constitution[1] and five new laws and alteration of more than 130 existing laws and regulations passed parliament. The planned reform process is shown in Figure 4 and can be characterized as follows:

**(1) Foundation of German Railway Corporation**

The German Railway Corporation DBAG was established in January 1994 absorbing the former DB and DR. The DBAG is a joint-stock company with shares owned by the state. As figure 4 shows the DBAG is subdivided into three divisions: tracks, passenger transport and freight transport. In addition to DBAG, two public-interest institutions were established. The Federal Railway Board will manage the state's responsibilities such as supervision, licensing, preparation of infrastructure investments. The remaining separate property—an institution comparable with the JNR Settlement Corporation in Japan—has absorbs all long-term liabilities of DB and DR as well as surplus personnel and will market the surplus real estate.

Flotation of DBAG shares on the stock market is not explicitly stated as an aim of the reform but is generally possible, except for the tracks corporation, which the amended constitution obliges the government to hold the majority of shares in.

**(2) Vertical separation between infrastructure and transport**

As Figure 4 shows, the three divisions (tracks, passenger transport and freight transport) will be established 3 years (5 years at maximum) after the foundation of DBAG as separate entities under the roof of the DBAG holding. The holding will be broken up another 8 years later. At that date, complete separation will occur between infrastructure and transport. In practical terms, this means that the tracks corporation will provide the tracks to transport companies on payment of usage charges and these transport companies compete for access to the infrastructure. This approach exceeds the obligations of the EC-directive 91/440 which requires only separation of book-keeping.

**(3) Opening of rail network to third parties**

To meet the obligations of the EC-directive 91/440, the rail networks of all public railway companies in Germany—including the largest one of DBAG—will be opened to third parties. Third parties are defined as other domestic rail companies, international associations of EC rail companies and companies of combined transport services. Up to now, the EC-wide conditions for access and use of the rail infrastructure have not been formulated. The EC Commission submitted the first proposals for two directives in early 1994. One defines the criteria for unique permission to operate railway companies in the EC. The other deals with access to tracks in detail and with calculation of the usage charges. Both directives are expected to be passed in the second half of 1994 and have to be adjusted to national law thereafter.

**(4) Obligations of state regarding rail infrastructure**

The track facilities are transferred to a tracks company which is obliged to run the lines on commercial principles and to put them at the disposal—on payment of usage charges—of users. The German constitution and the new Railway Construction Law lay down the following principles for financing infrastructure.

(a) The Federal government finances construction and replacement of lines. In addition, regional government or third parties can promote investment and the DBAG can also raise funds in the capital market to finance investment projects in which it is interested.
(b) The tracks company must bear the cost of operating and maintaining the lines.
(c) The tracks company must pay annual depreciation for lines financed by the Federal government, meaning that the Federal government finances the investments in advance and bears the interest. This rule only concerns projects in which the DBAG has confirmed a commercial interest. Otherwise, depreciation payments will be reduced or completely abolished. The tracks company has to pay both depreciation and interest for projects financed via the capital market.

**(5) Measures for financial sanitation**

The EC-directive 91/440 obliges all EC countries to provide a sound financial basis for their railways. To meet this requirement, the German railway reform contains the following financial measures.

- Transformation of all DB and DR long-term debts (about DM70 billion) to the remaining separate property to enable a fresh start for the DBAG from the very beginning
- Transfer of DB personnel (who have the special status of civil servants) to the remaining separate property
- The remaining separate property will loan these employees to the DBAG as necessary, but the DBAG will only pay such salaries as are usual in comparable trades and professions. The difference between these DBAG salaries and the salaries guaranteed for civil servants will be borne by the separate property. Additionally, the Federal government takes over all financial obligations resulting from special contracts with staff (pensions for civil servants). This arrangement provides considerable relief (estimated DM57 billion) from personnel costs.
- Balance-sheet adjustment (DM80 billion)
- Granting financial aid for additional costs for material and personnel caused by old-fashioned production of DR (DM50 billion)
- Taking over necessary investments to meet DR backlog demand (DM30 billion)
- Financing construction and replacement of rail infrastructure (about DM70 billion)
- Regionalisation of suburban passenger transport of DB and DR

**(6) Regionalisation of suburban passenger rail transport**

The so-called regionalisation is a crucial point in the railway reform and shifts responsibility for both providing and financing services in suburban passenger transport to regional governments and communities, meaning that institutions demanding transport pay for it. This may seem to be a matter of course, but was not the prior case in Germany; up to 1994, regional governments requested suburban passenger rail services from DB and DR, but while DB and DR were obliged by law[2)] to provide these services, the regional governments were not responsible for paying for them. To compensate for losses, the Federal government granted special subsidies to DB and DR but these subsidies did not cover the costs. Thus, regionalisation means considerable financial relief for the DBAG.

The amended German constitution and Regionalisation Law allow regional governments and communities to receive part of the fuel tax to finance the suburban passenger rail transport.

## 3. Chances and risks of German railway reform

This reform approach provides good preconditions for the DBAG to operate successfully in the transport market and to regain lost market share. The relief from public service and budgetary law and from government intervention enables the DBAG to act as a company following commercial principles. Regionalisation of suburban passenger transport ends the prior situation where DB and DR had to provide so-called public-interest services but were not paid appropriately for these services. Introduction of the "user pays" principle will improve the situation of the DBAG in this business field. As a result of the sanitation measures, the DBAG has a much more comfortable financial basis than the rail companies in other European countries or in Japan.

But neither should the problems and risks be overlooked by German transport officials nor by the DBAG.

A general problem is the falling price and cost level of road traffic in the context of the establishment of a harmonised and liberalised EC transport market. The step-wise decontrol of cabotage up to 1998, deregulation of tariffs and licensing and the decision at the EC Transport Ministers' Conference to introduce a motorway tax disc with a parallel reduction in vehicle tax will increase price competition between road and rail transport. An additional problem will be caused by East European truck carriers entering the market with very low personnel costs and social expenses.

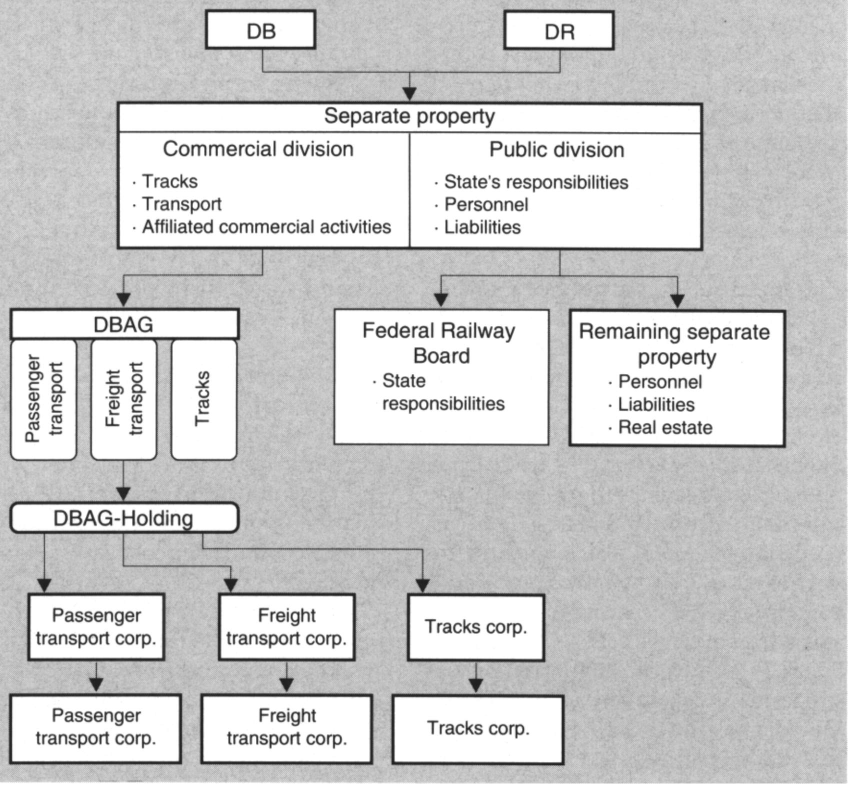
Also, the reform model itself will cause some problems in the future. The most serious one concerns calculation of usage charges paid by transport companies for use of tracks. The tracks company faces a contradiction; if it charges fees at a level allowing transport companies to offer services at competitive prices, the tracks company will not be able to cover the cost of tracks. If the tracks company charges fees covering the track costs, transport companies will probably not be able to compete in the transport market. During the first few years, this problem will not occur to the full extent because the balance-sheet adjustment contains reduction of balance values for infrastructure assets and, consequently, of the depreciation as the largest part of capital costs. However, in the long run, this advantage will disappear as the planned investments for new lines are achieved. Thus, the tracks company might be well advised not to rely on the current low level of capital costs but to introduce cost-cutting measures in time.

A further problem closely connected to track costs is the future network length. In relation to the actual transport volume, the network is too large to cover costs. Both measures to increase the rail-transport volume and concepts for the future network length will have to be developed. A possible approach is the selling-off of regional or rural lines to regional governments, communities or private investors who can operate these lines more profitably than the DBAG. Also, establishment of so-called short lines for freight transport (as in the USA) is an interesting solution that should be discussed in Germany.

However, the main tasks for the DBAG are cost reduction on one hand, and increasing transport volume on the other. To mention a few examples, the DBAG must make efforts in the following fields:

- Improvement of service (new comfortable trains, higher train frequency, clean and safe trains and stations)
- Improvement of reliability of rail transport
- Speeding-up lines to reduce travel times
- Motivating DBAG employees to ensure better job attitudes
- Reduction of excessive and unnecessary technical standards for lines and trains
- Introduction of lightweight trains
- Introduction of cost-cutting operations
- Introduction of efficient safety techniques
- Business diversification

**Figure 4 Steps in German railway reform**




The examples of Japan and New Zealand—despite the differences in geography, settlement and industrial structure—show that it is possible to get people and goods back to the railways.

In German too, the railway reform offers a new chance for rail transport, but no more and no less.

Note:
1. In contrast to other countries, Article 87 of the German constitution establishes the responsibility of the state to provide rail transport.
2. The Railway Law obliged government-owned railways to provide suburban passenger transport which was defined as "services of public interest". ■

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Dr Heike Link was born in Belgium in 1964. After post-doctoral work at the University of Economic Sciences, Berlin, she joined the German Institute for Economic Research specialising in transport infrastructure, cost-coverage calculation of transport means, and privatisation in the transport sector.