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Fast Track to a Borderless Europe: The Credit Dynamics of High-Speed Rail

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Fast Track to a Borderless Europe: The Credit Dynamics of High-Speed Rail

Investment in European high-speed rail links is growing, and with it the private sector's participation in related transactions. The credit issues that have emerged from recent rail financings are ones that may well affect--if not dictate--the appetite of investors over the coming years.

Standard & Poor's expects a rapid increase in capital investment in high-speed rail infrastructure, rolling stock, and services over the next 10 years. Rail is forecast to be allocated 60% of the €400 billion to be spent on the Trans-European Network to 2010, and two-thirds of this rail investment is directed toward high-speed rail corridors, according to the European Commission.

High-speed rail projects, however, remain highly politicized due to their size, complexity, and environmental and socioeconomic impact. The risk of government interference is not expected to diminish.

Despite notable successes, private sector involvement in the rail sector has encountered problems, partly owing to the scale of investment required and partly to conflicting regulatory and political agendas across Europe. Experience suggests that large-scale, high-profile transport projects, such as high-speed rail links, aiming at investment-grade ratings should not rely entirely upon private financing. The levels of debt required, the project risk profiles, the inherent uncertainties, and the inextricable link with public policy objectives mean that investors typically look towards government for some level of comfort regarding full and timely debt servicing.

At the same time, the scale of the engineering challenge, combined with requirements for innovative construction techniques present challenges that many contractors have not previously faced.

A further potential constraint on credit quality is the transfer of demand risk to the private sector. Future uncertainties mean that consumer travel behavior and, consequently, project revenues, are difficult to predict.

Cross-border rail provision compounds these credit challenges. Conflicting priorities may emerge with the involvement of more than one government, introducing the potential for disputes about cost and revenue allocation. Such conflicts exacerbate any problems arising from differing legal, tax, and accounting regimes.

Nonetheless, Standard & Poor's Ratings Services believes, in the light of recent experience, that appropriately focused, credit enhanced transaction structures can continue to steer Europe's high-speed rail projects towards the upper end of the credit spectrum.

High-Speed Rail: Characteristics and Trends

For the purposes of this commentary, high-speed rail is defined as high-capacity, intercity rail services operating on densely traveled corridors on dedicated tracks equipped for speeds greater than 200 kilometers (km) per hour (kph; 125 miles per hour).

Speed, capacity, and service quality are the distinguishing characteristics and the key attributes in terms of determining market competitiveness, attracting passengers and realizing revenues, although the longer-distance, interurban, city center-city center nature of many of these services is also an important feature. Among the selected

higher-speed rail examples from around Europe in table 1, the average speed exceeds 175 kph and the average distance 200 km.

Table 1

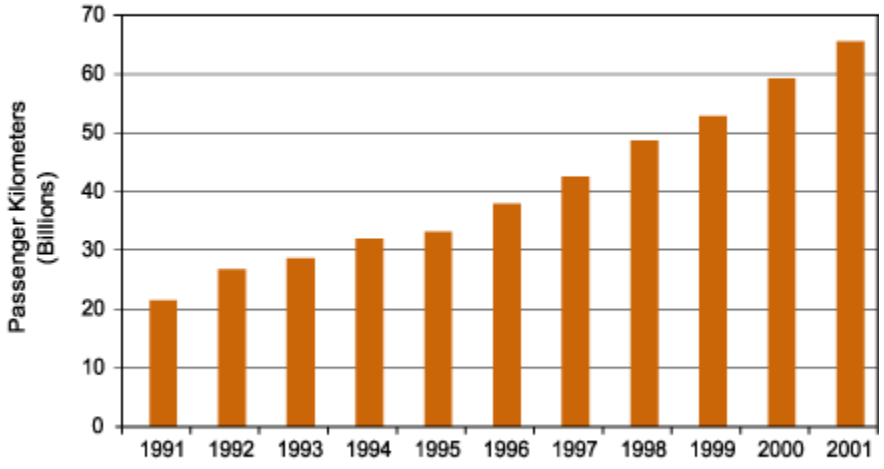
Selected Examples of Higher-Speed Rail Services

Country	From	To	Distance (kilometers)	Speed (kilometers per hour)
France	Valence	Avignon	130	259
International	Brussels	Valence	831	242
Germany	Frankfurt	Siegburg/Bonn	143	232
Spain	Madrid	Sevilla	470	209
U.K.	York	Darlington	71	177
Italy	Rome	Florence	261	167
Finland	Salo	Karjaa	53	152
Denmark	Odense	Høje Tåstrup	145	145
Norway	Lillestrøm	Gardermoen	30	140
Poland	Warsaw	Zawiercdie	253	130
Hungary	Hegyeshalom	Györ	47	128
Switzerland	Montreau	Sion	68	124

Source: Railway Gazette, 2004.

During 1991-2001, European high-speed rail passenger kilometers grew by more than 200%, as shown in chart 1. This represents year-on-year growth of 12%. The 65.4 billion passenger kilometers traveled in 2001 was twice as many as in 1995.

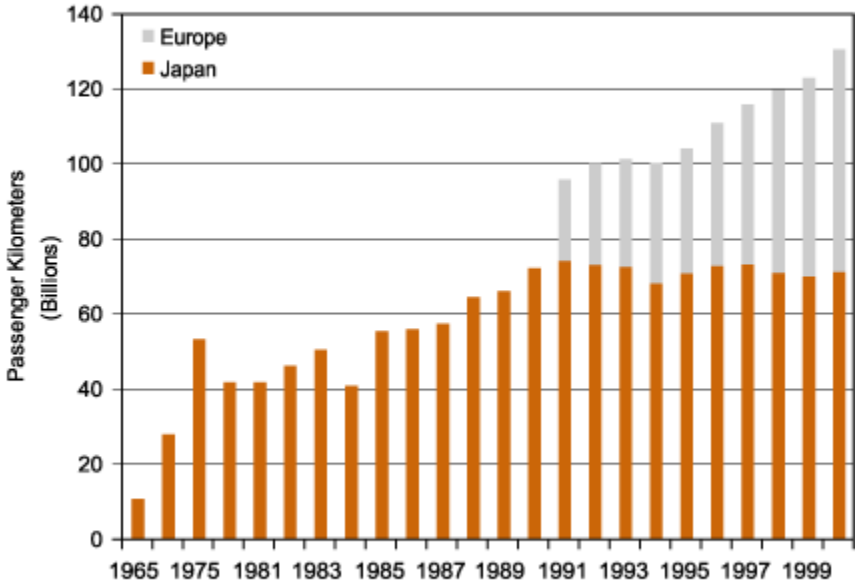
Chart 1
High-Speed Rail Traffic in Europe



Source: International Union of Railways, 2004

Europe is set to dominate the high-speed rail sector in the medium term, as indicated in chart 2. It will supplant Japan as the most important regional market for this category of infrastructure project.

Chart 2
High-Speed Rail Comparison
(Europe compared with Japan)



Source: International Union of Railways, 2004

European High-Speed Rail Today

In Europe, France has the largest number of high-speed rail kilometers in operation and under construction, with more than 50% of the total. If lines planned and under construction are taken into account, France, Spain, and Italy should account for almost 80% of Europe's high-speed rail network in the short term, as shown in table 2.

Table 2

European High-Speed Rail in Operation and under Construction

(Kilometers)	In operation	Under construction	Planned	Total
France	1,543	320	937	2,850
Spain	471	949	559	1,979
Italy	246	660	308	1,214
Germany	577	303	0	880
Belgium	88	100	33	221
Sweden	31	140	0	171
Netherlands	0	120	0	120
U.K.	74	38	0	112
Switzerland	0	57	0	57
Denmark*	33	0	0	33

Source: International Union of Railways, 2004. *Includes the Øresund Bridge from Denmark to Sweden.

The European Commission reports that two-thirds of its rail investment is directed toward high-speed rail corridors.

Despite these figures, the Commission acknowledges that high-speed rail development is well behind schedule.

Two significant projects under construction are in north Spain. They should significantly reduce journey times within the country and between Spain and France. The €1 billion Perpignan-Figueras link will be part of an important corridor from Spain to central Europe. It is expected that a €600 million syndicated loan will be extended by four European banks to TP Ferro, the preferred bidder for the project, which comprises a consortium of Spain's ACS/Dragados and France's Eiffage. The rest of the finance will come in the form of government subsidy.

This project will also introduce standard gauge (the separation between parallel rails) track into the main Spanish rail network. This will have many benefits for interconnectivity and interoperability. Spain's current broad-gauge network introduces delays because passengers are required to change trains at border crossings.

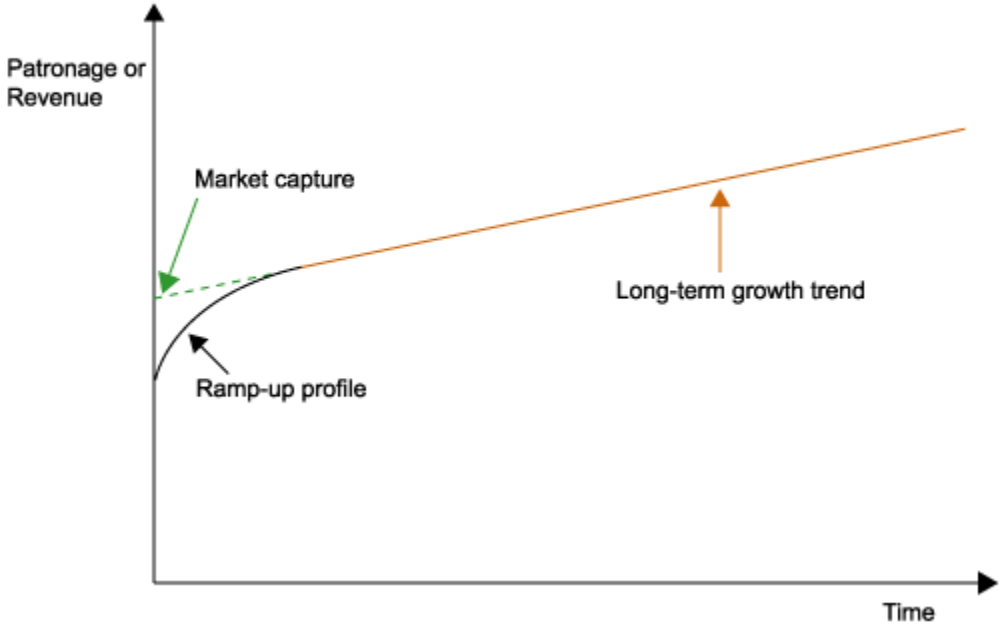
The Italian high-speed rail link project, Trene de Alta Velocita (TAV), connecting Torino, Milan, Rome, and Naples reached financial close in 2003. This €24 billion project was recently part-financed by €4 billion of 'AA'-rated bonds issued by government agency Infrastrutture SpA. Over the next six years, 900 km of line will be constructed. It will connect with the Trans-European high-speed rail line "Corridor 5" between Lisbon and Kiev, and form the backbone of another, between Palermo and Berlin. The completion of Stage 1 of the Channel Tunnel Rail Link (CTRL), also in 2003, demonstrated the U.K. government's commitment to the rail sector and, in particular, to high-speed rail connections to continental Europe.

Interpreting Patronage and Revenue Forecasts

The assessment of patronage and revenue forecasts is typically an essential component in the financial and economic evaluation of new rail schemes. Standard & Poor's experience suggests that longer-distance and/or cross-border traffic projections, using new, high-quality rail services, present specific challenges to forecasters. Depending on circumstances, these challenges can be even greater for freight than passenger movements. Long-term usage and revenue forecasts incorporate uncertainty by their nature, and this may result in lower credit quality for structures designed to pass volume, and therefore revenue, risk to lenders. The unreliability of demand models also affects the economic appraisal process, and can have an impact on key decisions about whether or not to develop high-speed rail services in the first place.

For initial analysis, rail patronage or revenue forecasts can be disaggregated into three principal components: projected traffic at service start-up, "market capture"; long-term traffic growth; and the time taken for early growth trends to mature, the "ramp-up period"--see chart 3. Small errors in any of these components become compounded owing to the length of the forecast horizons involved. This is a particular concern if a project has deferred debt service or a back-loaded debt structure.

Chart 3
Rail Forecasts: The Three Components of Initial Analysis



High-speed rail operations must be evaluated in their competitive context, alongside conventional rail services, roads, or air transport. The potential for aggressive and sustained competitor response must be taken into account, particularly in deregulated markets. Furthermore, assumptions based simply on extrapolations of historical trends into the future--such as a correlation between economic performance and traffic growth--should receive particularly critical scrutiny. At the same time, travel demand models cannot effectively predict consumer preference and industry changes or sectoral "turning points". Sensitivity tests, therefore, should be used extensively to determine the robustness of projections and, consequently, the strength of the underlying business case.

Many threats apart from demand risk can degrade rail project revenues. The potentially more acute ones concern regulatory change and political interference. Where fundamental issues, such as track-access charging regimes, are still evolving, political and regulatory stability cannot be relied upon as a credit strength. Exposure to industrial action can also degrade credit quality, as the experience of the French railfreight sector has illustrated in recent years.

Construction Risk: The Importance of Contractor Backing

Construction and related technical risks can represents significant credit challenges for high-speed rail projects in their early stages. Standard & Poor's analyzes the protection each project provides for bondholders against construction risk and postcompletion defects. In addition, land expropriation, site, and permitting risk, sometimes synonymous with political risk, can present specific challenges, particularly where autonomous local governments are involved. Project opponents may exploit legislative and environmental regulations and procedures to challenge proposals, which may lead to delays and even cancellation. Higher-rated rail projects have therefore benefited from clear and transparent political decision-making, and positive public and government relations.

Fixed-price, date-certain turnkey contracts with experienced contractors are essential for mitigating schedule and cost overrun risk on limited-recourse, privately financed rail projects. Where responsibilities and obligations are clearly assigned and liquidated damages, other performance-related penalties, and dispute resolution procedures are provided for, construction risk can be effectively mitigated.

Contractual delay damages should be sufficient to cover principal and interest payments, perhaps for many months, depending on specific project risks. Performance and delay related liquidated damages play a complementary role to guarantees and warranties in risk mitigation. In some cases, rail sponsors have provided whole or partial completion guarantees.

In the example of Infrastrutture SpA, construction plans have been defined and authorizations gathered under the umbrella of the Merloni Law (Italian framework law for public works), which mitigate the risk of cost overruns by setting a ceiling for extra costs under tendered contracts. Out of the estimated project costs of €35 billion for the TAV transaction, €13 billion has been financed to date: €5 billion through state contributions and €8 billion through state-guaranteed debt.

Standard & Poor's considers the opinions of an experienced and internationally recognized independent engineer to be key to the credit evaluation process. This input is important in the evaluation of central matters as whether the contractor can meet the construction schedule and progress milestones. Other issues on which the independent engineer's comments are taken into account include whether the contractor can deliver the required infrastructure to specification and within budget, and the pool of expertise from which replacement contractors can be drawn if required.

The contractor's previous experience on similar works is also important. Limited experience can constrain a transaction's credit quality. Weak securities and guarantees may have the same effect. Ratings will also reflect construction management plans that fail to control construction fund disbursement and place lenders at risk.

Is High-Speed Rail Viable Without State Support?

Governments remain central to the planning, development, and promotion of high-speed rail services, and appropriately focused support remains an important credit enhancement for related transactions. The development of high-speed rail links is a central policy objective for many European governments. Fiscal constraints, however, will limit the role played by state budgets. Nonetheless, many government-owned or supported railways have higher ratings than their stand-alone financial performance would merit. Governments' demonstrated commitment to high-speed passenger rail travel remains an important part of Standard & Poor's credit analysis of such projects.

National and local governments are increasingly looking to concession financing and/or public private partnerships (PPP) as a way of promoting and accelerating infrastructure development. Recent PPP structures have embraced a number of concepts aligned with sponsor objectives. Payments, for example, may only begin when an asset becomes available for use, while performance regimes are increasingly customer-service focused. In the London Underground PPP transactions, involving Metronet Rail BCV Finance PLC, Metronet Rail SSL Finance PLC, and Infraco JNP, payments are tied to the provision of additional passenger capacity, reductions in journey time, and improvements in the traveling environment.

PPPs implemented to date have demonstrated that the private sector is prepared to take responsibility for

construction risk and most of the risks associated with the subsequent operation of an asset. It usually, however, seeks to mitigate market risk, such as that of disaggregate consumer demand or the credit risk of a key off-taker. In the CTRL transaction, for example, track access charges due from the underperforming Eurostar are guaranteed by the U.K. government.

Government support can take many forms, such as a minimum revenue guarantee or a revenue stream either guaranteed or paid directly by government. The U.K. government's obligations on the CTRL were unconditional and irrevocable. They are payable irrespective of asset usage, availability, and/or performance.

There is considerable government participation in, for example, CTRL in the U.K. and the Paris-Marseille high-speed rail link in France. Both transactions relied on state support and EU money to fund significant capital investment. In addition, the funding and construction of the civil works for the high-speed rail link PPP in the Netherlands was carried out by the government.

Future High-Speed Rail Transactions

Despite the financial, construction, and operational challenges facing high-speed rail projects, Standard and Poor's has assigned investment-grade ratings to major rail infrastructure financings across Europe. Invariably, ongoing government support was these transactions' key credit strength. Standard & Poor's also gives credit uplift for strong, independent economic regulation, such as that provided by the Office of the Rail Regulator in the UK. Such regulation can be an important mitigant of political risk.

The 'AAA' rating on the CTRL debt reflects the credit enhancement provided by the U.K. government through a structure designed to create an unconditional and irrevocable stream of track access charge payments. This landmark transaction involved a £1.25 billion securitization of government-paid or government-guaranteed access charges. In the case of Infrastrutture SpA, its 'AA' rating is linked to direct support from the Republic of Italy (AA/Negative/A-1+), to which the issuance is ultimately linked, and the support provided by liquidity facilities. The Italian state supports the transaction by means of equity injections, grants and debt guarantees. Standard & Poor's high-speed rail ratings also factor in the essentiality of passenger and freight rail transport in the context of European economic development and regeneration.

Cross-border rail transactions face particular challenges and have suffered delays as a consequence. In part this has reflected the lack of any integrated approach to the planning, assessment, and funding of infrastructure straddling more than one jurisdiction. Related challenges stem from difficulties in achieving convergence between neighboring countries' political, economic, and commercial interests, and the problems of finding ways to share the investment burden where benefits accrue in one country but costs are incurred in another. The longest delays have been experienced on projects' cross-border sections, which tend to be less profitable and have lower priority than purely domestic connections. Such difficulties can be overcome, however. The Øresund crossing between Denmark and Sweden reflects the commitment of both countries to work together and support funding requirements for this fixed link.

Despite European Commission and European Parliament support for increased liberalization, introducing competition into the European railway sector is complex and is likely to be slow. The future competitiveness of rail services is an important credit factor, however. Competition rules could reduce a state's ability to intervene, as in the deregulated telecommunications and energy sectors. The level of state participation, which supports a number of

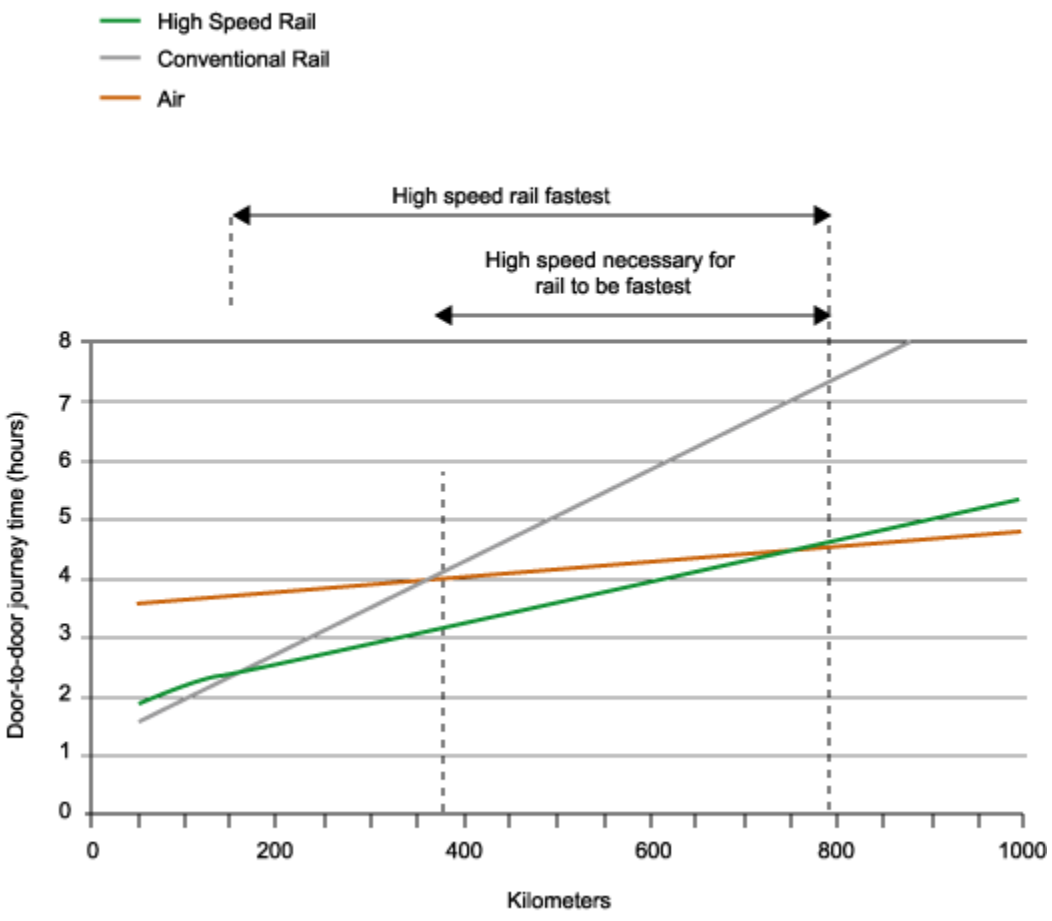
ratings, would diminish. The Commission actively monitors state aid flows to ensure that government involvement does not distort market dynamics. The current EC Railway Directive already requires an accounting separation of competitive activities from rail operators' monopoly and public service operations.

Planes to Trains

The movement of passengers from short-haul air travel to high-speed rail services will be a key issue for development of the sector in Europe. High-speed rail links have won passengers from air travel over medium-length distances, where airlines remain at a competitive disadvantage. High-speed intercity rail links, at two to three hours and carrying a large number of business passengers, can allow better balancing of rail and air capacity, particularly where cities suffer from air traffic congestion.

Rail services have a competitive advantage over air travel for distances of up to 400 km, as shown in chart 4. High-speed links, however, are necessary if this advantage is to be maintained over distances of up to 800 km.

Chart 4
High-Speed compared with Conventional Rail



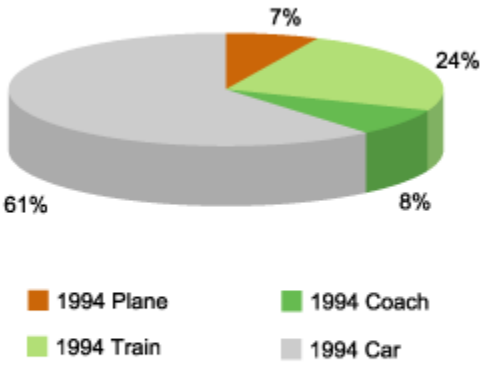
Source: Commission for Integrated Transport, 2004

The competitive power of high-speed rail in such cases has been clearly demonstrated. Before the first high-speed section of the CTRL was opened, Eurostar had secured 58% of the Paris-London route, one of the most traveled corridors in Europe, market. Shortly after opening, that figure jumped to 66%.

With the launch of the Thalys high-speed train, rail market share on the 310 km link between Paris and Brussels has more than doubled to reach 50% (see charts 5 and 6). In response, Air France discontinued all flights between the two cities. Since 1994, the Societe Nationale des Chemins de Fer Francais (SNCF; AAA/Stable/A-1+) has replaced Air France connections between Paris and Lille. In Germany, Deutsche Bahn AG (AA/Stable/A-1+) has partially replaced Deutsche Lufthansa AG (BBB/Stable/A-2) on the Frankfurt-Stuttgart and Frankfurt-Nuremberg routes.

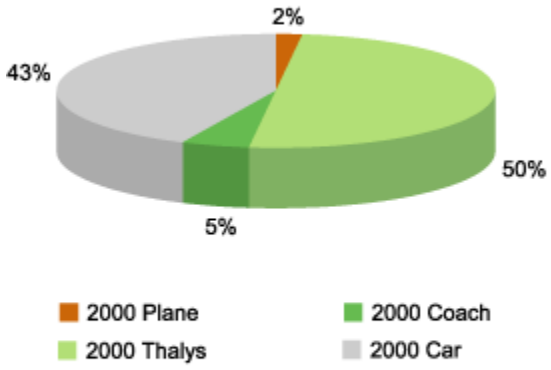
The Madrid-Seville corridor in Spain is one of the most successful high-speed rail links in Europe, enjoying load factors of 75% and a punctuality record of 99.8%. It has won substantial market shares from airlines, coaches, and private cars, boosting its market share from to 54% from 14%.

Chart 5
Market Share Paris-Brussels 1994



Source: International Union of Railways, 2004

Chart 6
Market Share Paris-Brussels 2000



Source: International Union of Railways, 2004

Despite this competitive environment, high-speed rail can complement air services. It can improve access to airports, expand their catchment area, and enhance profitability by allowing airports to concentrate on higher-earning, longer-distance flights.

Serving an Expanded Europe

The accession of the new Member States to the EU in May 2004 should prompt considerable expansion in rail infrastructure development. Such infrastructure will be vital for the transition economies to the east, while rail investment focused on upgrading infrastructure and modernization in existing EU member states, such as the U.K., is unlikely to diminish.

Good transport links remain a key prerequisite for effective European integration owing to the great geographical distances between cities across the Union. Trade with Central and Eastern Europe already generates significant flows along established economic corridors and forecasts point to strong and sustained traffic growth. In this context, and to reduce pressure on already congested road networks, the further development of high-speed rail links will remain a priority for governments and investors.

Sidebar: Trans-European Transport Networks

Development of traffic management systems, liberalization of the rail sector, and improved organization of services are key elements of the EU strategy to enhance the competitive position of European railways. The Trans-European Transport Network (TEN-T) program has recently been updated to address some of the difficulties experienced during the implementation of a tranche of rail projects dating from 1994. New projects will help ensure the success of enlargement, when 10 accession states join the Union (see table 3 and chart 7). Innovative funding sources have

been identified to help deliver new and existing projects, and prevent the schedule delays that have plagued the program until now.

European railways will be required to develop their networks in terms of infrastructure, rolling stock, and operations in ways that facilitate the running of trains across the whole of the European high-speed rail network. The ultimate aim is the harmonization of technical standards across Europe so that any interoperable train can run on any TEN-T rail link. At present, barriers exist and may take many years to remove. Different loading and track gauges are particular constraints, but harmonization, or at least interoperability, is possible in many other respects. Common technical standards and procedures for Europe-wide interoperability are expected to boost cross-border, high-speed services. An improved cost base will enable more traffic to be attracted to rail--a modal shift with considerable economic and environmental benefits.

A lack of financial and decision-making transparency, and the occasional absence of competitive tendering for subsidized transport services also present challenges for the European rail sector. Standard & Poor's highlights the fact that no integrated approach exists for the planning, evaluation and funding of cross-border links. In the past, major delays have been experienced on tunnel and bridge projects that, despite having weak business cases, represent important border crossing points. Two recent projects fall into this category: the Lyon-Turin high-speed train/combined transport project and the Brenner tunnel. The longest delays were experienced on the international, cross-border sections of these projects, which were accorded lower priority than the national segments.

Coordination and realistic risk sharing between the public and private sector participants involved in a large-scale, international rail project are keys to success. The establishment of a framework to manage and monitor the project, and have responsibility for its funding, is particularly challenging. Such frameworks are required, however, if the ambitions behind the TEN-T are to be realized and high-speed rail projects are to continue attracting international investors.

Table 3

Trans-European Transport Networks: High-Speed Rail Proposals

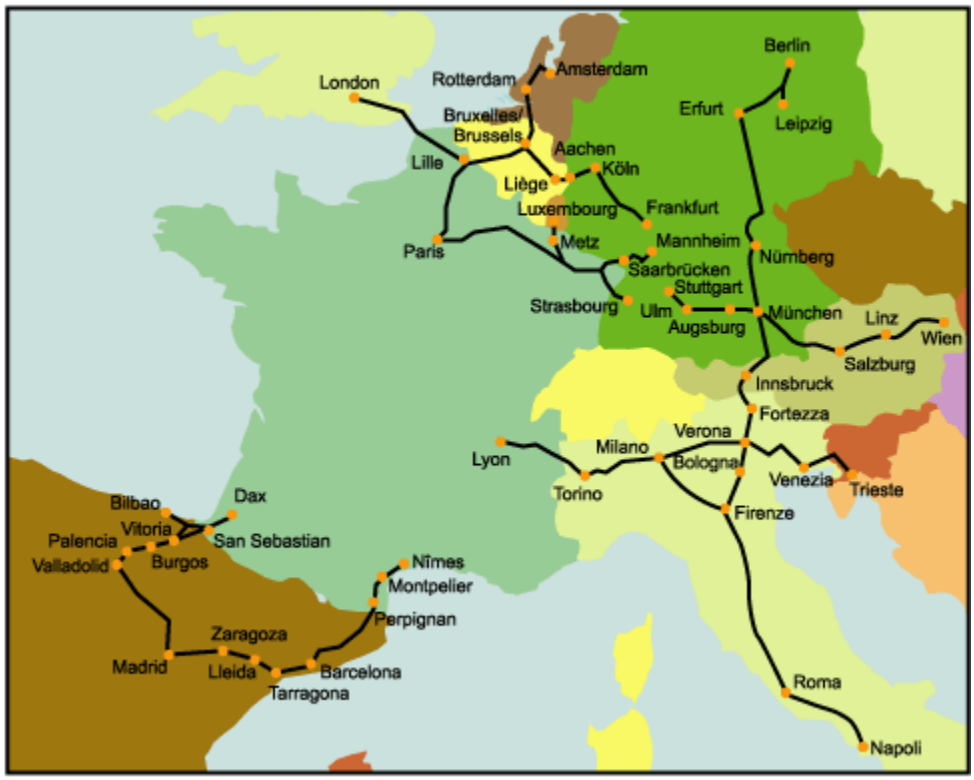
Project	Cities served	Comments/objectives
High-Speed Train/Combined Transport North-South	Munich-Nuremberg-Erfurt-Halle/Leipzig-Berlin; Naples-Verona-Munich; Bologna-Milan	Three routes streamlining rail journeys along one of Europe's major north-south rail corridors, speeding journey times between northern Europe and Italy
High-Speed Train PBCAL (Paris-Brussels-Cologne-Amsterdam-London)	Brussels-Belgian/Dutch border; U.K.: London-Channel Tunnel Access; Netherlands: Belgian/Dutch border-Rotterdam-Amsterdam; Germany: (Aachen) Cologne-Rhine/Main	Five routes linking the capitals of (and other major cities in) five northern European countries, significantly reducing journey times. Also provides improved connections between some of Europe's key airports, promoting intermodal air-rail journeys
High-Speed Train South	Madrid-Barcelona-Perpignan-Montpelier-Nimes; Madrid-Vitoria-Dax	Two new high-speed train lines in northern Spain dramatically reducing journey times between Madrid and France's southwestern and southeastern coasts, as well as within Spain itself
High-Speed Train East	Paris-Metz-Strasbourg-Appenweier-(Karlsruhe); Metz-Saarbrucken-Mannheim; Metz-Luxembourg	East-west links connecting the extensive high-speed rail networks already existing in Germany and France. Includes a spur north to connect with Luxembourg

Table 3

Trans-European Transport Networks: High-Speed Rail Proposals (cont.)		
High-Speed Train/Combined Transport, France-Italy	Lyon-Turin-Milan-Venice-Trieste	Main east-west link through the Alpine valleys linking the French and the Italian high-speed rail networks. Halves journey times and significantly increases capacity, especially freight, to relieve Alpine roads of truck traffic
East European Combined Transport/High-Speed Train	Stuttgart-Munich-Salzburg/Linz-Vienna	Enhances links between the EU and the candidate counties of Central and Eastern Europe. Additional freight capacity to switch goods movement from road to rail

Source: European Commission, 2004.

Chart 7
TEN-T: High Speed Rail Priority Projects



Source: European Commission, 2004 (compiled by Standard & Poor's)

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