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## Freight transport: Road versus Rail – Modal changes ahead? June 2008

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Growing freight volumes are putting the European freight transport sector under pressure. Road transport, the preferred mode, is increasingly impacted by network congestion, increasing fuel prices, road tolls, drive time regulations and environmental issues.

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Rail transport, as an alternative to road, is increasingly moving into the focus of logistics operators and more logistics sites including direct rail access are being proposed.

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Is the European transport sector facing an imminent modal shift towards rail and how will the European logistics landscape change?



# Increasing Freight Transportation: Challenges ahead

Growing trade volumes, longer and more complex supply chains, traffic congestion, increasing fuel prices, CO<sub>2</sub> emissions and global warming present unprecedented challenges to today's logistic supply chains.

On the back of positive economic growth over recent years, world trade volumes have risen strongly. Since 2000, world trade has grown more than twice as fast as global GDP. The freight transport sector saw increases related to significant structural changes in logistics supply chains:

- Increasing transport distances (global supply chain)
- Growing containerisation / transshipment
- Growing trade flows, particularly from and to Asia
- Shorter delivery times (more frequent vehicle movements)
- More varied delivery patterns (product shelf life, retail strategy, etc.)
- E-commerce (increasing the total number of vehicle movements)
- Recycling (favouring reverse logistics: more back-haul cargos)

## Global GDP and Trade

Annual Growth Rates	2004	2005	2006	2007	2008 (F)	2009 (F)
Global GDP	+ 3.3	+ 3.5	+3.8	+ 3.7	+ 2.7	+ 3.0
Global Trade	+ 6.4	7.2	+ 8,5	+ 5.5	+ 4.5	+ 7.2

Source: WorldBank

Between 1995 and 2005, total freight transport in the EU 25 increased by approximately 31% and forecasts from the European Commission indicate a further 50% increase in freight transport by 2020, challenging the transport network. Infrastructure shortage, traffic congestion, increasing transport costs, shortages in qualified staff, safety concerns and sustainability are all major concerns. Traffic congestion includes various parts of the European transport system (roads, rail links and harbours). CO<sub>2</sub> emissions and the contribution to global warming are increasingly in the public eye, putting the transport sector under pressure to counteract negative impacts.

Various options are being considered to improve freight transport in terms of time, safety and environment.

In this paper, Jones Lang LaSalle looks at the dynamics of increased freight transport and the impact this will have on the logistics real estate market in Europe. In particular, we examine the performance and future prospects of road and rail transport, assessing the likelihood of a future modal shift from road to rail..

Jones Lang LaSalle has also surveyed operators in the European freight transport sector and its results are set out in the report.

# The Future of European Freight Transportation: From Road to Rail?

Freight transport in Europe is dominated by road, with a modal share of 44% in 2005. Strong growth in road transport compared to other modes reflects its flexibility and efficiency in delivering goods. In particular, demand factors such as reduction in heavy bulk transport and the increasing importance of door-to-door and just-in-time services have contributed to the strong growth of road transport over the last decade. It continues to be the most flexible in terms of pickup and delivery and many destinations can only be reached by road.

Despite the numerous facts in favour of road transportation, concerns are mounting due to:

- Increasing road congestion
- CO<sub>2</sub> emissions
- Increasing transport costs (fuel prices, road tolls, taxes)
- Drive time regulations
- Larger distances to be covered (global supply chain, EU enlargement and the abolition of borders with neighbouring countries)

These concerns are putting the European logistics sector under pressure to increase the efficiency of the transport infrastructure network and are stimulating interest in alternative transport modes, especially rail.

This is ultimately underpinned by a number of factors making rail more attractive than previously:

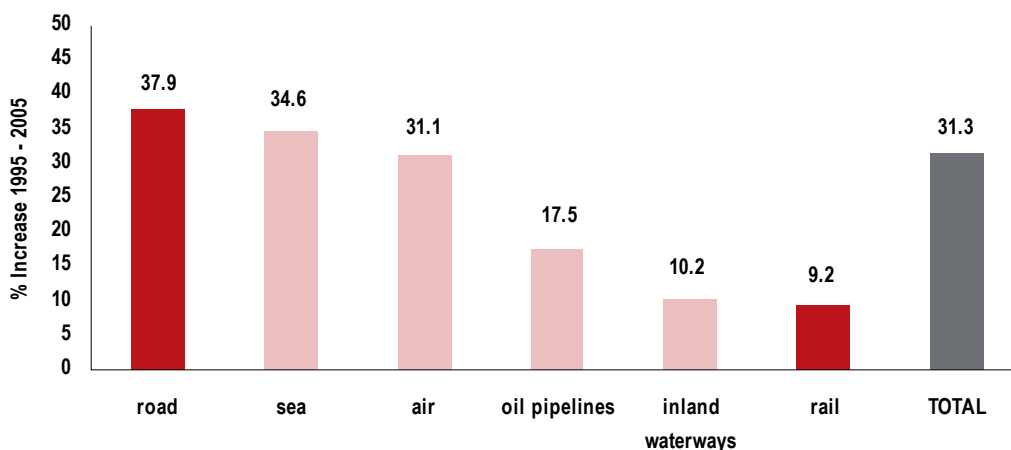
- Liberalisation of European railway networks (since 2007)
- Network improvements
- Lower CO<sub>2</sub> emissions compared to other transport modes
- Increased efficiency from growing containerisation
- Cost advantages over longer distances

## Remaining challenges for rail

Despite the acknowledged advantages of rail transport, a number of issues continue to hold back a significant shift towards rail, including capacity constraints, longer transport times, poor interconnectivity between single countries and different transport modes, tracking and safety concerns as well as higher costs over shorter distances compared to road transport.

## European Freight Transport Performance

Source: EuroStat



Intermodal transport focusing on a combined road/rail model is widely seen as a universal solution to a range of shortcomings in freight transport today. However, expectations have so far not been met.

Rail transport is expected to increase in importance and direct rail access at logistics sites has already become a key aspect for many developers. Nevertheless, rail recorded the lowest increase in freight transport over the last decade (1995-2005). In fact, with 9.2% growth, its modal share fell to 10% from 12% at the beginning of the 1990s. European Commission forecasts indicate a further decreasing share of rail transport, down to 8% in 2020, despite plans to move more freight from road to rail.

Critical issues in different transport modes and growing environmental pressure will drive the future strategy of logistics operators.

Today a number of important considerations support an increasing share of rail transport. At the same time, current restrictions in the European rail network are offsetting these benefits. While road transport continues to be faster and more efficient than rail and the cost factor is not higher, operators will resist being pushed off the roads. As a result it is still too early to see operators moving a significant share of their freight to rail.

## Sustainable transport – road fares better than expected

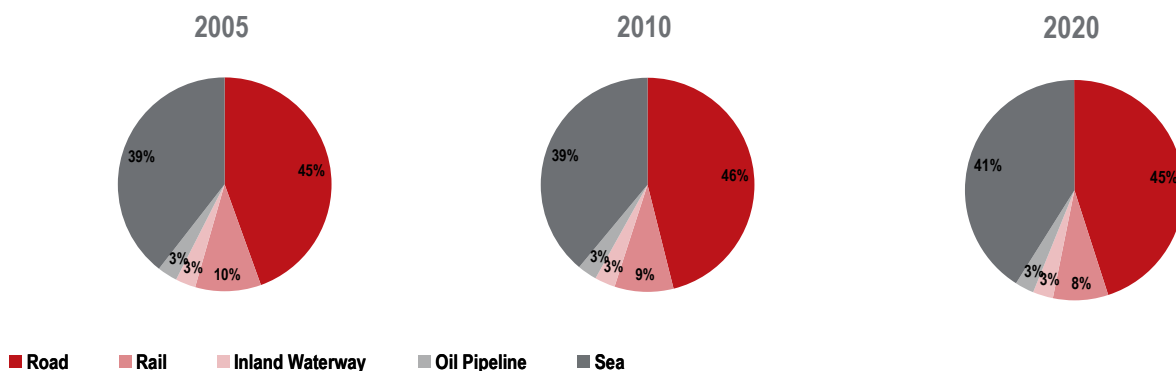
Environmental responsibility is moving up corporate agendas, and large retail chains as well as manufacturers are increasing their emphasis on the environment. Recent examples include Wal-Mart announcing the creation of a framework of social and environmental standards for the sourcing of goods and Tesco, who hope to create a mass movement in green consumption and cut emissions in their distribution network.

Freight transport, viewed as a global contributor to the greenhouse effect, is increasingly under pressure to become more environmentally friendly. In particular, concerns over pollution and CO<sub>2</sub> are driving the argument to move more freight from road to rail, as rail provides the lowest level of CO<sub>2</sub> emissions.

Technological progress has steadily improved the environmental performance of road transport

These considerations are driving expectations that the share of rail transport will rise, and with that the demand for logistics facilities directly connected to the rail network. However, apart from various other factors in favour of road transport (faster, more flexible and efficient), its environmental performance has steadily improved and will continue to improve further, thanks to technological advances.

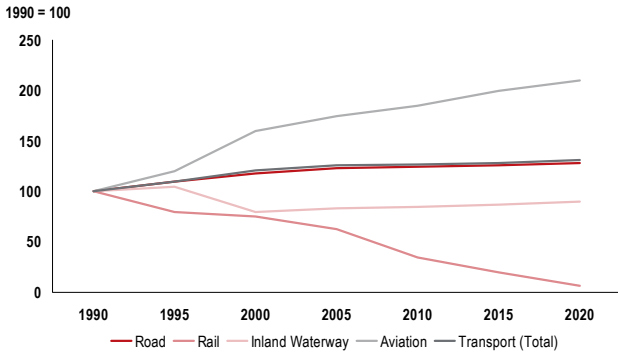
### Modal Shares (tonne-kilometres) – Changes ahead?



Source: Eurostat, European Commission

On the other hand, rail transport, seen as the most environmental-friendly form of transport also produces pollution, especially noise pollution. Diesel traction contributes to the greenhouse effect and local pollution, as does thermally generated electric traction.

**Expected evolution of CO2 Emissions by Transport Mode**



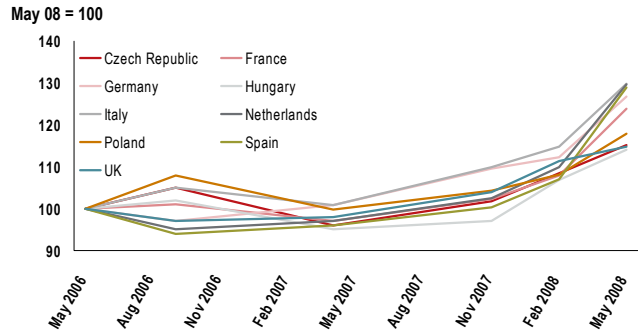
Source: European Environment Agency

While the difference in CO2 emissions for the two modes remains significant, continued improvements in road transport will reduce the gap over the coming years. Considering the higher efficiency road currently offers to logistics operators, environmental aspects alone will not make operators reduce their reliance on road transport.

The real driver to increased rail transport will be cost considerations, driven by rising fuel prices and road tolls, as well as delays due to congestion and drive time regulations.

Diesel prices have risen by their highest margin this century. Prices are highest in Western European countries but over the last 12 months have seen significant increases in the rest of Europe as well, heavily impacting on the costs of freight transport. To limit the effects of increasing costs, logistics operators are facing the need to adapt their supply chain.

**Increasing Fuel Prices**

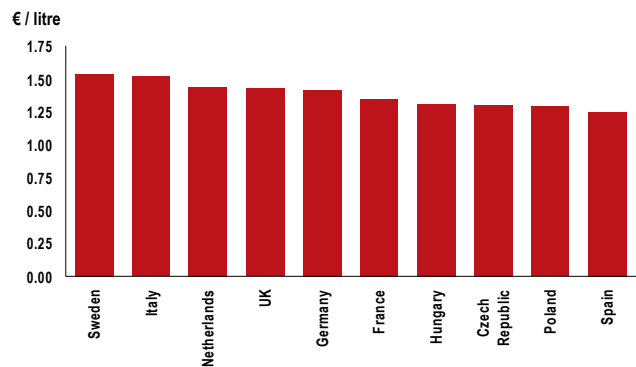


Source: AA Roadwatch

This will be achieved by reducing the share of road transport and/or moving towards a regional rather than a central distribution network in order to shorten transport routes to local consumer markets. Given the constraints in today's rail network, short to medium-term actions will be primarily focused on building a regional network, sustained by new modern supply in the different markets to facilitate this move.

Despite many factors pointing to the social and economic benefits of increasing the share of rail transport, constraints in the sector are holding back its appeal. Efforts by the European Commission to improve the European freight transport network, emphasising rail transport, will help change this situation. However, the impact is unlikely to be seen until the network comes into full operation.

**Prices for Diesel Fuel, May 2008**



# TEN-T Programme – putting more emphasis on rail

Following the need to improve and expand the European transport network, the TEN-T programme from the European Commission promotes intermodal transport, making better use of existing infrastructure and resources by integrating short-sea shipping, rail and inland waterways into the logistics supply chain to reduce road congestion.

The TEN-T network is expected to carry around half of all freight movements in Europe and should have a huge impact in reducing transport time, mainly through a substantial reduction in road congestion and improved rail performance. Thirty priority routes have been identified and should be complete by 2020.

With potential new accession countries and growing trade between EU and non-EU countries on the continent, the original programme, limited to EU countries, has been extended with five priority axes linking the EU to these neighbouring countries.

## The TEN-T network will have an important impact on the structure and geography of the future distribution network

The improved efficiency of the European freight transport network should have a significant impact on future logistics supply chains, in particular the structure and location of distribution warehousing facilities. The rail sector is expected to see positive results through more and improved connections and higher interoperability, stimulating growth in rail transport and at the same time increasing the appeal of direct rail access at logistics sites.

While the TEN-T programme is predominantly referred to as a driver of rail transport, it will offer also improvements to road networks and other transport modes as well as increased interconnectivity, with freight moved on the corridors forwarded quickly to different European regions and from one transport mode to another. As a result, surrounding areas are increasingly attractive to occupiers, developers and investors as they represent Europe's future main freight routes, while strategic locations at the crossroads of different corridors are increasingly favoured areas for modern logistics facilities.

In markets with an emerging modern logistics sector, such as many CEE countries and Turkey, the spotlight will be on future main transport links, with new developments to be completed at strategic locations around the corridors.

While large parts of the TEN-T network will not be completed for another 10 to 15 years, and with connections to non-EU countries taking even longer, logistics operators are nevertheless expected to implement their future distribution strategies by moving to locations adjacent to the network. However the impact on rail will remain limited until the network has been completed.

### 5 priority axes into EU neighbouring countries

- Motorways of the Sea: linking the Baltic, Barents, Atlantic, Mediterranean, Black and Caspian Sea, including an extension through the Suez Canal toward the Red Sea
- Northern axis: Linking northern EU with Norway to the north and with Belarus and Russia to the east; connecting the Barents region with Norway through Sweden and Finland with Russia
- Central axis: Connecting the centre of the EU to Ukraine and the Black Sea and the Caspian Sea
- South-eastern axis: Linking the EU with the Balkans and Turkey and further with southern Caucasus and Caspian Sea as well as with the Middle East, Egypt and Red Sea
- South-western axis: Linking south-western EU with Switzerland and Morocco, Algeria, Tunisia and Egypt





# Logistics Occupier Survey 2008:

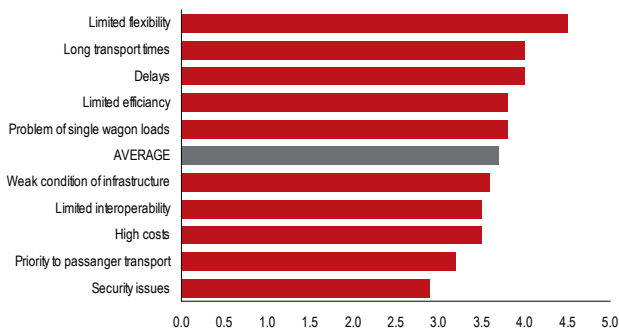
## A slow move towards rail transportation

This section of our report shows the results of the Jones Lang LaSalle Freight Transportation Survey undertaken in April 2008. The survey was carried out among 300 logistics operators based in Europe (excluding the UK), involving 3PLs, retail and manufacturing companies. Survey questions were related to rail transport and seaports.

Rail transport is currently rated as fairly unsatisfactory, demonstrated by an overall index rate of 3.7. This result points to persistent bottlenecks and indicates a cautious approach towards shifting more freight from road to rail.

Limited flexibility stands out as the most negative aspect with nearly 60% of respondents rating it a very important concern and 36% an important concern. Long transport times and delays were also cited as a major source of concern.

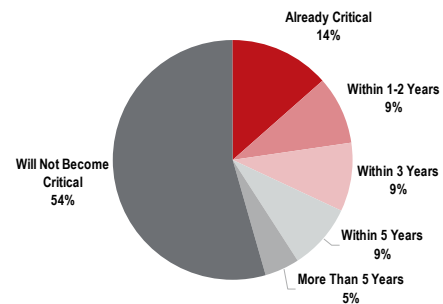
### Major concerns of railway transportation



Source: Jones Lang LaSalle

Despite increasing interest in rail transport and more sites offering direct rail access in development, only 14% of respondents said that direct rail access is already important. 27% expect that rail access will become important within the next five years, another 5% expect this to be the case only after more than five years. 54% of respondents do not currently expect rail access to become important at all.

### When Will Direct Rail Access Become a Critical Issue?



Source: Jones Lang LaSalle

## Additional demand for logistics sites offering direct rail access will remain limited in the next few years, as operators have apparently already satisfied this requirement

According to the Jones Lang LaSalle Freight Transport Survey, 46% of respondents expect to integrate direct rail access to their supply chain at some point over the medium term. At the same time, 45% of respondents claim to be connected already. Given the low importance attributed to rail at the survey date, this rate seems to be disproportionately high. There are two logical conclusions:

- Roughly 55% of respondents are located within a seaport location, which usually have rail connections: this is likely to be boosting the result.
- For 41% of respondents, rail access is either already important (14%), or will become important within the next five years (27%). This compares to 45% of respondents already connected to direct rail access. It can be assumed that many operators do not actively use this service today. However, when it becomes more important in the future, they are already in the right location.

Following from this, it seems unlikely that demand for logistics sites offering direct rail access will significantly increase in the future, as a large number of operators apparently already have satisfied this condition. Most demand is therefore likely to be generated from relocation. On the other hand, additional demand generated by companies changing their current transport strategies will remain more limited.

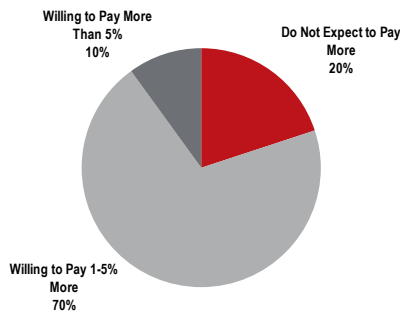


## Uplifts in rents for sites with direct rail access will remain contained

Developers look to recover higher development costs for logistics facilities offering direct rail access through higher headline rents. This assumption is understood by the majority of logistics operators in the survey. Approximately 80% of respondents requiring a direct rail access today or sometime in the future are prepared to pay more to obtain this service.

However, with mounting pressure on logistics operators to reduce overall costs, occupiers will consider additional costs carefully, particularly if rail transport activities do not represent a significant share in operator’s activities, and thus the readiness to pay higher rents remains limited.

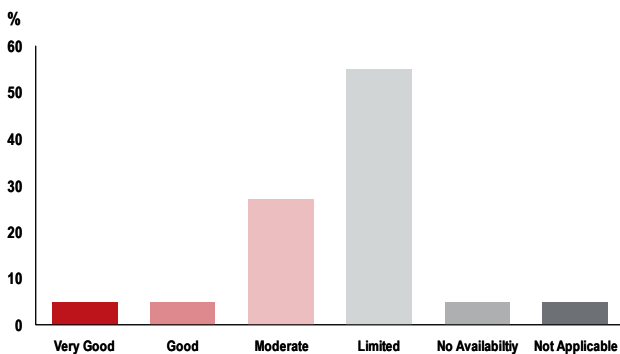
### How Much More are You Willing to Pay For Direct Rail?



Source: Jones Lang LaSalle

On the other hand, the majority of respondents (55%) cite the availability of logistics sites offering direct rail access as limited in their markets and 27% think availability is moderate. This leaves logistics operators with limited alternatives, indicating tenants would appreciate a wider choice.

### Availability of sites with direct rail access



Source: Jones Lang LaSalle

## No immediate modal shift but advantages in developing logistics sites with direct rail access

Given the evidence highlighted in this report, we expect the focus on rail to increase over the medium to long term. Logistics operators will see a number of good reasons to increase the volume of freight transported via rail and many will act on them.

However, while rail freight figures will increase, so will road freight figures. There will be no sudden or substantial shift towards rail. The majority of logistics operators will stay focused on road transport, which, despite the acknowledged constraints, continues to be more efficient and reliable.

## We expect the majority of operators to continue putting emphasis on road transport, despite increasing pressure to improve its efficiency. This will increase the importance of technology and in particular GPS driven solutions

In order to reduce costs – and CO<sub>2</sub> emissions, given the increasing emphasis companies are putting into their ecological responsibility– more attention will be paid to the use of more environmental friendly trucks and to minimising empty miles, getting the best use of trucks through well planned and executed supply chains, rather than substantially increasing rail transport.

The need to improve supply chain efficiency will ultimately increase the importance of technology. The calculation of wagon loads and empty miles reduction as well as the most efficient modal split will become a key element in future supply chains. Modern GPS systems will play a central role in achieving this goal.

## With no modal shift expected to take place over the short to medium term, *why* develop logistics sites offering direct rail access?

Current market evidence, supported by the Jones Lang LaSalle Transport Survey, shows that while only a few logistics operators actively use direct rail access, for many this additional service represents a *nice-to-have* component, given that additional costs will remain contained. With many operators expecting that their transport strategies will see a change over the medium to longer term, being prepared to make the move to rail whenever it might become necessary is appealing to logistics companies.

## Direct rail access could be *favourable* in reducing letting risk

Sites offering rail access should therefore appeal to those occupiers already operating rail transport, and also to those considering it in the future. With more companies utilising rail transport in their supply chain strategies over the longer term, rail access is likely to become an important consideration in reducing the future letting risk associated with logistics sites.

As of today, we do not believe these considerations will substantially reduce the value of sites without direct rail access, given that they currently offer fast access to the main European transport routes. Without a significant number of today's operators shifting substantially to rail transport, demand from occupiers not requiring direct rail access will remain strong. Demand from those occupiers considering accommodation with rail access will be limited if the relative cost of occupation is significantly higher than those that do not offer access - which is often the case. Therefore we do not see any urgency for developers to necessarily offer direct rail access at new logistics sites today, so long as they meet the current needs of a modern integrated logistics supply chain. The added value of direct rail access currently represents only an ideal.



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