Market monitoring Belgian railways

2017

REGULATORY BODY FOR RAILWAY TRANSPORT

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Introduction

Rail freight transport in Belgium was fully liberalised as of the first of January 2007. International passenger transport followed in 2010. The fourth railway package, which focuses on opening up the domestic passenger transport market and the introduction of an allocation procedure for the public service contract, shall (with some restrictions) fully liberalise the rail market as of the first of January 2019.

This liberalisation movement aims to create a unified European rail area. Although the regulatory monopoly on the Belgian market has been abandoned, there has been little dynamism in recent years. The historical operator remains extremely dominant and there are few major "new entrants", indicating technical, economic and/or operational constraints.

The Regulatory body wishes to monitor and investigate market developments via one of its functions: market monitoring. This will facilitate the identification of bottlenecks, threats and/or potential opportunities, in addition to monitoring of evolutions in market competition.

This market monitoring report examines the competitive position of the railway undertakings, also in comparison to other transport modes.

The first section analyses the rail freight transport market. Firstly, it examines the market and the evolutions within the market in which rail transport operates (cf. macroeconomic analysis). Subsequently, developments within the rail market itself are explored. The report examines traffic and segments with their evolutions, and additionally analyses evolutions and trends amongst railway undertakings, including market share (cf. microeconomic analysis).

The passenger rail market is discussed in the second section of this monitoring report. As the national market has not yet been liberalised, the key focus is on international transport.

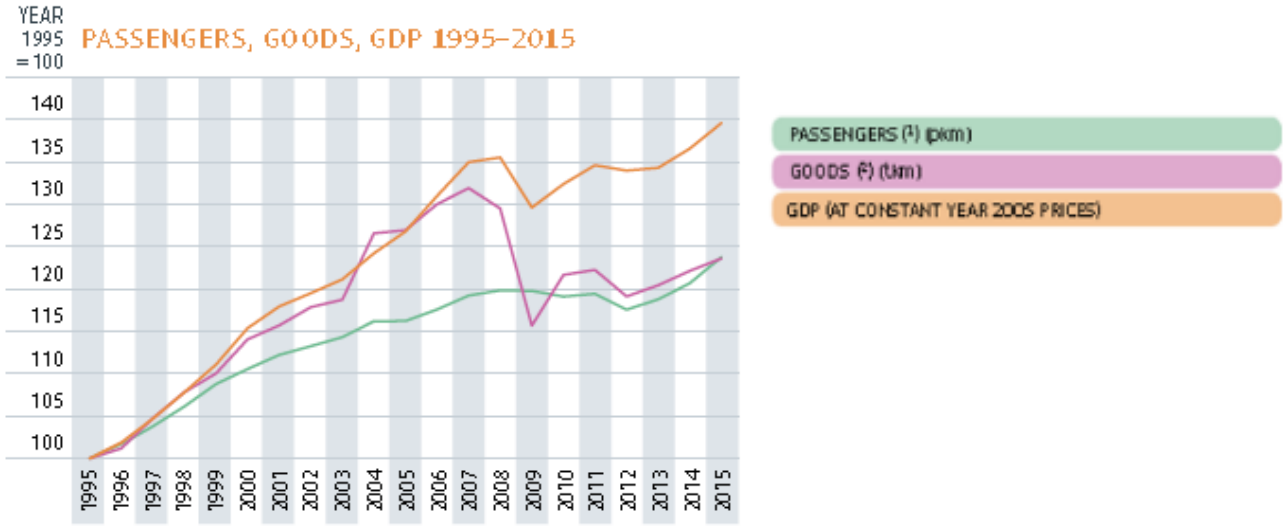
SECTION I: RAIL FREIGHT TRANSPORT

1. Macroeconomic analysis of the transport sector

1.1 Market context

Generally speaking, transport developments are largely determined by economic growth and future trade flows. Economic growth can thereby be presented in terms of gross domestic product (GDP). GDP is the market value of all goods and services produced in one year in the country concerned. **Figure 1** clearly illustrates the relationship between GDP and freight transport. This relationship is not proportional: when economic growth accelerates, traffic increases disproportionally, whilst transport decreases exponentially in the event of an economic downturn.

Figure 1: *Link between GDP and freight transport in Europe*



Source: European Commission (2017), EU transport in figures

In 2017, European GDP (cf. EU-28) amounted to 15,478 billion Euros, an increase of approx. 2.4% compared to 2016. In Belgium, GDP was 423 billion Euros, equivalent to a growth of 1.7%. Belgian economy growth rates have remained below the European average for several years (**Table 1**) and have failed to reach pre-crisis growth[1].

Table 1: *Growth of GDP - in comparison to Europe*

		2013	2014	2015	2016	2017
GDP (million Euros)	Belgium	399,354	404,518	410,290	416,285	423,282
	EU-28	13,596,457	14,064,992	14,819,049	15,115,430	15,478,200
Growth rate	Belgium	0.2	1.3	1.4	1.4	1.7
	EU-28	0.2	1.8	2.3	2.0	2.4

Source: NBB, Eurostat

[1] Prior to the 2008 crisis, GDP increased by 2.5% on average.

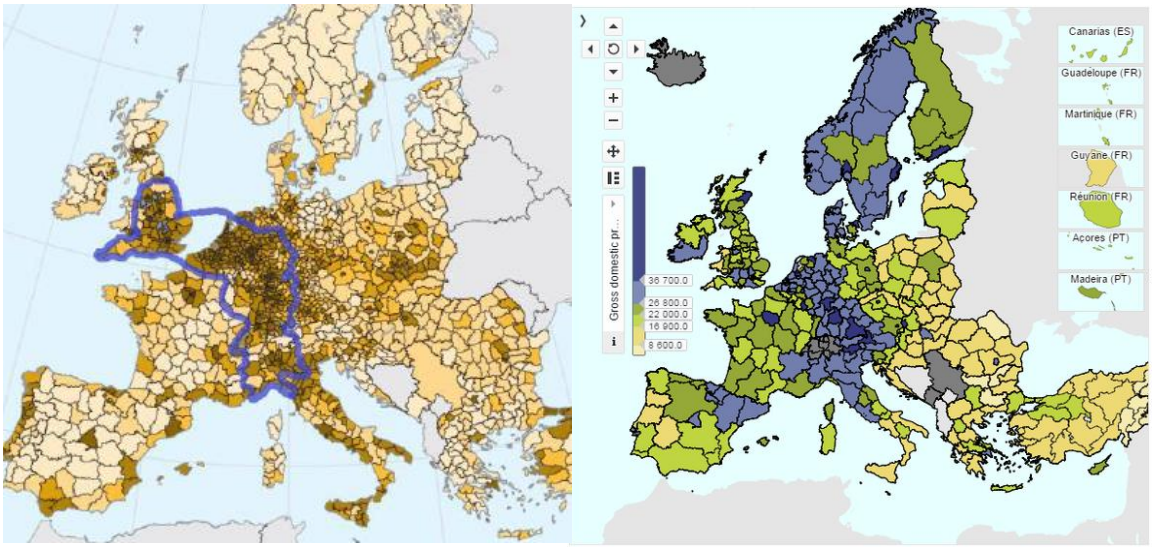
According to the above illustration, growth figures for freight transport in Europe are largely consistent with the growth figures for GDP, typically with a year's delay. The transport and logistics sector in Europe accounts for approximately 10% of total GDP.

However, this is not the case in Belgium. Indeed, freight transport in Belgium has slightly decreased. Prior to the 2008 crisis, freight transport still accounted for almost 65.7 billion tonne-kilometres. This decreased sharply in 2009 (to approximately 57.7 billion tonne-kilometres) as a result of the economic crisis. Despite a small recovery, freight transport has never aligned to GDP growth figures and has (to date) failed to reach pre-crisis levels (2016: approximately 64.4 billion tonne-kilometres). That level decreased still further, to 63 billion tonne-kilometres in 2017.[2]

This reverse decoupling effect can be linked to external factors, such as the introduction of the mileage charge for freight transport or the expansion of the EU and the subsequent migration of industrial capacity to countries in Central and Eastern Europe, which boast lower labour costs. Belgium is a small country - which suffers from high labour costs inter alia - thus (a portion of) its transport can readily be moved to other countries. The consequences of this are clearly visible in the distribution between national and international freight transport. Whilst national freight transport in Belgium has remained relatively stable since the economic crisis, international freight transport has experienced a sharp decrease of approximately 30% (which was offset by growth figures in other EU countries).

Nevertheless, the transport and logistics sector still has an important position in the Belgian economy and has numerous opportunities for growth. Belgium's central location means that the country is a (potential) economic and logistical hub within the European market. Belgium is at the crossroads of major European markets (cf. France, Germany, United Kingdom), and 60% of European purchasing power is concentrated within a 500-kilometre radius of Belgium. The figure below displays the population density in the European Union. As the figure illustrates, those countries typically have the highest GDP per capita as well.

Figure 2: *Population density (left) - GDP per capita in the EU (right)*



[2] Eurostat database

When considering the relationship between GDP and transport developments, it can be concluded that the axis between the United Kingdom and Germany/Poland, as well as between the United Kingdom and Italy/Switzerland, shall also play a key role in the transport sector for the foreseeable future. This also opens up the prospects for Belgium.

Whilst GDP is also increasing in Eastern European countries, this will be at nowhere near the same levels for the foreseeable future. And, unlike Antwerp, Rotterdam or Düsseldorf for example, these countries do not boast well-developed logistics centres.

1.2 Modal split

The fact that Belgium is, and can remain, an economic and logistical hub within Europe is also reflected in its well-developed transport infrastructure and dense transport network (of motorways, railways, waterways, ports and airports).

As is clear from **Table 2** and **Table 3**, road freight transport has indisputably been the most predominant transport mode for years - despite the well-developed rail and waterway infrastructure. However, since road transport experienced a sharp decline in 2017 (approx. -5%), coupled with an increase in rail freight transport (approx. 5.5%) and inland navigation (approx. 7.4%), a small modal shift can be observed in freight transport in Belgium.

Table 2: *Modal split of freight transport by land in Belgium (million tonne-kilometres)*

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Road[3]	46,865	43,951	46,049	45,804	44,698	46,454	46,725	46,546	46,787	44,489
Rail	10,055	6,714	7,421	7,940	7,093	6,680	6,816	7,106	7,271	7,671
Inland shipping	8,746	7,087	9,070	9,251	10,420	10,365	10,451	10,426	10,331	11,098
Total	*65,666*	*57,751*	*62,540*	*62,995*	*62,212*	*63,499*	*63,992*	*64,078*	*64,388*	*63,259*

Source: Eurostat[3], Infrabel

Table 3: *Modal split of freight transport by land in Belgium (%)*

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Road[3]	71.4%	76.1%	73.6%	72.7%	71.8%	73.2%	73.0%	72.6%	72.7%	70.3%
Rail	15.3%	11.6%	11.9%	12.6%	11.4%	10.5%	10.7%	11.1%	11.3%	12.1%
Inland shipping	13.3%	12.3%	14.5%	14.7%	16.7%	16.3%	16.3%	16.3%	16.0%	17.5%

As illustrated above, there is an increasing trend for inland navigation in particular. However, the share of rail is also increasing. It should thereby be noted that only inland shipping exceeded its pre financial

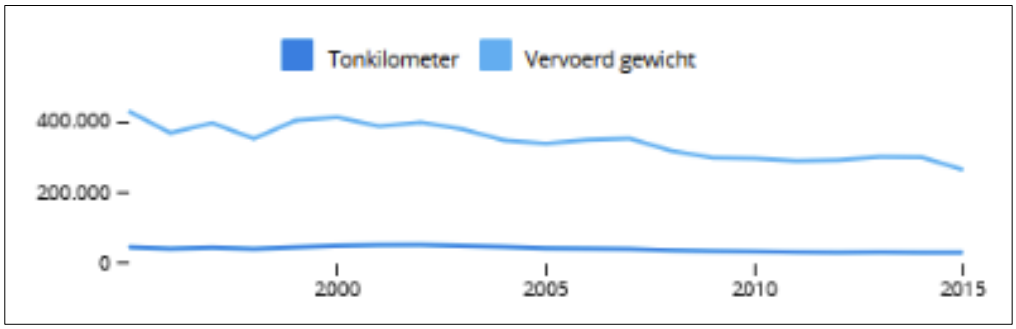
[3] Road transport includes national transport, incl. cabotage (cf. transport in Belgium, conducted by a vehicle from another country), as well as international transport by Belgian and non-Belgian vehicles. It also includes import and export, transit and cross-trade (cf. transport between 2 countries, conducted by a vehicle from another country). It is thereby assumed that the average import, export and cross-trade transport occurred over 100 km and transit over 200 km. Light vans are not included in this share.

crisis level. The rail sector - the worst hit by the crisis in relative terms - remains furthest from its former level.

However, due to the increase in both sectors in recent years, it can be concluded that, in comparison to the past few decades, this represents the first positive signs for an improved distribution of transport capacity amongst the various modes and the solution to some of the issues that the transport sector is currently facing (including congestion and environment).

Naturally, it should be noted that this modal shift is primarily a consequence of the decrease in road freight transport (in tonne-kilometres). Time will tell whether this decrease in road transport will continue and is a direct consequence of congestion issues, use of other vehicle types (e.g. vans), rising diesel prices, the sustainability image and/or the mileage charge etc. What can be observed, is that road transport is experiencing a lighter load, whereby a decrease in the number of tonne-kilometres is not proportional to a decrease in the number of completed kilometres (**Figure 3**).

Figure 3:*Road freight transport 1995-2016: tonne-kilometres vs. transported weight*



Source: Statbel

Nevertheless, a number of positive trends in rail transport can be observed, and - despite several structural disadvantages of the train in comparison to other modes of transport, which are discussed later - these are already contributing to the positive modal shift. Amongst other things, reference is made here to the marginally increased flexibility of rail transport, increasingly smaller price differences, and the new businesses and transports that more regularly opt for rail transport (or inland shipping), partly due to an increased environmental awareness. These themes are also further explored.

1.3 Rail sector potential

Previous sections clearly indicate that significant potential for rail sector growth remains.

As **Figure 1** illustrates, the transport sector is generally aligned to economic growth. However, due to powerful shifts within the various European countries, this was not the case in Belgium in recent years. Amongst other things, this can be attributed to high salary costs, the mileage charge that was recently introduced for lorries in Belgium and rising diesel prices. Nevertheless, Belgium's central location does present opportunities for achieving transport sector growth, in line with growth in GDP.

Since major growth margins in the Belgian transport sector remain (cf. in line with the growth of national and European GDP), this also presents opportunities for the railway sector - even if road transport were to recover in the coming years.

A small modal shift occurred in 2017, largely due to the sharp decrease in freight transport, as well as the growth in rail transport and inland shipping. Thus rail is becoming increasingly important, also as a component in the logistics link. This is also reflected in the railway undertakings' customer base, which - in addition to the logistic rail companies and the industry itself - often comprises logistics providers.

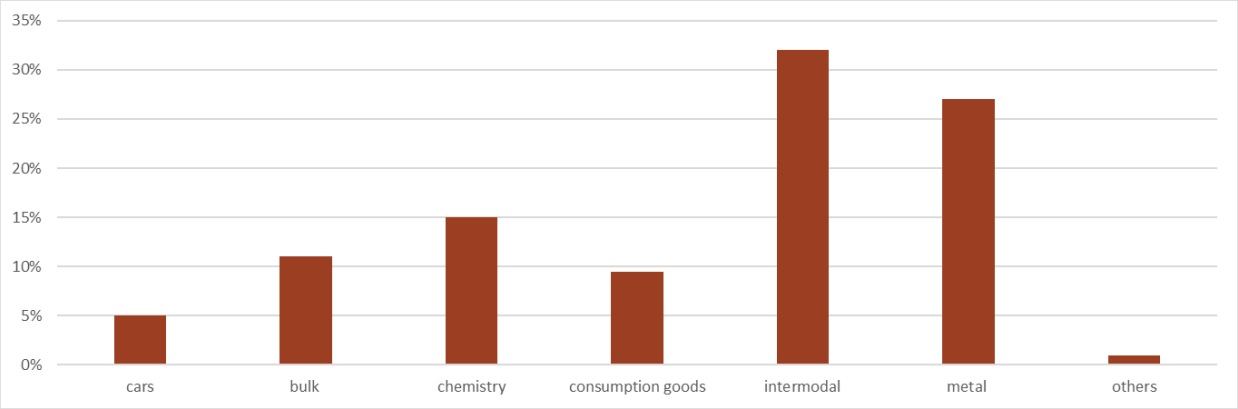
2. Market developments – transport types

As indicated in the macroeconomic analysis, the rail sector experienced a sharp increase in 2017. Indeed, more than 60 million tons of freight were transported, equivalent to an increase of approximately 5.5% in number of tonne-kilometres completed. The section below examines whether this increase can be attributed to evolutions in certain market segments or traffic, which may also provide an idea of potential future prospects.

2.1 Segment and traffic evolution

Figure 4 provides an overview of the current traffic composition for rail transport in 2017. This suggests that it is predominantly containers (cf. intermodal trains), together with metal (via block trains) and chemical products, that are transported via rail. Bulk, consumer goods and cars additionally form a considerable share of the market. It can also be concluded that little new traffic has been added and that the largest market segments remain the largest growth markets. Particularly with regard to the maritime sub-segment - where one train replaces approximately 60 to 80 lorries - growth can be attributed to a more balanced 'level playing field'.

Figure 4: *Rail transport traffic composition*



Source: own compilation based on Infrabel and railway undertakings' figures.

The key train partnerships for 2017[4] – which can typically be found in the three largest markets defined above – were as follows:

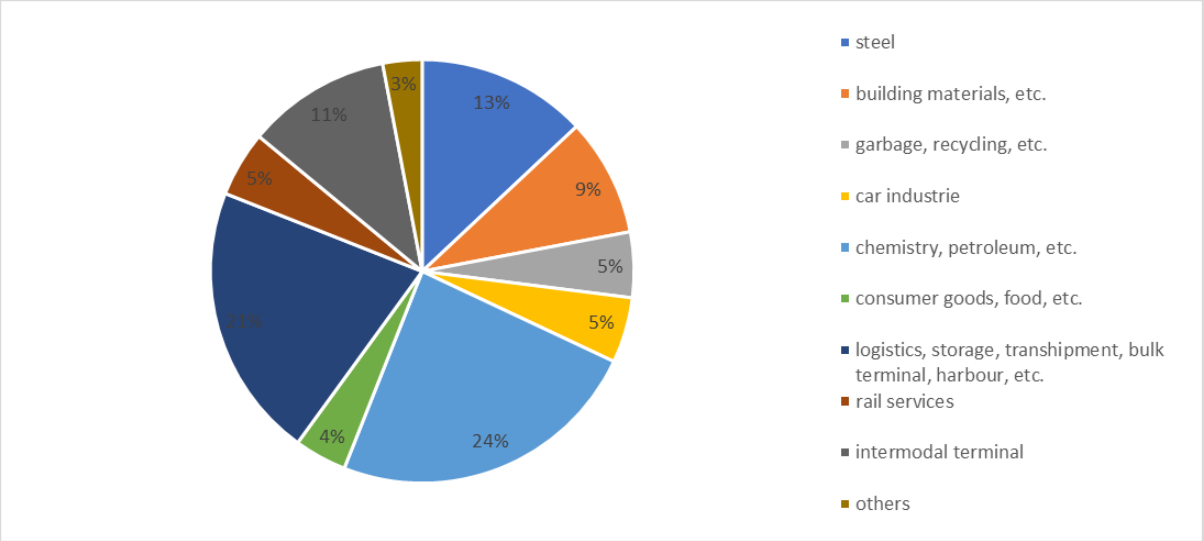
- Ghent – La Louvière/Clabecq (steel products): 2,643 journeys
- Antwerp/Genk – Gremberg, Keulen (mixed freight trains): 2,252 journeys
- Chatelet – Genk (steel products): 1,336 journeys
- Ghent/Dunkirk – Liège (steel products): 1,200 journeys
- Antwerp – Gallarate, Italy (intermodal trains): 1,140 journeys
- Antwerp – Ludwigshafen (i.e. chemical products): 1,066 journeys
- Antwerp – Balen/Budel (zinc ore): 915 journeys
- Ghent – Terneuzen (chemical products): 907 journeys
- Antwerp – Athus (intermodal transport): 854 journeys

[4] Based on the number of requested train paths (cf. number of loaded journeys) in Belgium.

As highlighted in the aforementioned train partnerships, the Antwerp region is a key zone in terms of rail freight transport. More than half of the trains run to or from Antwerp. And the port alone accounts for approximately 30% of all traffic. Train volumes in the port of Antwerp largely comprise pre and post transport, whilst distributed, combined and block transports are relatively evenly distributed.

To provide an idea of how rail connections are linked to companies in certain segments, Technum[5] has created a database of rail connection numbers per industrial sector - more than half of which are located in the Antwerp region. As illustrated in **Figure 5**, the majority of rail connections are linked to companies active in the chemical sector (24%), logistics (21%), steel industry (13%), waste sector (11%) and building materials sector (9%). It should be noted that the database contains all customers who have a rail connection contract with Infrabel, regardless of traffic or the company's current situation.

Figure 5: *Rail connection by industrial sector*



Source: Technum, 2015

2.2 Characteristics per production type

The fact that certain transports or market segments are primarily served by rail is a direct consequence of certain characteristics of the rail sector itself, including the cost or accessibility between the railway and the origin/destination of the goods.

Based on these characteristics, rail is often subdivided by production types into intermodal trains, conventional block trains and distributed transport.

Intermodal trains include maritime and continental containers and accompanied transport. As rail transport is characterised by a flat cost structure with high fixed costs, yet (relatively) low additional variable costs per tonne-kilometre, the intermodal segment is primarily competitive over long distances (from 500 to 700 km). Furthermore, rail has been adapted to the rapid supply and

[5] Technum, 2015. Research into the competitiveness of rail freight transport in Belgium.

transportation of large volumes for the maritime sub-segment. It is a competitive market with numerous traction providers.

The same distance restrictions - which make transport particularly competitive over long distances - additionally apply to distributed transport (cf. wagon loads or unit cargo that regularly run between shunting yards for trains carrying steel, chemicals, cars, consumer goods, etc.). Rail transport over medium distances (150 - 700 km), with moderate volumes, is less competitive due to high fixed costs and last-mile costs.

Rail can be competitive for conventional block trains, which ride between two rail connections and carry significant volumes (e.g. dry or liquid bulk, steel, cars) on a regular basis, even over extremely short distances. Rail is an efficient transport mode for market segments such as steel or liquid bulk (e.g. chemicals), precisely due to the product's characteristics. Moreover, rail is also aligned to industrial processes.

2.3 Future prospects of rail market segments

The past tends to suggest that only certain transports are (or can be) cost-effectively transported via rail. And this evolution has only been confirmed over the years.

The rail sector is thus confronted with high investment costs - certainly in comparison to road transport, for example - and relatively low basic train path costs, which means that rail transport can often only be profitable over long distances.

Moreover, the last-mile cost is often fairly high, partly due to high transhipment costs, the costs for pre and post container trucking, and shunting and services for wagon loads. This typically means that transports are only profitable when rail accessibility is good. Thus the rail sector is well suited to voluminous transport between factories and sites (industrial processes), in which trains operate on fixed partnerships with fixed service provisions.

If these two conditions, in particular, are met (cf. distance and accessibility) then rail is of course also the ideal transport mode for specific products, such as heavy loads or long products.

It is for precisely this reason that intermodal trains with containers and block trains - which, due to their good connections and considerable volumes, can also be competitive over shorter distances - will continue to grow in the future.

If no structural changes are made within the transport sector and transport policy in general or the rail sector in particular, this trend will persist and growth figures will only be feasible within these specific market segments.

3. Market developments - rail transport competition

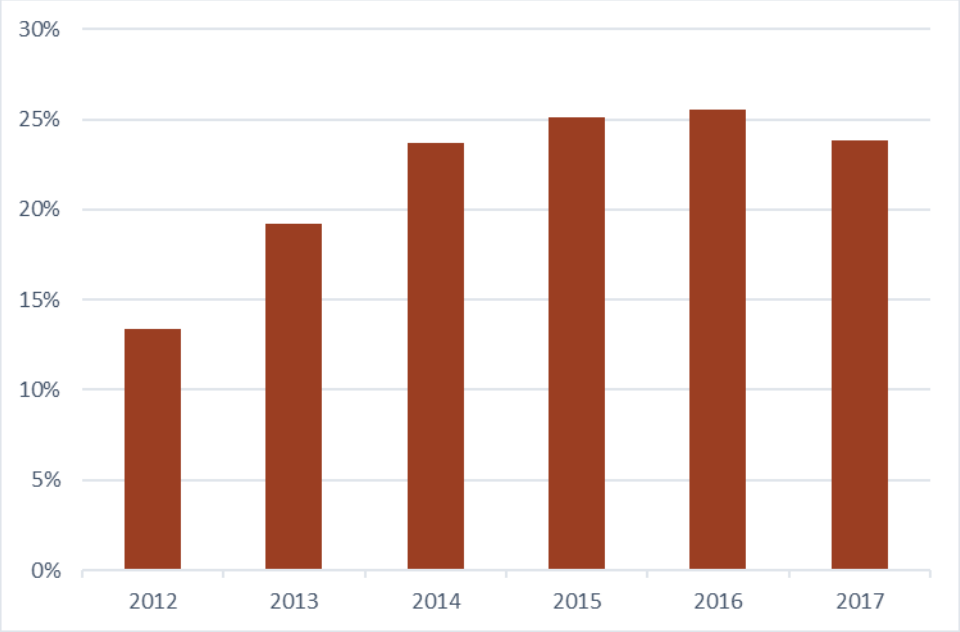
As already stated, rail freight transport experienced strong growth in 2017. This chapter examines how this growth is subdivided between the various railway undertakings and explores the impact of sector competition.

In 2017, 12 railway undertakings were operational (Lineas, Captrain, CFL Cargo, Crossrail Benelux, DB Schenker, EuroCargo Rail, Europorte, Railtraxx, Rotterdam Rail Feeding, SNCF Fret, RTB Cargo and HSL Polska). This represents a decrease in comparison to 2013 when 15 undertakings were still operational. Internal reorganisations and the operational and strategic decisions taken by multinational groups are at the heart of this decrease in the number of active operators in Belgium.

3.1 Freight transport market share

The market share of freight transport by the non-historical operator has increased since the liberalisation in 2007, from 5% to 24% (in train kilometres) in 2017. This represents a slight decrease compared to 2016 (approx. 25.5%). In terms of tonne-kilometres, this share is currently 23%. Freight transport has therefore experienced a mildly positive trend with regards to competition in the market in recent years. Generally, however, it can be stated that – whilst relatively numerous railway undertakings are active in the Belgian market – competition (e.g. market share) remains rather limited. In Europe, the average market share for new entrants is typically much higher (approximately 40%).

Figure 6: *'New entrants' market share of freight transport in Belgium (train kilometres)*

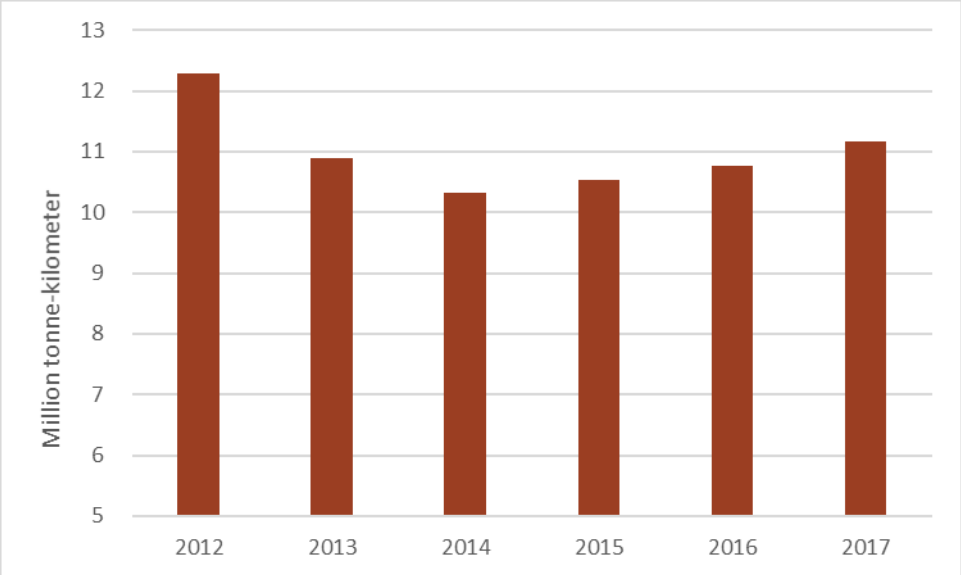


3.1.1 Historical freight operator

As indicated above, the market share of the historical freight operator (which was privatised in 2015) increased in 2017 for the first time since liberalisation. However, this was not due to a decline in 'new entrants' transport, but rather a consequence of the historical freight operator's own strong growth.

For some years now, it has enjoyed slight growth in completed tonne-kilometres (in Belgium) and, in 2017, this accounted for an increase of almost 4%. However, it has not yet reached pre financial crisis levels. (**Figure 7**)

Figure 7: *Evolution of historical operator's completed tonne-kilometres*



Liberalisation has led to additional competition and prompted rail operators to renew their business models and strategies. The historical freight operator has, amongst others, optimised its operations. In addition to expanding its home market, it is also tapping into international growth markets. Connections with other European economic hubs are thus being established or reinforced. They have greatly increased their load factor as a consequence. This has led to an increase in both productivity and profitability and is further discussed in chapter 3.2 *"*Trends resulting from increasing competition*"***.***

3.1.2 'New entrants'

As previously stated, the slight decrease in the "new entrant" market share should not be considered an entirely negative development. Broadly speaking, all railway undertakings have experienced a growth in the number of tonne-kilometres. In addition to the historical freight operator increase of nearly 4%, "new entrants" averaged a tonne-kilometre increase of more than 10% in 2017.

And, markets that were previously served exclusively by the historical operator are today being explored. For example, other railway undertakings now offer distributed transport and last-mile projects, and are also profitable in this.

Thus, competition between the various (existing) railway undertakings has experienced a favourable trend in recent years. The fact that multiple railway undertakings do not enter the market every year can be attributed to a number of major barriers including technological constraints and high investment costs: rail system entry costs (connections, traction, personnel), mandatory ETCS installation by 2025 (with a cost of approximately 340,000 Euros per locomotive), etc. These high (investment) costs are at the heart of the inertia when it comes to the evolution of competition in the rail market and explain why the difference between the historical operator and so-called new entrants

remains so great. Whilst the historical operator had existing equipment at its disposal, as well as certain market segments via public contracts and could further build on these, 'new entrants' were, in contrast, forced to fully finance these investments and open up new markets themselves.

It should also be borne in mind that approximately one fifth of the "new entrant" market share can be linked to a foreign historical operator. Moreover, only three non-historical operators boast a market share in excess of 3%. The largest non-historical freight operator enjoys a market share of approximately 9%, the second largest has a market share of 7%, followed by the third largest, with a market share of 4%. The other "new entrants" have a market share of between 0 and 3%.

3.2 Trends resulting from increasing competition

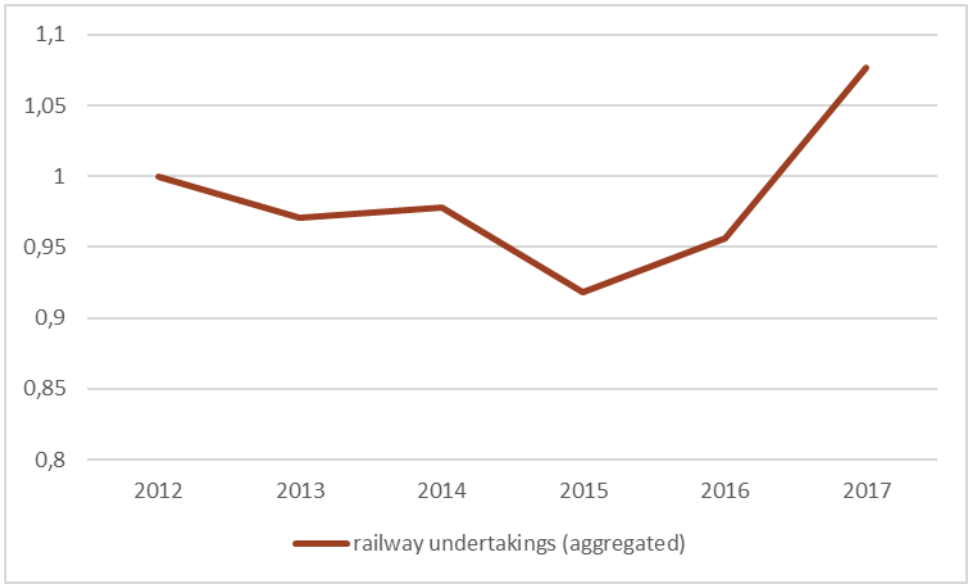
As previously mentioned, several railway undertakings are optimising their operations. This is essential to remaining profitable, and is a direct consequence of the fierce competition between the railway undertakings and other transport modes. In addition to updated business models, this concerns the load factor and the (increasing) importance of international transport.

3.2.1 Rail load factor

It is self-evident that load factor optimisation presents numerous advantages and makes rail transport more attractive. After all, a higher load factor leads to improved cost distribution per transported unit and, in other words, lower costs.

As indicated above, the historical operator has increased its load factor considerably in the past year. This is a positive trend that can also be observed in the majority of other railway undertakings in 2017. In **Figure 8** transported tonnages are compared with the total number of train kilometres completed (with 2012 as the baseline). This provides an indication of the load factor and its evolution.

Figure 8: *Load factor evolution (tonnage per train kilometre) - compared to 2012 levels*



For the first time, the load factor (cf. tonnes per train kilometre) in 2017 was higher than in 2012. This increase in load factor suggests that the sector is fully committed to efficiency.

Yet, despite the increase, considerable room for improvement remains and an extremely large number of trains are often completely empty. Whilst 125,908 loaded trains (cf. effective train paths) were in operation in 2017, 57,370 were empty. This implies that more than 30% of trains was empty. Of course, the latter case does not always involve long(er) train paths. Nevertheless, this share is extremely high. It must also be stated that many of the loaded trains were not optimally filled, and that empty containers are included.

Analogous to the higher load factor, it would obviously be more profitable in this respect to allow longer and heavier trains to run.

In both respects, the bundling of freight flows – where feasible – offers solutions that would potentially benefit the competitiveness of the sector.

3.2.2 National interest versus international transport

As previously stated, Belgium is a key transit country. A significant portion of freight transport travels to or from the country (cf. import and export). Whilst the international transport share for freight transport by land (in particular for road transport) has generally decreased in recent years, this is not the case for rail transport specifically. Here, the international transport share remains important and has even increased in recent years. As rail is primarily competitive over long distances - with the exception of conventional block trains - this trend is not surprising.

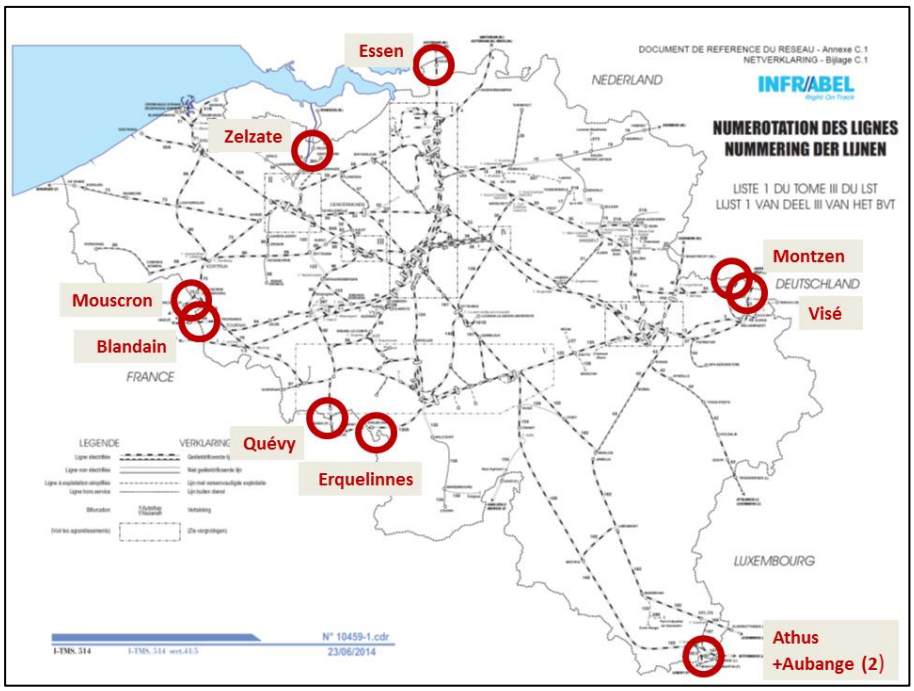
Approximately half of all loaded journeys (cf. requested and operated train paths) in 2017 comprised journeys to or from abroad. If this number were to be converted into train kilometres, the share would increase amply. It must also be stated that – as mentioned above – an extremely large proportion of trains run to or from the ports – or other logistics centres. The share of imported or exported freight is therefore considerably higher.

It can also be determined that the share of freight transported by Belgian railway undertakings on foreign train paths increased sharply in 2017 (approximately. 10% more).

In order to facilitate this, Belgium boasts 18 border points between the Belgian network and those of neighbouring countries, of which 11 play a role in freight transport. (**Figure 9**).

The border point of Montzen represents the largest share of trains (approximately 40%), the majority of which are intermodal. Both block trains and distributed transport and intermodal trains are in operation at the second most utilised border points of Athus and Aubange (approximately 20%). Mixed traffic is also encountered at the border points of Mouscron (approximately 13%) and Essen (approximately 9%), whilst block trains and, to a lesser extent, distributed transport are primarily encountered at the other border points.

Figure 9: *Belgian railway network border points*



Since a (relatively) large share of rail freight throughout Europe is internationally orientated, Europe additionally intends - via Directive (EU) 9013/2010 inter alia - to facilitate the organisation of this type of transport. Huge improvements have been made (and should be further optimised in future) in terms of connectivity between major European logistics centres and industrial hubs via specific corridors. A one-stop-shop makes the organisation and allocation of these train paths significantly simpler, which actively encourages international traffic (as is also reflected in the growth of the share of international transport in Belgium).

4. Rail freight transport SWOT analysis summary

The table below provides an overview of the rail sector's strengths and weaknesses, in addition to the opportunities and threats, as described in the above report and based on earlier qualitative research.

Table 4: *Rail freight transport SWOT analysis*

Strengths	**Weaknesses**
- The rail sector is well suited to voluminous transport between factories and sites (industrial processes) - trains operate on fixed partnerships with fixed service provisions - Rail transport is profitable over long distances - Basic train path costs are not high - Ideal transport mode for specific products, such as heavy loads or long products - Positive sustainability image - Rail is safer than road (e.g. for chemical products in tank containers)	- Rail system entry costs are high (connections, traction, mandatory ETCS installation, high personnel costs etc.) - Last-mile costs are high (including transhipment costs, pre and post trucking for containers, and shunting and services for wagon loads). - Transports over shorter distances are not very profitable - Little flexibility with regards to alternative routes, train path requests, problem solving - Rail is insufficiently integrated into global logistics networks - Restricted infrastructure (capacity), owing to mixed freight and passenger transport - Operational issues, including shortage of train drivers - No/limited 'level playing field' between various transport modes - No targeted support for stimulating modal shift (cf. lack of financial support or long-term vision for infrastructure)
Opportunities	**Threats**
- Freight sector in Belgium has huge potential (cf. GDP) - Responding to the impact of the mileage charge - Increasing utilisation rate and bundling volumes, via improved cooperation between railway undertakings etc. - Further developing new business models to further reduce costs, improve quality (and thus reliability) and increase flexibility, etc. - Standardisation of loading units, to ensure that shift between modes is always possible - Developing 'freight villages'/rail ports next to the (continental) terminals	- Without a global approach, rail transport will be reduced to industrial block trains and long-haul container trains - Business community delocalisation (no rail connections present) - Shortage of train drivers and loss of rail sector skills (e.g. lack of training) - Excessively stringent regulations (particularly for newcomers and shorter distances) - a loosening of rules (without sacrificing safety) would be desirable on industrial lines for example - Technological road transport evolutions (including self-driving and/or electric lorries)

5. Rail freight transport conclusion

The transport sector is generally aligned to growth in GDP. However, this has not been the case for Belgium in recent years. Freight transport in Belgium has experienced a decrease of approximately 11.5% compared to 2010, with a particularly sharp decline in 2017 (via road transport). As Belgium is a key transit country, the vast majority of freight transport is internationally oriented. Whilst national freight transport has remained fairly stable, international freight transport in Belgium has decreased sharply in recent years (approximately 30% against 2000). This is partly due to the high labour costs in Belgium and the rise of 'cheaper' EU countries.

Despite the decrease in freight transport by land, rail transport in Belgium has experienced a slight growth in recent years. Indeed, rail freight transport grew by approx. 5.5% in 2017. Possible explanations for this include the mileage charge for lorries, a growing awareness around increased sustainability and, of course, improvements within the sector. Despite the fact that pre financial economic crisis volumes are far from being accomplished, favourable trends can be observed.

Thanks to this growth in rail transport - and partly due to the decrease in road transport - a positive sector trend can also be observed in the modal shift.

The growth figures are predominantly reflected in specific freight transport market segments. Rail appears to remain primarily competitive over long distances for example, particularly for intermodal transport (containers). Partly because of these long distances, it can also be observed that rail transport is of a primarily international nature and that (future) growth is also focused on this. Furthermore, rail is also competitive and a growth market for conventional block trains, which ride between two rail connections with significant volumes (with steel products and chemical products being the most important).

Research reveals various aspects that require (further) work if rail wishes to enjoy further growth. It is important that the infrastructure is able to track the demand for freight (cf. capacity) for example, and that the infrastructure operator’s management – and communication – is optimised, with maximum flexibility. A level playing field, in which all transport modes must pay the same for external costs is also key. Yet, despite the introduction of the mileage charge, this is still not the case. And (EU) rail-specific legislation must be optimised. Firstly to facilitate new entrants and secondly to ensure more uniform technical regulations in Europe, which allows for easier cross-border rail transport.

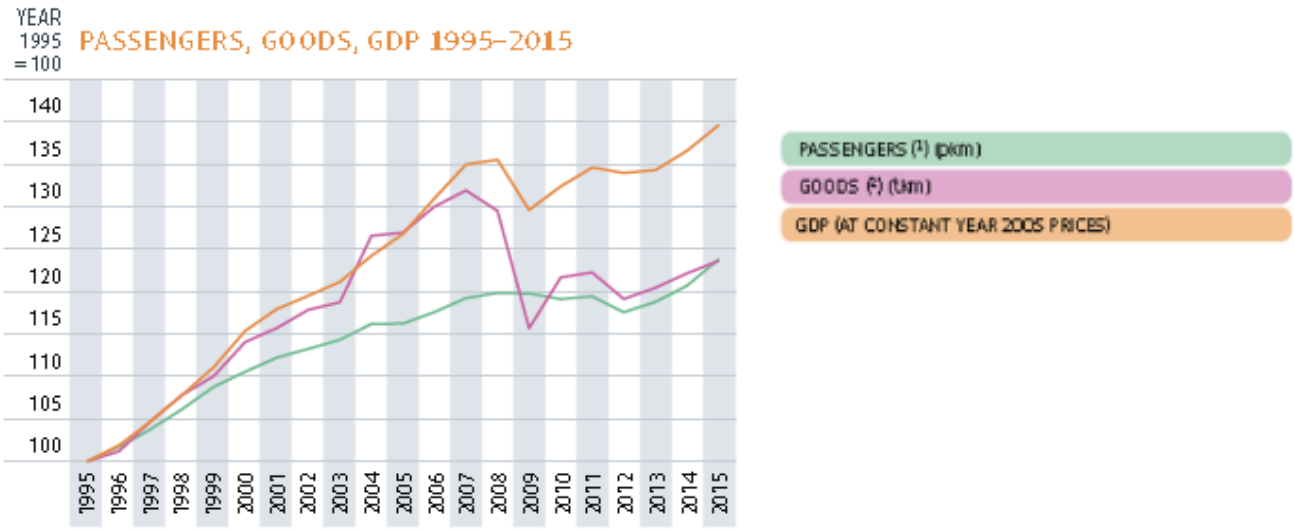
SECTION II: RAIL PASSENGER TRANSPORT

1. Macroeconomic analysis of passenger transport

1.1 Market context

The freight transport analysis revealed that economic growth (cf. GDP) determines transport developments. The same applies to passenger transport - albeit to a lesser extent (**Figure 10**). Passenger transport does not react as swiftly or severely as freight transport. An economic downturn leads to a more muted decrease in passenger volumes, whilst an economic revival does not instantly result in an exponential increase in passenger transport. Other factors, such as population growth, are decisive here.

Figure 10: *Link between GDP and passenger transport in Europe*



Source: European Commission (2017), EU transport in figures

According to the Federal Planning Bureau (2015), demand for passenger transport will increase by 11% by 2030. This is largely related to population and prosperity increases (cf. expected GDP growth in Belgium).

1.2 Modal split

Since passenger transport is expected to increase in the future, it is important (in the context of congestion and pollution issues, etc.) that the distribution between the various transport modes is optimal. Of course, this also depends on the anticipated growth in freight transport, which utilises the same transport infrastructure.

In addition, passengers continue to opt for transport via car in more than 80% of cases. The same applies to the rest of Europe. The share of passenger transport by rail (compared to transport by land) is approximately 7.7%. This is relatively similar to the rest of Europe. The table below shows the share of the various transport modes by land in Belgium in comparison with the European average (EU-28).

Table 5: *Modal split of passenger transport by land (passenger kilometres in %)*

	Car	Bus/tram/metro	Train
Belgium	81.8%	10.5%	7.7%
EU-28	82.9%	9.4%	7.7%

Source: Eurostat, 2016 figures

The share of the various transport modes has remained more or less unchanged in recent years. Despite an intensive focus on public transport, the road transport share has only decreased by approximately 2% since 1995. Rail has made a strong advance in recent decades, particularly in comparison to bus/tram/metro. Rail accounted for only 5.6% in 1995. In 2005 this was 6.7% and, in 2016, 7.7%. The rail share has also remained relatively constant over the last 5 years.

However, a further split has been recommended and is being worked on by the government. Reduced accessibility by car is already being encouraged in cities for example and, in some cities, 'low emission zones' are now a reality, preventing certain cars from entering the city altogether.

1.3 Rail sector potential

1.3.1 National passenger transport

As stated in previous sections, passenger transport is expected to continue to slightly increase in the coming years. Despite the congestion and environmental issues that primarily effect road travel, the share of passengers travelling via rail has remained relatively stable for a number of years. As far as national passenger transport is concerned, the number of train kilometres has remained at around 78 million for several years, with a small 2% increase to approximately 79 million train kilometres in 2017.

The number of travellers will, in all likelihood, increase according to this same pattern in the future. Additional government efforts will only have a limited impact on passenger volumes.

1.3.1 International passenger transport

International passenger transport has accounted for approximately 7% of total passenger transport in recent years. Since growth in traffic is strongly influenced by the opening of new services, the evolution of international passenger transport is difficult to research. It can, nevertheless, be stated that growth is following roughly the same trend as total passenger transport.

In addition, rail transport is predominantly endeavouring to compete with air travel.

2. Market developments

As in previous years, the railway infrastructure is principally utilised by passenger trains. Passenger transport accounted for over 86% of train kilometre numbers. This percentage also exceeds 80% on average in the rest of Europe.

As in previous years, three railway undertakings were active in passenger transport (NMBS/SNCB, Eurostar and THI Factory). However, it should be noted that multiple products were involved. ICE International[6] trains also operated between Belgium and Germany for example. However, this takes place in collaboration with NMBS/SNCB (which is responsible for the administration of the Belgian component), which means that it is not included as an active rail undertaking in Belgium.

2.1 Passenger transport volumes

NMBS/SNCB transported approximately 230 million passengers in 2017, an increase of more than 3% in comparison to 2016, and the largest increase in domestic passenger volumes in 10 years. This increase is also reflected in the number of train kilometres completed, which increased by 2%. This passenger growth (which is accompanied by an extremely small modal shift) was further strengthened by the new transport plan. In December 2017, NMBS/SNCB increased rail services by approximately 5%.

There was also an increase in international passenger transport volumes, which translated into an increase in the number of completed train kilometres. Following a number of relatively stable years, international passenger transport experienced an increase of approximately 8% in 2017.

2.2 Passenger transport competition

As the national passenger market has not yet been liberalised, the section below exclusively examines the competitive situation for international passenger transport.

2.2.1 International passenger transport market share

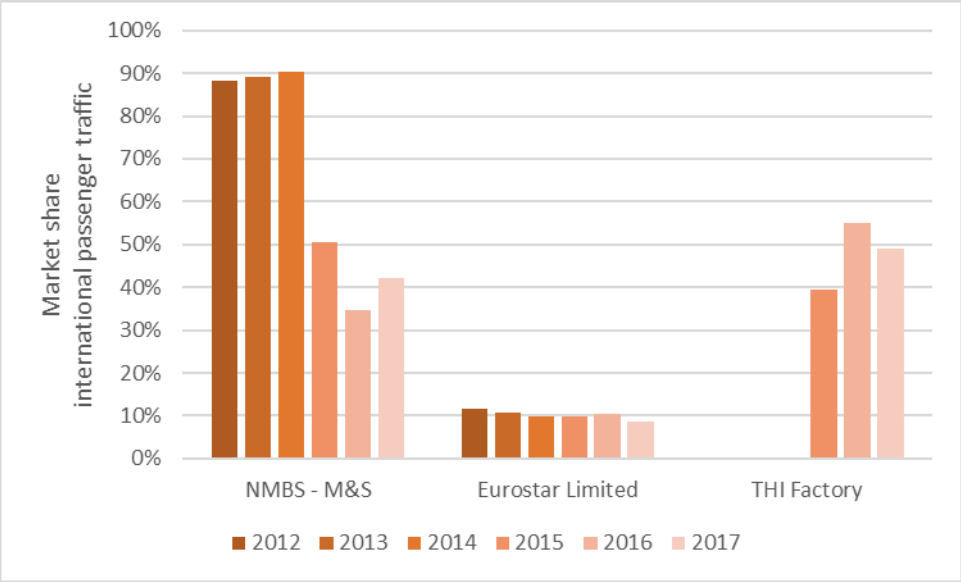
When it comes to international passenger transport – which was liberalised on the first of January 2010 – there is very little market dynamism. The market share of the only new operator which is not linked to a historical operator (cf. Eurostar) has remained approximately 10% for several years, with a slight decrease in 2017. (**Figure 11**)

It should be noted that Thalys (cf. railway undertaking THI Factory) is fully controlled by historical operators NMBS/SNCB and SNCF.

There is therefore very little competition on the market. Moreover, due to the various agreements between railway undertakings (including the example of ICE), the level of transparency in terms of competition on the market is difficult to assess accurately.

[6] A consortium of the German railways (DB Fernverkehr) and the Dutch Railways (NS International).

Figure 11: *Market share of international passenger transport in Belgium (in train kilometres)*



In addition to the aforementioned high investment costs and technological constraints that characterise rail transport, stringent interoperability requirements and legal provisions pertaining to cabotage ensure that the barrier for new entrants is high. As a consequence, the historical operator rarely faces competition.

The market share of non-historical international rail passenger transport operators is also small in comparison to the rest of Europe. The average market share in Europe is approximately 31%.

2.2.2 Trends resulting from increasing competition

As already stated, there is currently limited dynamism in international passenger transport. The little competition that there is must therefore come from existing 'new entrant', Eurostar. Eurostar is currently expanding their offering. However, high investment costs and administrative constraints make this difficult. Only time will tell whether they can increase their market share.

Furthermore, the fourth railway package is intended to negate the impediment of the primary international objective. The stringent legal provisions relating to cabotage will expire. It remains to be seen what effect this will have on transport and/or competition.

3. International passenger transport SWOT analysis summary

The table below provides an overview of the international passenger transport sector's strengths and weaknesses, in addition to the opportunities and threats, as partly cited in the above report.

Table 6: *international rail passenger transport SWOT analysis*

Strengths	**Weaknesses**
- Fast, frequent mass transport between (large) cities - Positive sustainability image - Rail is a safe mode of transport - New, reliable equipment	- Rail system entry costs are high (connections, traction, mandatory ETCS installation, high personnel costs etc.) - Interoperability issues (both drivers and equipment) - Administrative constraints (including new cross-border train paths) - Expensive transport modes (cf. growing low-cost aviation market, in London for example)
Opportunities	**Threats**
- Metropolitan markets (transport, stations) / major EU cities <300 km away - City congestion - Climate policy - Lifestyle changes (e.g. car sharing instead of ownership) - Increasing economic prospects by eliminating limitations of primary international objective	- No political priority/limited government resources - Falling fuel prices (cf. plane, car) - Negative image due to Fyra, terrorism - Road transport technological evolutions (including self-driving and/or electric cars)

4. Rail passenger transport conclusion

Passenger transport accounts for more than 86% of train kilometre numbers. Nevertheless, the share of rail in transport modes is relatively limited, to approximately 7.7%. A rapid increase in this share is not anticipated, and rail passenger transport is expected to follow the evolution of general passenger transport (cf. increase of approximately 10% by 2030).

Within this share, national passenger transport accounts for approximately 93% of train kilometre numbers. This market share has not yet been liberalised, thus sector competition is currently non-existent. In contrast, international passenger transport was liberalised in 2010. However, due to high investment costs, technological constraints, stringent interoperability requirements and legal provisions relating to cabotage, it is not easy to enter this market or add new market segments (cf. new international train paths) to the service offering. The new entrant's market share has therefore remained at approximately 10% for several years now.

Nevertheless, international passenger transport has increased by 8% in the past year and is the ideal solution for tackling environmental issues and congestion in large cities.