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Competition in European railway market

Morning has broken

The European railway market faces strong challenges. Full-scale liberalisation in EU rail freight transport is to be implemented from 2007. As a result, railway operators across the EU will be allowed to provide their services in other member states. In passenger transportation as well, further deregulation steps are on the cards. Market opening via non-discriminatory access to the railway network for all potential providers of train services is the prerequisite for the revitalisation of the sector.

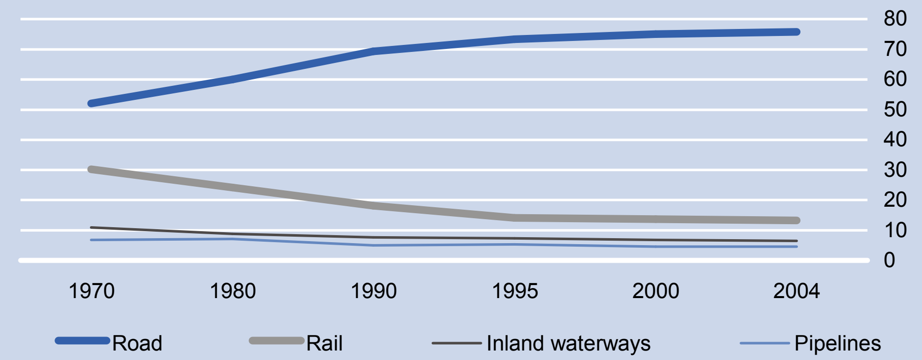
However, a far-reaching deregulation regime will be of little avail if the state of rail infrastructure does not allow efficient competition. Similar to the financing of traffic infrastructure in other sectors, rail transport is suffering from almost empty public coffers. In view of insufficient financial resources, the focus should be on a limited number of rail projects which are of particular importance under transport policy aspects, especially in freight transport, and which should be implemented quickly.

One of the key steps is the integration of the different rail transport systems in Europe. The integration approach would improve the interoperability of rail as a mode of transport. Great hopes are pinned on the European Rail Traffic Management System ERTMS whose completion will take many years, i.a. for cost reasons.

The railway sector will only be able to participate in traffic growth in Europe if the upcoming measures fostering competition, market opening and interoperability are implemented quickly. By contrast, opposition to full competition on the European transport markets would block the sector as a whole, which would widen the gap in inter-modal competition. It would already be a great success if the railways in Europe could keep their current shares of the goods and passenger transport markets roughly stable in the medium to long term.

Rail: Decline in market share in EU-15

Share in modal split, %



Sources: European Commission, Eurostat

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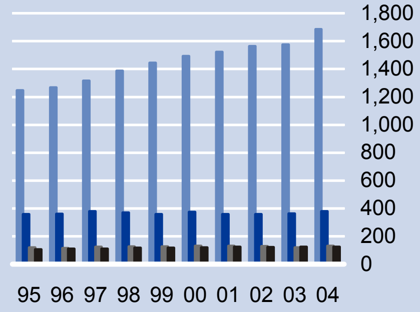
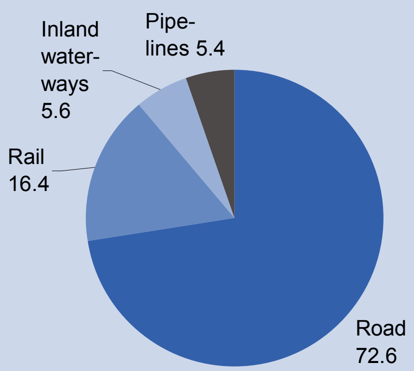
1. Current situation in EU rail market

Road freight transport dominant in EU-25
Traffic performance (bn tkm)



Sources: European Commission, Eurostat 1

Modal split in freight transport in EU-25
Shares in traffic performance (%), 2004



Sources: European Commission, Eurostat 2

In the last few decades railway transport participated only disproportionately in European transport growth. The share of rail as a mode of transport in total traffic (expressed in tonne-kilometres, tkm) continued to decline. In freight transport, it currently commands only 13% of the total in the EU-15, down from roughly 30% in 1970 (excl. short sea shipping). If the new EU countries are included, the modal split, i.e. the breakdown of transport volume by mode of transportation, looks slightly better for rail transport. Its market share comes to close to 17% in the EU-25 (2005) as rail transport in the East European member countries, accounting for more than one-third of freight transport, continues to play a much larger role than in Western Europe.

In passenger transport, the relative share of rail transport – in terms of passenger kilometres (pkm) – also saw a steady decline in the last few years. In 1970, it was still above 10% (EU-15). Last year, it was only around 6%, however. In passenger transport as well, the new member states raise the average.

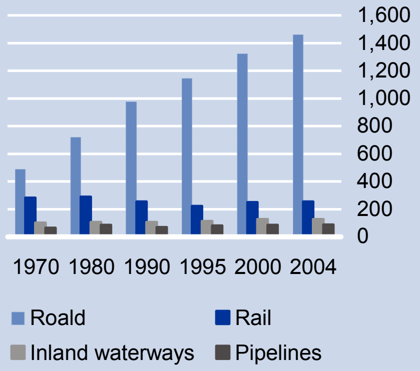
Various reasons for loss of importance of rail transport

As is well-known, the decline in the relative share of rail transport was mainly due to the rise in motorisation following World War II and the expansion of road infrastructure that went along with it. In passenger transport, the wish for individual mobility can naturally be met more easily by car than by train. In freight transport, changing requirement profiles have contributed to the success story of trucks. Freight services have seen an increasing shift away from bulk goods toward semi-finished and finished goods and general cargo. The goods structure and logistics effects both favour road traffic. Due to their speed and flexibility, trucks are better positioned to meet the requirements of industry as a result of the division of labour and state-of-the-art production processes (just-in-time). Especially over short distances, trucks are most competitive.

Besides the systemic advantages of road transport, the traditional structure of rail transport in Europe has contributed to the loss of the latter’s importance as a mode of transport. Until some years ago, rail markets of the EU countries still had national monopolies dominated by state-owned rail operators, without market access for providers from other countries. Railway companies often served political ends. Due to the lack of intra-modal competition, incentives were too low for state-owned companies to develop innovative solutions which could meet customers’ needs. By contrast, competition in road freight transport, which has been promoted by low market entry barriers for newcomers, raised productivity and led to a higher quality of road transport services. The national markets for road transport companies within the EU countries have been open without any quantitative restrictions already since 1998 – albeit with interim regulations for the new EU member countries providing for the transition by 2009.

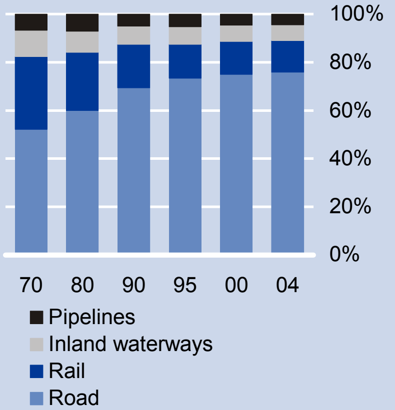
The large number of national borders, differences in European railway systems and the fact that foreign competitors were not allowed to enter the market in the past prevented the rail sector (especially in freight transport) from effectively competing with other modes of transport over long distances.

Road freight transport: Strongest growth in EU-15
Traffic perfomance (bn tkm)



Sources: European Commission, Eurostat 3

Only slight decline in rail's market share in EU-15 recently
Share in modal split, %



Sources: European Commission, Eurostat 4

Early measures of counteraction

The EU and the member countries have been trying for years to stop the downward trend of rail transport by taking various political measures. As early as in 1996, the European Commission published a White Paper with "A strategy for revitalising the Community's railways". The White Paper already focused on a greater role for market forces, reflecting the intention to give impetus to the railway sector.

The next White Paper of the European Commission, "European transport policy for 2010: time to decide" also advocated a strengthening of rail transport. In this paper, the Commission sets out very ambitious goals for the further development of rail transport within Europe. This strategy is to ensure that the relative share of rail as a mode of transport returns to the 1998 level by 2010.

Railway packages set liberalisation schedule

In addition to the White Papers mentioned, the European Commission has drawn up three railway packages so far. In 1998, the first package was presented which contains i. a. the accounting separation between rail transport provision and infrastructure management. Capacity allocation, track allocation, fee collection and licensing are also to be separated from transport services. The separation is considered a necessary precondition to guarantee transparent, non-discriminatory access to rail infrastructure. The first railway package also provides that all rail operators shall have market access to cross-border freight services in the Trans-European Rail Freight Network. Furthermore, the package foresees the introduction of charges on a marginal cost basis and a harmonisation of rules on the issuing of licences to rail operators. The first rail package has been transposed into legislation in the member states, albeit with a time lag, and some details have yet to be settled.

The second rail package was launched in early 2002. From a competition perspective, full-scale market deregulation in rail freight transport is the most important aspect. The market will be fully opened to competition from 2007. This includes cabotage on foreign networks within other EU countries. The cross-border freight market has been open to competition in the entire European rail network already since early 2006. Furthermore, the package contains a directive which provides for a common approach to European rail safety as well as a regulation on the establishment of the European Railway Agency, which started operating in 2006. The chief task of the railway agency is to improve safety and interoperability in European rail transport. Although the second railway package already took effect in spring 2004, it has not yet been transposed into national legislation in all EU countries (i.a. Italy and Portugal).

Initial provisions of the third railway package were worked out in early 2004. It provides for a full-scale market opening in international rail passenger transport by early 2010 (for the time being without cabotage). Furthermore, it contains proposals for the enhancement of passenger rights, a common licensing regime for train crews and potential compensation in the event of infringements of service contracts in rail freight transport (a kind of quality regulation). According to the plans of the Commission, the third railway package is to be adopted at Community level in 2007.

Interim results give a mixed picture

Five years after the publication of the latest EU White Paper, the performance of European rail transport gives a mixed picture. In Western Europe, the modal share of the railway in goods and passenger transport has roughly stabilised at low levels most recently. In Eastern Europe, however, the relative share of rail transport is on a steady downward trend, which is due, among other things, to backlog demand for individual motorisation and the governments' focus on the expansion of road infrastructure.

Increasing competition in countries with early market liberalisation

Competition in freight transport has increased above all in EU countries where the market was opened early – and in some cases independently of EU initiatives – to all operators; this applies i.a. to the United Kingdom, Germany and Sweden. In these countries, there are quite a few new entrants, albeit with a still limited market share. Furthermore, efficiency of the incumbent railway companies (i.e. due to the lower number of employees) tends to be higher in more open markets. Here, prices in freight transport also fell more strongly than in closed markets. On some international freight corridors, competitiveness has increased strongly. Rail transport along the Rhine or transalpine traffic may serve as examples.

Many rail markets not open to competition yet

Still monopolistic situation in countries such as France or Spain

In contrast to these positive examples, there are many rail markets where the largest (incumbent) provider controls almost 100% of the freight market. This applies to countries such as France or Spain. And even in the more open markets mentioned above freight and passenger transport are dominated by the incumbent operators. Only in very rare cases is the market share of the largest supplier below 80% (e.g. in the United Kingdom).

In view of these figures, the result of the second analysis by IBM Business Consulting Services and Humboldt University on the liberalisation of railway markets in the EU is not surprising. According to this analysis, many countries have granted documented non-discriminatory third-party access, but it cannot be implemented in practice e.g. as a result of expensive and complex access conditions. Furthermore, the analysis criticised that the market shares of third-party railway companies continue to be marginal. Although this comment was already made in 2004, the sobering basic assessment still applies by and large.

Considerable time lags before effects of political measures aiming at an increase in competition materialise

True, it is difficult to draw any firm conclusions on the efficiency of measures to strengthen competition in rail transport at Community level, as many member states did not transpose them into national legislation until later or have not completed them yet. Indications are that the targets of the White Paper may be too ambitious, however. The considerable time lag involved before the effects of all the political measures aiming at opening the markets to competition and strengthening competition materialise continues to be a characteristic feature of rail transport. This contrasts in particular with the situation in road transport.

2. Key factors for the future of European rail transport

The European rail sector will be largely driven by the following, in some cases interdependent factors in the coming years.

Opening the market completely is a conditio sine qua non

Well-functioning intra-modal competition strengthens relative share of rail in inter-modal competition

In our assessment, the upcoming market liberalisation in European rail freight transport is an important prerequisite for a revitalisation of the sector. Positive experience with market liberalisation in Germany reflects that well-functioning intra-modal competition can ensure an improvement in the position of rail transport in inter-modal competition. According to information given by the Federal Office for Goods Transport (BAG), the relative share of the railway in German domestic freight transport showed an increase of over 2 pp from 2001 to 2005. However, in absolute terms the modal share of rail, as calculated by the BAG, is obviously on the low side; according to the DIW, a German economic research institute, it accounts for roughly 16% – with a recently rising tendency. The increase in the modal share of rail in Germany is mainly due to the increase in non-government railways. According to Deutsche Bahn AG, transport by non-government railways reached a market share of just above 15% last year and saw a 55% increase in tonne-kilometre performance. Without the early market liberalisation of the railway network for freight transport in Germany, this success would not have been possible.

EU has to keep an eye on the implementation of Community law

Due to the key role of intra-modal competition, ensuring the implementation of European legislation is of major importance from the European perspective. Countries which do not open their networks to competition from freight transport from 2007 should therefore be subject to EU sanctions. Only if non-discriminatory access to cross-border rail transport and cabotage are guaranteed can rail as a mode of transport fully benefit from its unique competitive advantages over long distances. These advantages have even increased since the eastward enlargement of the EU even though problems in the new member countries in the area of infrastructure (tracks and rolling stock) will persist for years to come.

Non-discriminatory access to European railway absolutely necessary

Market liberalisation signifies non-discriminatory, transparent access to the European railway network and other infrastructure facilities – always with consideration to safety aspects of course. From the point of view of competition policy, it does not seem to make sense that those who decide on the modalities for access to the railway network are at the same time the main users of the network. Experience from other network industries, such as the energy sector, shows the negative effects of insufficient access to the network on the competitive situation in the respective sector. Nevertheless, economies of scale or microeconomic factors which suggest a stronger integration of network and operations have to be weighed up against aspects of competition.

Opening up of passenger transport market to be fostered as well

EU wants to extend the liberalisation of rail to passenger transport

The market liberalisation of European rail should not be limited to freight transport. For this reason efforts by the European Commission to open up the market for rail passenger services are to be welcomed. In a further step, access rights should be extended to cabotage, so that all European railway companies shall have the right to provide passenger transport services within other EU countries. In the liberalisation of the passenger transport market, Germany and Italy lead the European field even though the positive effects have so far been limited, especially in long-haul transport.

In general, long-distance passenger rail transport is likely to become more open to competition in the market; here, the high-speed Thalys train, which links Cologne, Brussels, Amsterdam, Paris and other cities in competition with other providers, is already an example. However, in local public transport, which is not the subject of our report, the tendering of concessions will continue to be more important (competition for the market).

Reliable calculation basis for rail track charges required

Transparent, non-discriminatory rail track charges needed

Ensuring an efficient opening of the market also implies a non-discriminatory method for establishing fees for the usage of the networks. There have been many approaches for calculating rail track charges. In some countries, rail track charges are based upon the full cost principle, in others they are calculated on the basis of marginal costs (based on different criteria). Above all in Eastern Europe, the freight sector is burdened with having to cross-subsidise passenger services, which have pushed up track costs in freight transport to levels in excess of those in Western Europe – despite lower network quality. The degree of cover for network costs from track revenues ranges from less than 10% e.g. in Sweden to 100% in the Baltic states. Disparities in the degrees of cost cover reflect, among other things, differing transport policy priorities and government subsidies.

The European Conference of Ministers of Transport made suggestions for the setting of track prices in a position paper published in 2005. For example, it advocates the standardisation of calculation bases for cross-border freight trains. This is expected to help make dispositions of European railway companies easier. In our assessment, it is more important to ensure that the calculation basis for the European railway companies is reliable and transparent in the long term. Furthermore, the Conference suggests to calculate track prices in markets with only one (dominant) operator of the rail network on a full cost basis. In networks with several operators in the market, fees should be set according to the marginal cost principle – with the possibility of charging higher prices if required. The marginal costs (including operating and maintenance costs) should be the lower limit of track prices as otherwise there would be a risk of under-investment in rail infrastructure.

Policy-makers to keep their influence on trade prices

The report of the European Conference of Ministers of Transport rightly points to the influence of policy on the level of track prices. If there are political reasons for keeping track prices at low levels, the government has to prevent infrastructure from being used until it wears out by making firm financial commitments.

Flexibility in the setting of track prices makes sense

The uniform calculation basis for track prices targeted by the EU does not necessarily mean equal fees in the individual member states in absolute terms – on the contrary: track charges will probably continue to depend on usage intensity and capacity bottlenecks (e.g. higher prices in peak times) as well as the density and quality of the network. These differences are likely to persist in the EU countries.

This also holds for the role of the policymakers, whose influence on track prices in the individual EU countries is unlikely to disappear in the short term. Too low fees result in underinvestment in the rail network and do not signal shortages. In such cases, higher public funds are required. Excessively high usage fees weaken the position of rail in inter-modal competition. In any case, the rail system will continue to depend on public funds.

Calculation basis for track prices must be transparent and reliable

From the point of view of competition, a reliable and transparent calculation basis for track access charges in the EU is crucial. It is also of major importance to ensure non-discriminatory track access charges for all European railway firms.

Usage-oriented expansion of infrastructure required

However, even the most efficient deregulation regime will be of little avail if the state of track infrastructure does not allow efficient competition. Similar to all investment in transport infrastructure at Community level and in the member states, the railway system suffers from nearly empty public coffers and the political priority of public spending on consumption over spending on investment. The implementation of the Trans-European Networks for Transport ("TEN-T") has been sobering enough: up to now only 3 of the 14 "Essen" projects have been realised. Funding will continue to be a problem especially as a shift in priorities at the EU level away from the support of the agricultural sector (47% of the EU spending programme for the 2007-2013 period) toward more investment in infrastructure is not on the horizon.

Underfunding of Trans-European Transport Networks…

In the planned EU spending programme for 2007 to 2013, funds of roughly EUR 8 bn are budgeted for the expansion of the Trans-European Transport Networks. The EU's subsidy threshold level on "priority" transport projects was raised to 20%; for cross-border regions, it rose to 30%. True, the granted amount of EUR 8 bn is almost double the sum in the previous Common Financial Framework 2000-2006. Nevertheless, it accounts for less than 1% of total projected EU expenditure. This has to be set against financing requirements of around EUR 250 bn required for the 30 current priority "TEN-T" projects. The funds required for the completion of the entire "TEN-T" programme exceed EUR 600 bn.

Concentration on small number of projects called for

… requires focusing on projects with the highest added value

There is no doubt about the diagnosis of nearly empty public coffers. Realistically speaking, the strains on the budget are rather unlikely to disappear in the next few years. In view of insufficient financial resources, the focus should be on a limited number of rail projects which are of particular importance under transport policy aspects – especially in freight transport – and which should be implemented quickly. The objective must be to create cross-border transport corridors and to remove bottlenecks on the rail network. Politically motivated prestige projects which are of little benefit to transport are out of place. Identifying corridors with the largest benefit to European rail transport is a task to be tackled by policy-makers, the European railway companies and the freight forwarding industry. A chief task of the EU is to motivate the member states to ensure good cross-border transport routes; for this is usually not on top of the agenda of domestic transport policy.

Long-term goal: Improvement in interoperability

Lack of interoperability impediment to competition in rail transport

The expansion of infrastructure is closely linked with the improvement in interoperability in rail transport. The large number of incompatible rail transport systems in Europe, which has grown over time, has dampened the opportunities of the rail industry dramatically. While truck drivers in the EU practically no longer face obstacles when they cross borders, crossing national borders is impossible for many trains for “technical” reasons unless operators are willing to accept long waiting hours. The lack of interoperability is reflected e.g. in different types of track gauges, different types of electrical power supply, differences in signalling and speed control, train safety technologies, as well as different job profiles for drivers.

Different admission procedures for locomotives in the EU out of date

True, some multi-system locomotives already ensure reliable rail transport e.g. between Germany and France. All in all, the complicated and expensive admission procedures for locomotives are highly anachronistic, however. For example, locomotives which are to operate in several countries have to obtain technical approval in each individual country. Such regulations would seem to be geared to the 19th century. Appropriate approaches are the mutual recognition of admission procedures, reliable and transparent requirements in the long term and non-discriminatory access for competing European railway firms. The admission procedure for rolling stock ought to be standardised at EU level. To push through reforms against the opposition to such plans is the EU’s job.

ERTMS: Source of optimism

ERTMS to ensure interoperability,…

Great hopes are pinned on the European Rail Traffic Management System (ERTMS) whose implementation is to bring large improvements in the field of technical interoperability in the railway sector. The ERTMS consists of two modules: a GSM-R radio system to exchange information between the ground and the locomotive, and the European Train Control System (ETCS). Among other things, the ETCS is meant to ensure the interoperability of cross-border transport (the different signalling systems for various networks are no longer required in the cab of the train), to raise safety standards to a high common level throughout the EU and to increase the capacity utilisation of the existing rail network.

… migration only on the long-term horizon, however

Despite these all in all positive aspects, the ETCS also meets criticism. Cost estimates for the system have been vague so far. They seem to be in the double-digit billion euro area, however. For this reason full migration is likely to take several years if not decades; in addition, some of the old functioning systems are still a long way from the end of their useful lifetime. As lines and the locomotive both have to be equipped with the ETCS, trains will in the interim period have to provide service on the established system and in parallel have to adopt the ETCS. In the short term, however, this will not result in competitive advantages vis-à-vis competitors who do not deploy the ETCS yet.

As a result of its recognised advantages, the control system seems to be the first-best solution in the medium to long term. On a shorter horizon, system migration should focus on strongly competitive international corridors and routes where new investment is due anyway; this is already the case. Short-term second-best solutions of the European railway companies which allow stronger interoperability and can be implemented relatively easily and cheaply should not be impeded by the migration process to ERTMS. The creation of new market barriers should be prevented, however.

Expansion of railway services on the cards

Opening of rail to competition to improve service quality of European railway firms

An important and in many markets (such as in road freight traffic) proven function of competition will probably become noticeable in the rail sector as well: the improvement of service quality. Beyond the provision of transport services, many European railway companies already provide logistics services. The service offer has thus been adjusted to satisfy the more sophisticated demand. Furthermore, the chances are good that the improved range of the services offered will help to stimulate demand. In a position paper, Deutsche Bahn AG lists storing, weighing, labelling, maintenance and customs clearance as examples. For sure, there is a great variety of ideas. If the European Commission believes in the virtues of competition in the rail sector as well, a separate quality regulation by the EU as considered in the third railway package is actually not required.

What about inter-modal competition?

Systemic advantages of the road to be maintained over short distances

It is only natural that the economic prospects of railways crucially depend on the development of competing modes of transport. As regards the quality of the offer, road transport is likely to maintain its innovation leadership – despite the expected improvement in rail transport. Its systemic advantages over short distances cannot be beaten by any other mode of transport (for goods) anyway.

Furthermore, the change in relative prices of the individual modes of transport has a decisive impact on the performance of rail transport. Here, road traffic will continue to benefit from the low wage costs of East European freight forwarders for years to come. However, the days of permanently cheap oil seem to be history, which admittedly leads to higher prices at the pump, but this is generally weighing on all modes of transport. An increase in mineral oil tax in countries where it is currently relatively low is a scenario to be reckoned with. Fiscal relief on road traffic is not on the horizon at least in the next few years.

Established companies in a much better position for take-off in future competition

The price competitiveness of rail transport should improve if untapped rationalisation potential is exploited. Here, intensifying competition will have positive effects. Naturally, weaker companies cannot survive. In principle, the (previously) state-owned companies are in a better position for take-off as they can benefit from economies of scale, a better knowledge of the market and traditionally high market shares. As regards financial strength, however, especially the situation of East European railway companies is a matter of concern.

Railways call for stronger burden on other modes of transport

The rail sector demands that a higher share of external costs of road freight transport fall under user fees; this target was also set out in the 2001 White Paper of the European Commission. In the meantime, the EU has given up this plan, however. According to the EU directive on the charging of heavy goods vehicles, the toll rate largely depends on infrastructure costs. From the point of view of transport research, this decision should not be rejected per se as many external cost categories of road traffic may be internalised by other instruments (e.g. CO_2 emissions by future emissions trading, accident costs by insurance contracts), and external costs are not incurred by road traffic as a means of transport alone (traffic jams caused by a lack of investment in road networks etc.).

McKinsey simulated a scenario where road tolls for trucks across Europe are aligned to the Swiss level (49 euro cents per kilometre) and analysed the potential impact on the modal split in European freight transport. According to the study, even such a substantial increase in road freight charges would bring up the market share of rail by only 2 to 3 pp.

Competition from low-cost carriers in passenger transport new challenge for rail

In passenger long-distance transport, the railway faces new competition from increasing market penetration by low-cost carriers. From the point of view of competition, the success of low-cost carriers at the expense of the rail sector is to be seen in a critical light if low ticket prices are made possible by continuing subsidies to publicly owned airports. It is not the objective of our paper to elaborate on the various kinds of subsidies in the transport sector, though. Besides, we would like to point out in this context that all modes of transport receive public aid under a broad definition of subsidies.

3. Outlook: Rays of light for European railways

Railways will only be able to participate effectively in European traffic growth in Europe if the above-mentioned measures fostering competition, market opening and interoperability are implemented quickly. By contrast, nationally motivated opposition would block the sector as a whole, which would widen the gap in intermodal competition.

In the medium to long term, stabilisation of market shares in Europe would already be great success

Chances for the rail sector are good in long-distance, cross-border goods transport where competition in the market is stronger already. Due to systemic lags and insufficient quality of rail infrastructure in many areas, however, road traffic will still be able to expand its market share for years to come. This applies especially to Eastern Europe where continuing losses in market shares of railways are on the cards. It would already be a great success if the railways in Europe could keep their current shares in the modal split of the goods and passenger transport markets roughly stable in the medium to long term.

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