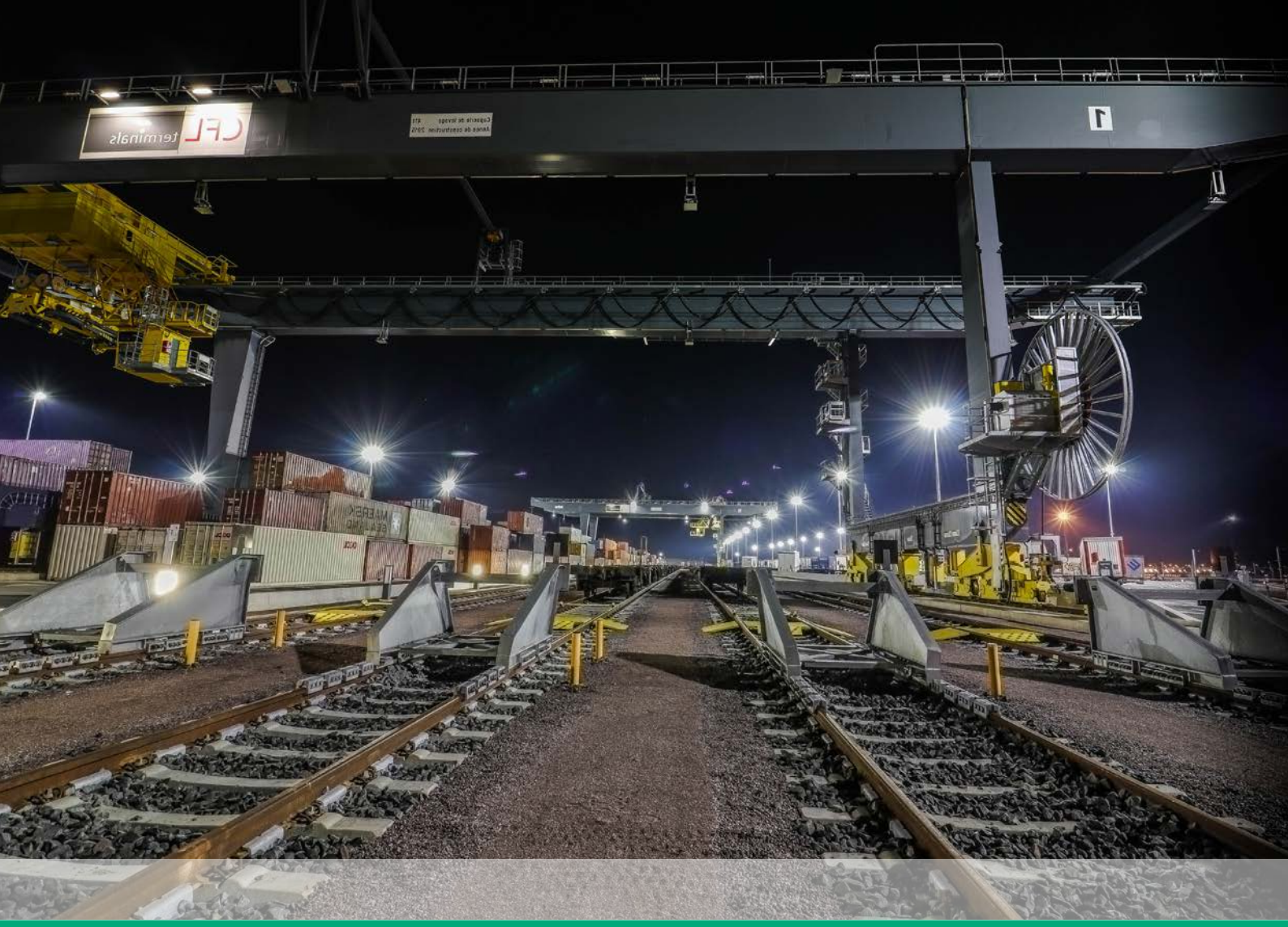

UIC FREIGHT DEPARTMENT

2020 Report on Combined Transport in Europe

November 2020

UIRR
INTERNATIONAL UNION FOR ROAD-RAIL COMBINED TRANSPORT

INTERNATIONAL UNION OF RAILWAYS

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Content

Foreword by UIC/ UIRR

Climate change, public concerns for air pollution caused by diesel engines, unabated road congestion and a truck driver shortage have all directed the attention of European policymakers to Combined Transport.

The European Parliament Resolution on Climate and Environment Emergency of 28 November 2019 has led to the European Green Deal, which inspired the European Climate Law. The legislative proposal was submitted to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions for further consideration under the ordinary legislative procedure. The European Climate Law is to spell out the pace and extent of decarbonization: 55% until 2030 and climate-neutrality by 2050.

Decarbonization and effectively countering the other challenges of our times (pandemic, social inclusion, etc.) cannot be achieved without a major impact on the way transportation is done today. Within the transport sector, when it comes to the longer distance freight segment, this means Combined Transport.

Combined Transport offers the most efficient means of transhipment of cargo between the different modes, and thereby the optimization of the benefits inherent to each mode: the flexibility of - preferably electrically powered - trucks over short distances with the energy efficiency and low carbon footprint of electric trains and waterborne vessels over the long distance segments.

The Smart and Sustainable Mobility Strategy, which is to succeed the EU Transport Whitepaper, is expected to be published in early December 2020. This will lay out the series of measures deemed necessary by the European Commission to facilitate the modal restructuring within the transport sector. Several pieces of European legislation will need to be amended in the foreseeable future to bring about the change, which include the Eurovignette (road tolling) and the Energy Taxation directives, the TEN-T Guidelines and the Rail Freight Corridor Regulation, as well as the Combined Transport Directive.

The most significant challenge that the railway sector will need to find a solution for is how the necessary tripling of rail freight tonne-kilometres (tkm) can be achieved within the coming decades.

The eighth biennial Report on Combined Transport published by UIC, steered by the UIC Combined Transport Group (CTG), which has been produced in collaboration with the International Union for Road-Rail Combined Transport UIRR, shows that the most dynamically growing production system of rail freight is Combined Transport.

The continuous development of Combined Transport over the last 10 years (+55% of tkm between 2009 and 2019) indicates the way forward that should be pursued through proactive actions at all levels, both legislative and sectorial.

The objective of the European railway companies to achieve a 30% modal shift by 2030, i.e. a doubling of current volumes, has been declared in 2019 (e.g. the Rail Freight Forward initiative). 2021 has been designated by the Commission as the “Year of the Rail”, which will be a crucial milestone to achieving the aim. UIC and UIRR, as partners representing the sector, are confident that the current edition of the Combined Transport Report will deliver insights on the achievements and the challenges, and that it will infuse new energy for the ambitious changes that are needed.

European rail/road Combined Transport market - facts and figures

Methodology and approach

This year's report outlines the current Combined Transport market situation in Europe by providing data and information on

- the current volume of the entire Combined Transport and its market segments,
- the development of Combined Transport, including its market segments, and
- the assessment of future developments.

In addition to the key facts of the CT-market and the general market framework, as a specific analysis on intermodal loading units (ILUs), regional disparities and the role of terminals in the CT chain will complete the picture of the European CT market.

The market data collection was carried out by means of a survey among the relevant CT market players in more than 30 European countries, including CT operators, railway undertakings, logistics service providers as well as owners and operators of ILUs. Companies were asked for their individual data on CT activities in terms of volumes and geographical scope, but also for their market assessment in terms of regional and overall CT market development.

All figures presented focus on the reference year 2019 and are displayed and evaluated anonymously and solely as aggregated volumes. All data provided for Combined Transport relate to the CT definition as mentioned in the following chapter with focus on rail/road services not including transport via inland waterways.

Within the data collection special attention was paid to data check and verification to overcome the lack of a comprehensive and comparable database of the European Combined Transport market and different individual methodologies regarding definitions, data compilation and counting standards.

For this reason and to provide a solid methodical basis, the present report relies also on different complementary sources, which were taken into account for a plausibility check:

- a comprehensive data base resulting from the market survey by means of a questionnaire for all relevant market players, including personal interviews on specific requests, clarifying any unanswered questions,
- a cross-comparison with the UIRR statistical database,
- desk research involving the most relevant data sets and statistics for the different market segments,
- additional checks, bilateral discussions, and adjustments in case of data inconsistencies.

The figures presented in this report refer to the total performance data and volumes of more than 100 different players who perform Combined Transport activities.

The approach pursued here follows the methodology of previous reports, which ensures continuity and comparability in terms of market volumes and market development. The continuously changing market environment and structure due to new market entrants, mergers and acquisitions, changes in company names or the withdrawal of market participants have been considered in the report.

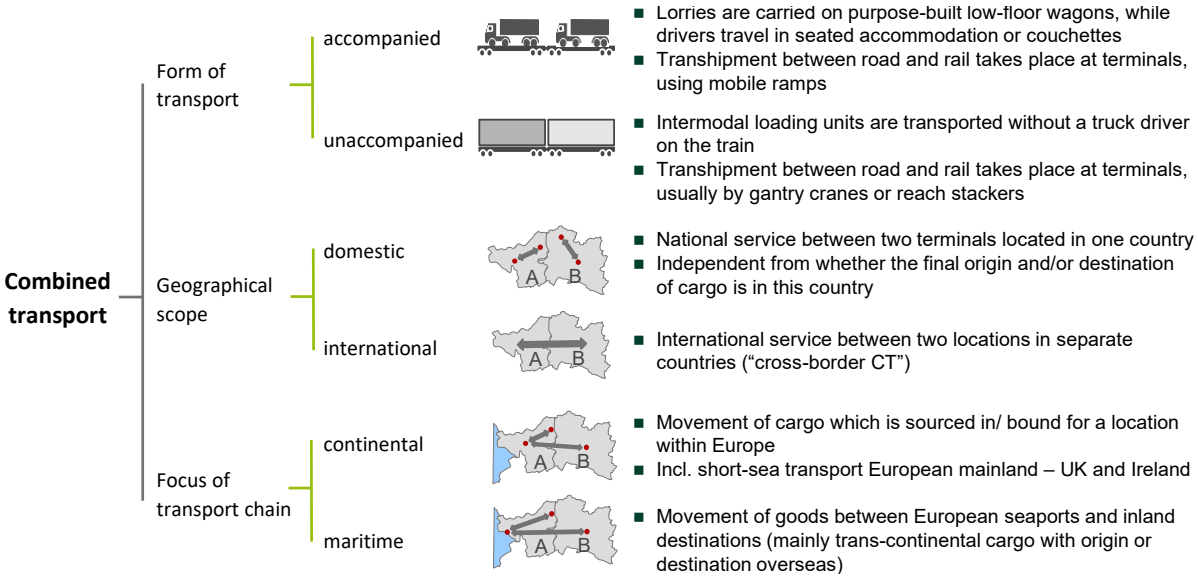
Definition, market structure and key elements of Combined Transport

In the European freight market, Combined Transport (CT) is an important element, the share of which has been constantly increasing during the past decades. It has become of major importance today. According to the Council Directive 92/106/EEC, Combined Transport is defined as follows:

Combined Transport means the transport of goods:

- between Member States where the lorry, trailer, semi-trailer, with or without tractor unit, swap body or container of 20 feet or more uses the road on the initial or final leg of the journey and, on the other leg, rail or inland waterway or maritime services where this section exceeds 100 km as the crow flies and makes the initial or final road transport leg of the journey;
- between the point where the goods are loaded and the nearest suitable rail loading station for the initial leg, and between the nearest suitable rail unloading station and the point where the goods are unloaded for the final leg;
- within a radius not exceeding 150 km as the crow flies from the inland waterway port or seaport of loading or unloading.

Figure 1: Overview of market segments in rail/road Combined Transport



Source: BSL Transportation analysis.

The first distinction is the **form of transport**. This segment focuses on how combined transport is carried out. On the one hand, it can be carried out accompanied, which means the truck driver not only drives the freight to the terminal but also travels by train along with the truck and the tractor unit all the way to the offloading terminal. On the other hand, it can be carried out unaccompanied, whereby the ILUs are transported without a truck driver and a tractor unit on the train.

Secondly, Combined Transport can be distinguished by its **geographical scope** which follows a strictly territorial principle of looking at the loading unit. Services can therefore be conducted domestically, where the whole transportation service takes place entirely on the territory of a single country, or internationally crossing border between countries. In specific cases, it is difficult to define the origin and/or destination of a CT loading unit as the primary origin and the final destination may not always be in the countries taken into account, i.e. a service classified as domestic may be forwarded to another country without the knowledge of the CT provider. Also, in international CT, a unit may be subsequently forwarded to a third country.

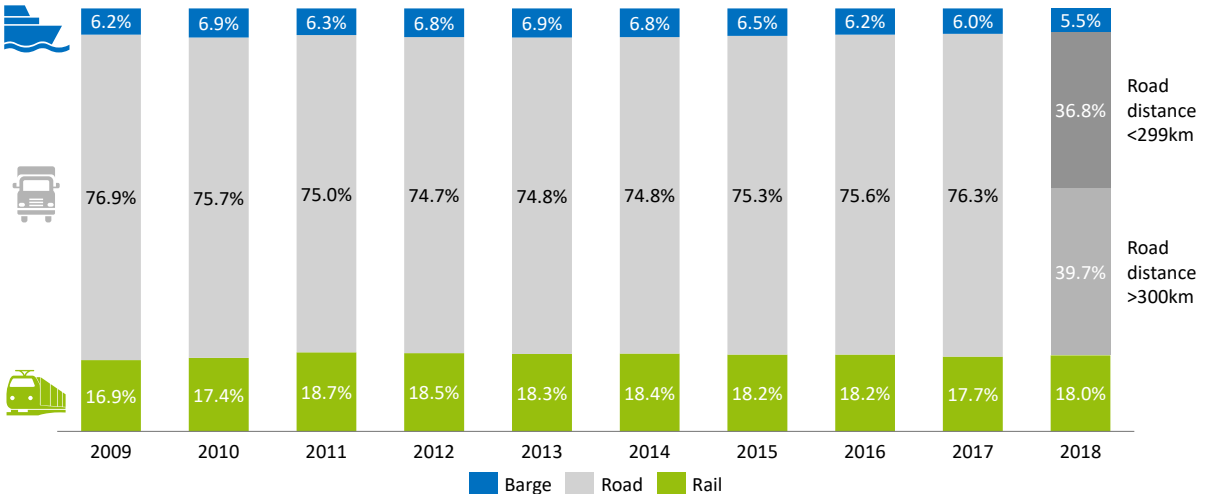
The last differentiation is the **focus of the transport chain** and distinguishes between the origin of the transported intermodal loading unit, whether it is part of a continental or its origin or destination is a deep-sea port (maritime CT services). While continental CT is characterised by the fact that it both originates from and is destined for a country within Europe, maritime CT involves transcontinental shipments via deep-sea link.

Rail and intermodal transport in the European freight market

Both Rail and intermodal transport are important components of the European transport sector, and therefore of the European economy. The following chapter uses Eurostat as the official data source to give a first impression of the composition of this sector and also to show the role of rail and intermodal transport within the freight market. Further analysis is based on data from the specific market survey conducted by BSL in the last months. The figures differ from Eurostat data - particularly due to gaps in Eurostat's data availability which is not given for every country and mode of transport.

In Europe, road freight transport has always played a central role in the transport of goods at local, regional and European level; its modal share has remained constant at at least 74%, of which almost half (48.15%) of these road transport services are less than 300 kilometers long and are therefore of limited importance for Combined Transport. For rail freight transport with a market share of above 18%, it is also proving to be of major importance in terms of traffic composition, which is expected to grow considerably. Since the base year 2009, where the rail freight share was only 16.9% due to the global financial crisis, this share has risen to 18% by 2018. Nevertheless, the increase in rail's share in the modal split over the last decade was only 1.1% as illustrated in Figure 2. Based on Eurostat data on the major European countries for the period 2011-2016, the share of rail has decreased, although the total volumes have increased from around 380 in 2011 to more than 410 billion tkm in 2018. This is due to the comparatively higher growth in the road freight sector over the same period.

Figure 2: Development of rail's share in modal split of European freight transport (in % of tkm)

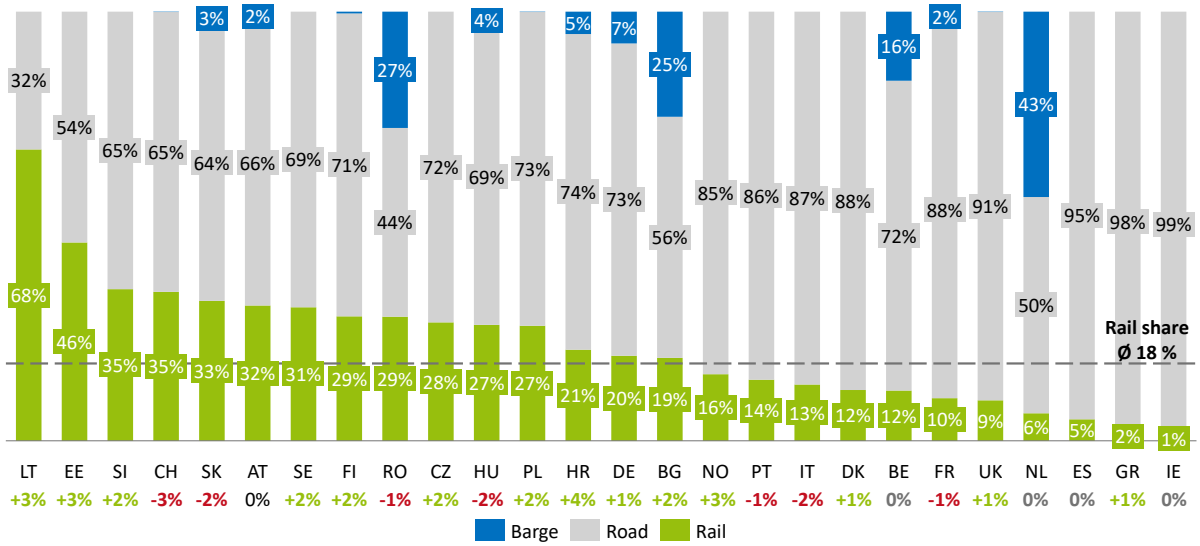


Source: Eurostat (2020), last database update by Eurostat: modal split (tran_hv_frmod) April 1, 2020, road transport distances (road_go_ta_dctg) 13 July, 2020.

The comparison of the modal split per country in Figure 3 shows that there are substantial differences between the European countries and in particular that the share of rail freight transport varies considerably when comparing countries. The range of the modal split of the rail share fluctuates from a very low level of 1% in Ireland to a high level of around 68% in Lithuania.

It is not only the overall shares of rail freight transport in European countries that differ. The development of this percentage from 2017 onwards also varies. While in some countries such as Belgium, the Netherlands, Spain or Ireland there has been no change, in other countries the share of rail freight decreased or increased. The sharpest decrease of 3% in two years was in Switzerland, the strongest increase of around 4% in Croatia as shown in Figure 3.

Figure 3: Modal split 2018 for 26 European countries and its development since 2016 (in % of tkm)

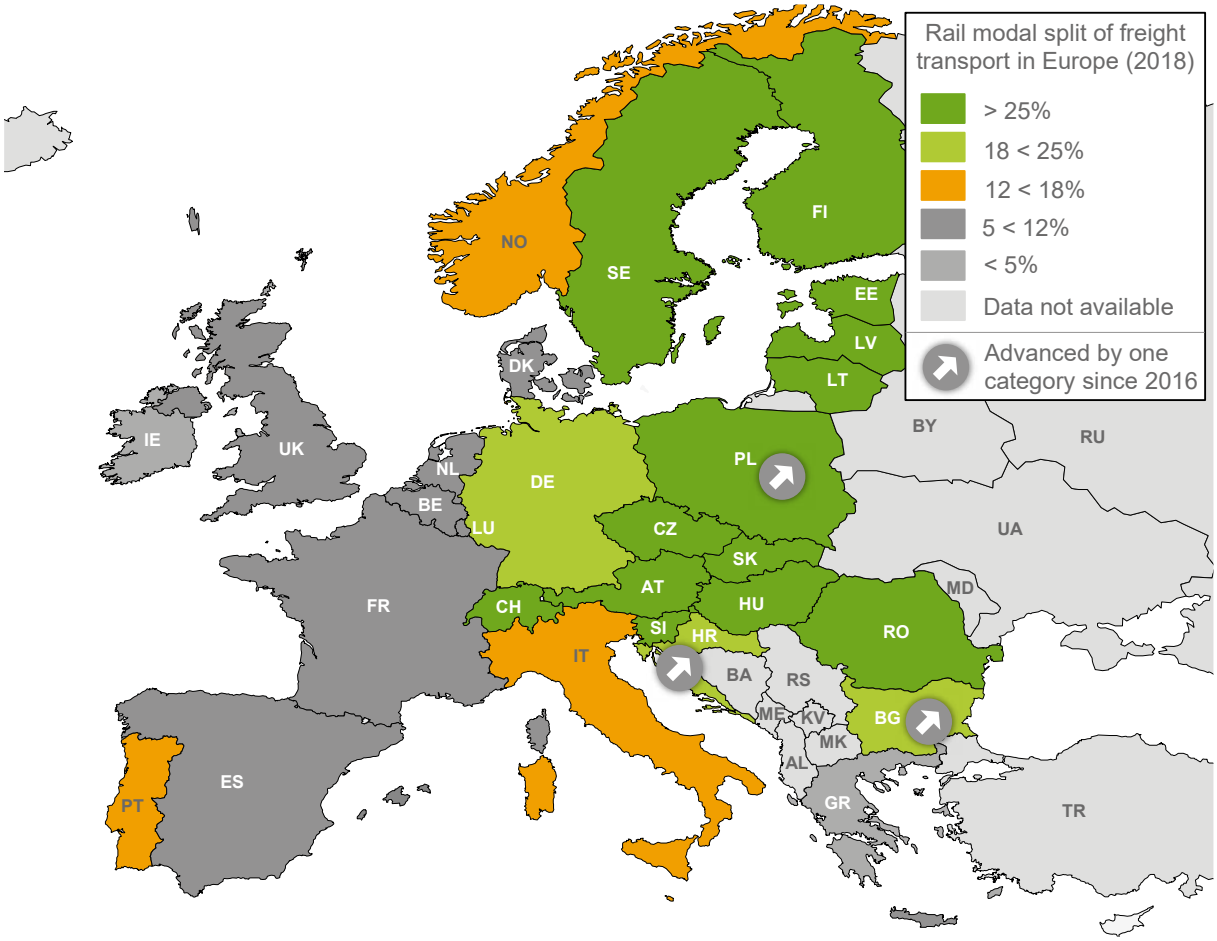


Note: Selection of countries based on data availability and in line with previous report editions. Rounding differences may occur.
Source: Eurostat (2020), last database update by Eurostat: modal split (tran_hv_frmod) April 1, 2020.

The illustration of the data on a map of Europe (Figure 4) shows that the market share of rail freight transport is relatively high, especially in North-Eastern Europe. In this area, most of the countries that were considered indicate a rail share of more than 25% of the total modal split. In comparison, most of the Western countries struggle with shifting from road to rail. In countries like France, United Kingdom or Spain, the rail modal split of rail transport is still below 12%.

Compared to the 2018 Report on Combined Transport, there have been a few changes within the categorisation of countries according to their rail modal split. Poland was able to move up to the category of countries with a rail modal split of more than 25%, Croatia and Bulgaria were able to increase the rail modal share to more than 18%. None of the analysed countries had a decisive loss in rail freight share, so no country had to be categorised lower (Figure 4).

Figure 4: Map of rail modal split of freight transport in Europe by country in 2018 (% in total inland freight tkm)



Source: Eurostat (2020), last database update by Eurostat: modal split (tran_hv_frmod) April 1, 2020.

The total European rail freight performance in million tonne-kilometers has remained relatively stable since the reference year 2009.

Figure 5 shows that the market has seen only a slight but almost constant increase in rail freight tkm since the reference year 2009. In terms of tonnes transported, the market volume has declined since 2011, followed by a small increase from 2016 to 2018. This growth since 2016 is also reflected in the development of rail freight in tonne-km.

Within the slowly increasing volume of total rail freight transport, intermodal rail freight, defined by Eurostat as “multimodal transport of goods, in one and the same intermodal transport unit by successive modes of transport without handling of the goods themselves when changing modes”1, has experienced a very strong increase since the reference year of 2009 leading to an overall growth of approx. 49.9% in terms of tonnes by 2018. Since 2017 this increase has added up to more than 8%. Looking at the percentage growth in tonne-km, there has been a smaller but steady growth resulting in an overall increase of almost 35% over the last decade. The difference in growth rates indicates higher volumes combined with shorter distances travelled. Overall, the growth in intermodal transport results in a total volume of nearly 264 million tonnes and about 92 billion tonne-kilometres transported by rail throughout Europe in 2018, accounting for 22.9% of the total rail freight volume (in terms of tkm).

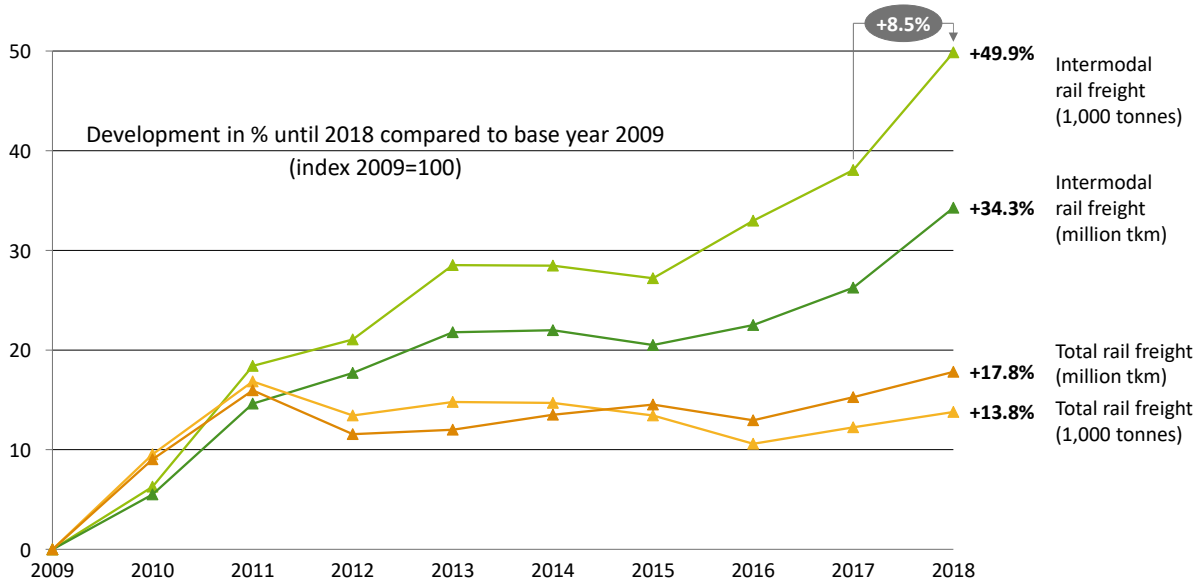
Methodological remarks concerning data base (Eurostat vs. specific market survey)

Discrepancies were found between the market survey and Eurostat data, mainly due to the incomplete availability of data for some countries in the Eurostat database. While tonne volumes are comparable, the Eurostat tonne-kilometer values represent the current transport market to a limited extent.

Although the absolute values differ, the overall trend of Eurostat data is the same as that shown in the responses to the market survey, and therefore the market trend can be analysed.

Combined Transport can be distinguished by its form of transport, the geographical scope of the service, and the focus of the transport chain. Due to this distinction, six different market segments of Combined Transport can be determined which are characterised in Figure 1.

Figure 5: Development of total rail freight performance vs. rail transport of goods in intermodal transport units in Europe (Index 2009 = 100)



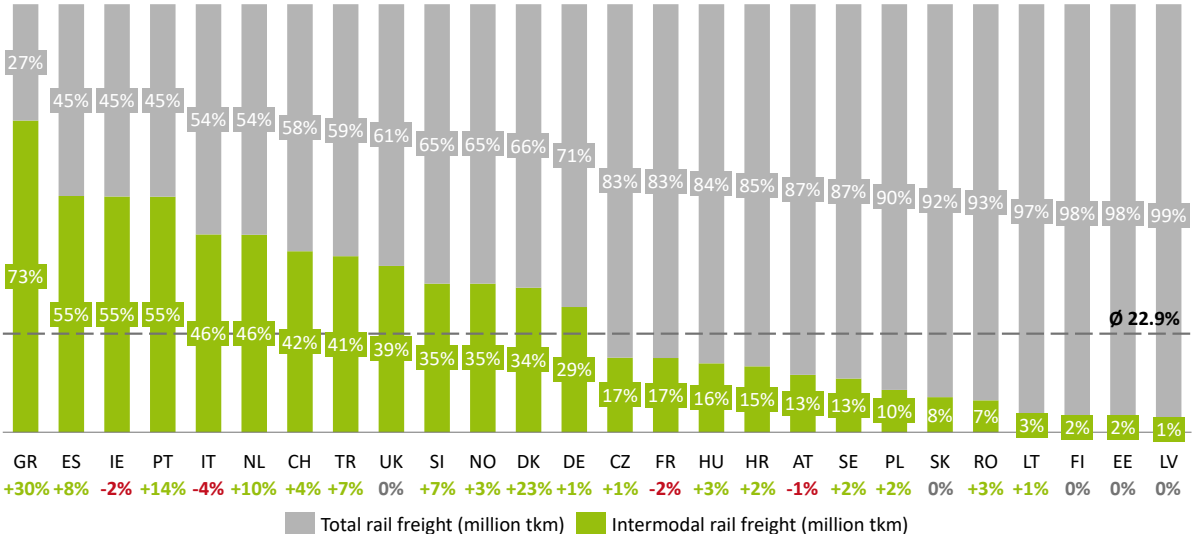
Source: Eurostat (2020), last database update by Eurostat: intermodal rail freight (rail_go_contwgt) 24 September 2020, total rail freight (rail_go_typeall) 25 September 2020.

[1] Source: Eurostat (2019): Glossary for transport statistics. 5th edition.

Across 26 European countries the share of intermodal rail freight varies considerably. While in Latvia the share was only 1% in 2018, in Greece 73% of rail freight transport was performed as intermodal freight transport. On average, the share of intermodal rail freight in Europe was approx. 23%.

From 2016 to 2018, strong developments could be observed in the intermodal market. While in some countries the share of intermodal services has not changed, growth has been recorded in most countries. Especially Greece and Denmark stand out with growth rates of over 20% in the share of intermodal rail freight. Only in Austria, France, Ireland, and Italy did the share of intermodal freight transport decrease within a two-year period.

Figure 6: Share of intermodal rail freight (in tkm) for 26 European countries in 2018 and its development since 2016



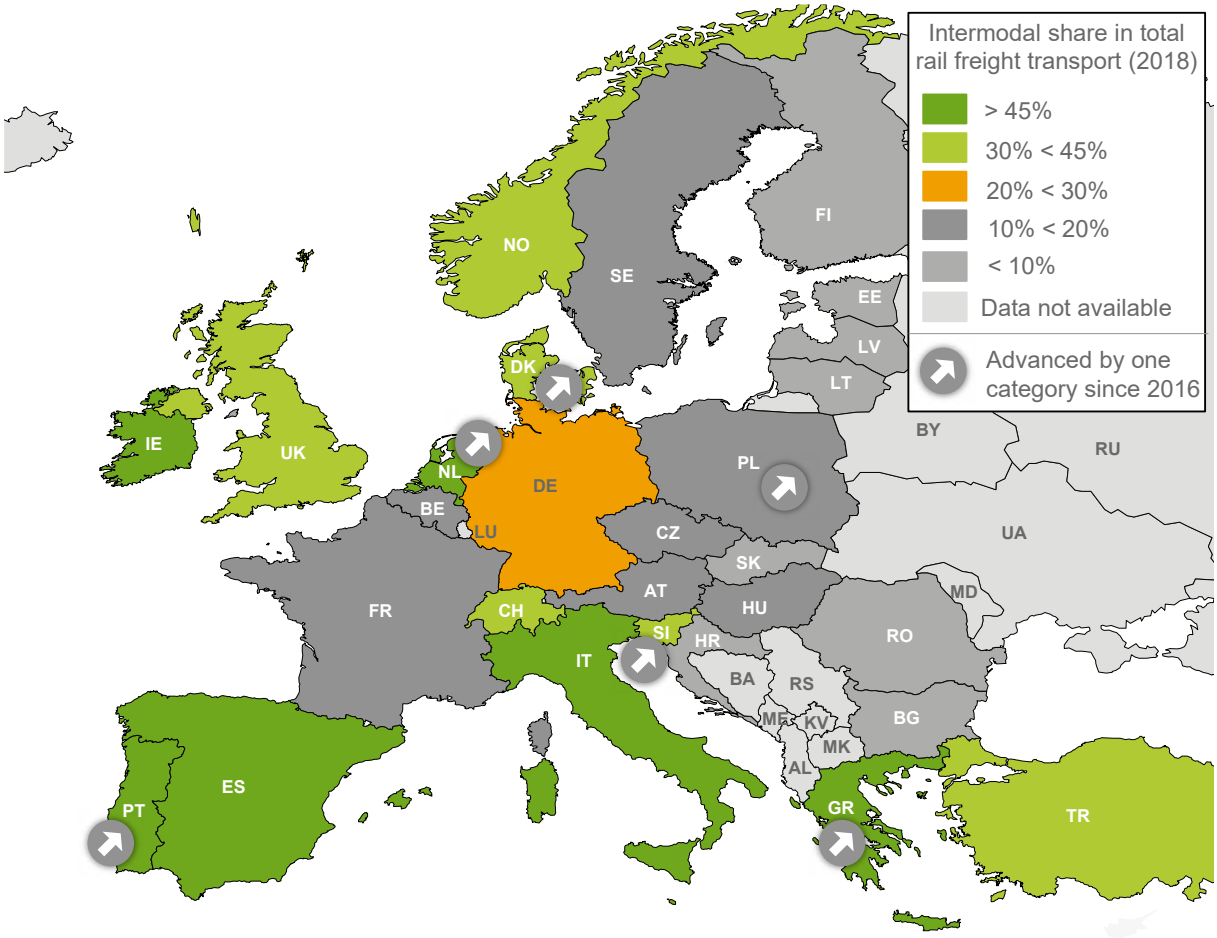
Note: Selection of countries based on data availability and in line with previous report editions. Rounding differences may occur.
Source: Eurostat (2020), last database update by Eurostat: intermodal rail freight (rail_go_contwgt) 24 September 2020, total rail freight (rail_go_typeall) 25 September 2020.2

However, other factors must be taken into account in this context to determine the importance of intermodal rail freight in a given country. Not only the percentage share of intermodal rail freight in total rail freight must be analysed, but also the modal split in that specific country. While countries such as Ireland, Spain or Greece have a high percentage of intermodal freight transport, their rail freight sector is only ofminor importance compared to road transport (see Figure 3). In comparison, Lithuania shows a modal split in rail freight of 68%, of which only 11% is accounted for by intermodal rail freight.

The presentation of the data collected on a map of Europe illustrates that there are strong geographical differences (Figure 7). In particular, the Western and Southern countries show a high affinity for intermodal transport with a share of 30% or more of total rail freight volume. Ireland, Italy, Spain, and the United Kingdom show exceptionally high percentages of more than 45%. However, most Eastern European countries have a share of intermodal freight transport of less than 20%.

[2] The average considers a weighted share of all European countries.

Figure 7: Intermodal rail freight transport in Europe (% in total rail freight tkm) in 2018



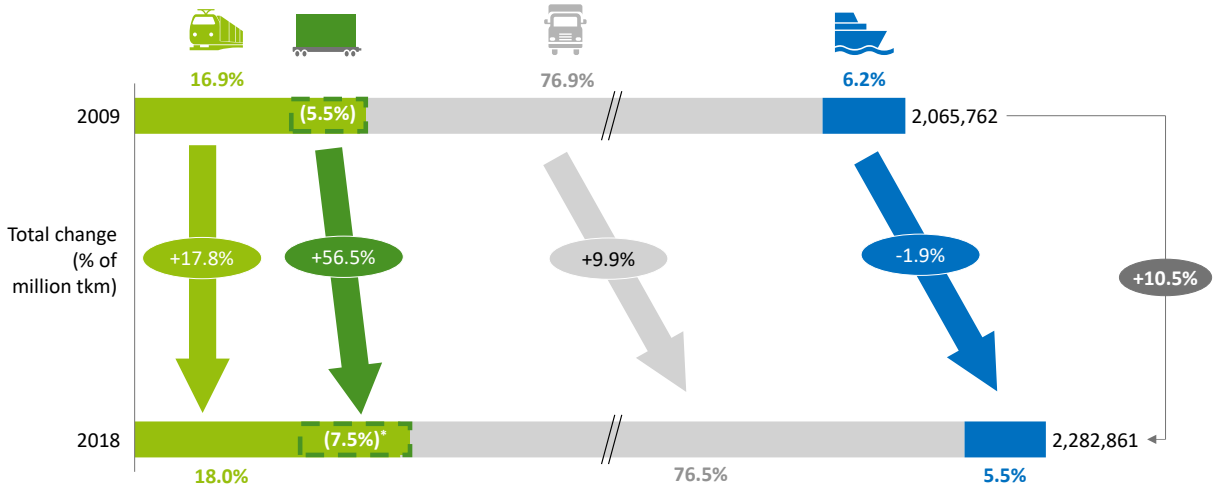
Source: Eurostat (2020), last database update by Eurostat: intermodal rail freight (rail_go_contwgt) 24 September 2020, total rail freight (rail_go_typeall) 25 September 2020.

Specific Combined Rail/ Road Transport data

The Combined Transport sector has developed strongly in recent years as shown above. The figures presented in this section were collected and analysed on the basis of responses of the key CT stakeholders to the 2020 Survey on Combined Transport conducted by BSL. More than 100 players performing CT activities were asked to share data and assess the future of Combined Transport.

As intermodal rail freight is part of the overall rail freight sector, the two figures can be put into perspective. The highly dynamic characteristics of this market segment and the focus of the study make the percentage of intermodal freight transport particularly interesting. The following figure (Figure 8) shows the share of intermodal rail freight (calculated on the basis of volumes in tonnes and rail distances estimated by market participants) in total rail freight (based on Eurostat data) from 2009 until 2018. Only the figures for Combined Transport are based on the specific market survey, as the Eurostat intermodal data only gives a limited picture of the market. As rail data is more reliable in tonne-km than in tonnes, this measure is used as a basis for comparison.

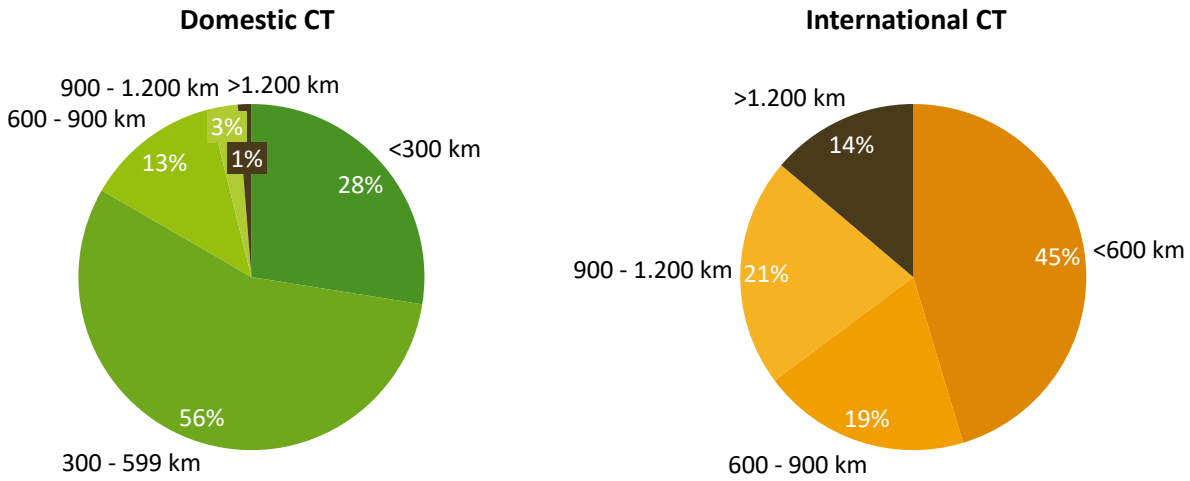
Figure 8: Share of intermodal and total rail freight in the overall modal split (in million tkm)



* Particularly due to gaps in data availability which is not given for every country/ transports, the share of CT based on tkm published by Eurostat is below 5%.
Source: Eurostat (2020), last database update by Eurostat: modal split (tran_hv_frmod) April 1, 2020, intermodal rail freight (rail_go_contwgt) 24 September 2020, total rail freight (rail_go_typeall) 25 September 2020.

Combined Transport is highly valuable for long-distance transport, both in domestic and international services, mainly due to the growing advantages of CT, such as lower fixed costs over longer distances. Nevertheless, it is also very important for short and medium distances as shown below on the basis of the responses to the survey. It shows that the category with the shortest distances in CT accounts for 28% (<300 km) in domestic transport and 45% (<600 km) in international CT (Figure 9). The average distance of the rail leg in domestic CT amounts to more than 480 kilometres, while the average rail distance in international CT is at about 860 kilometres.

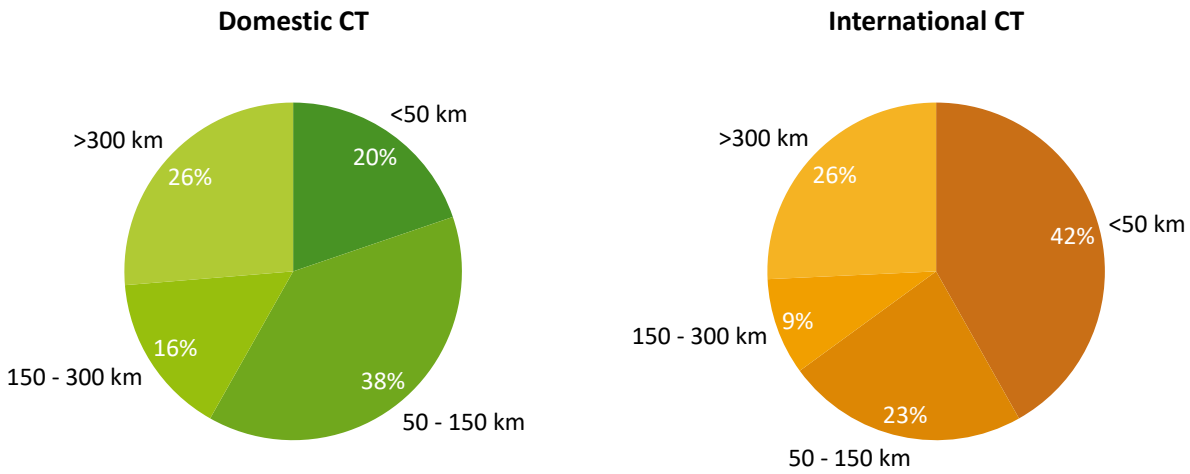
Figure 9: Total rail leg of CT trains



Note: Rounding differences may occur.
Source: BSL Transportation analysis based on survey.

When considering the Combined Transport relations, it is not only the distance of the rail leg that is decisive. The distance of the first and last mile road leg is also of great importance. As CT tries to minimise the distance covered by road due to environmental and social issues as well as high costs, short distances of the road leg should be aimed for. In particular in domestic CT, where the average total distances are shorter than in international transport, a miminum road leg should be achieved. Based on the survey responses, in both domestic and international CT, almost 75% of single road legs cover a distance of less than 300 km. Very short distances of less than 50 kilometers are more common in international CT than in domestic CT, as 42% of the services fall into this category.The percentage distribution of road leg distances in domestic and international CT in Europe is shown below (Figure 10).

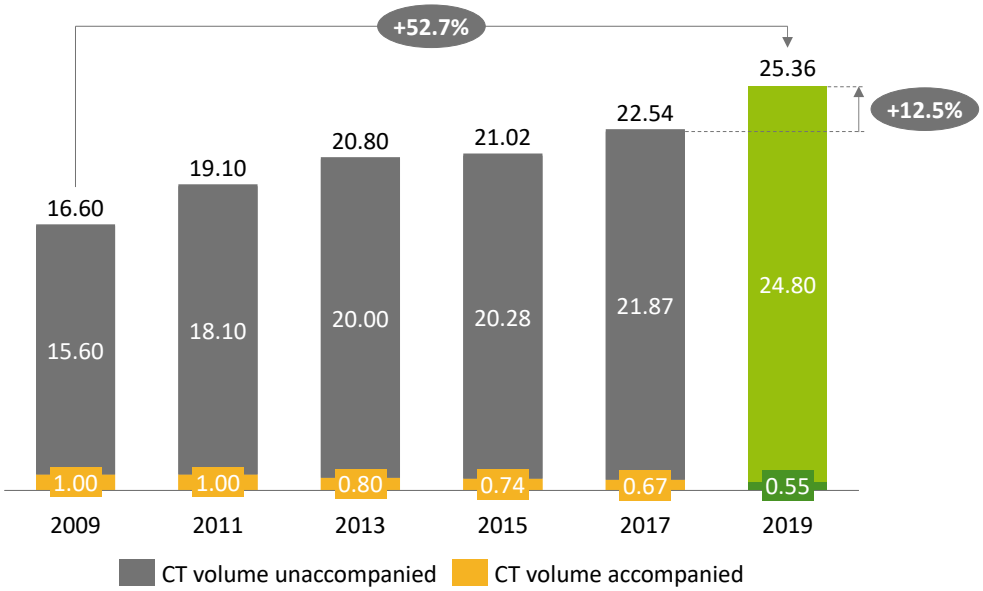
Figure 10: Single road leg in CT



Note: Rounding differences may occur.
Source: BSL Transportation analysis based on survey.

The transport volumes in Combined Transport have developed strongly over the past decade, which is illustrated in the following (Figure 11). It shows that more than 97% of the CT-volume transported can be accounted for by unaccompanied services, while only a small amount is accompanied. Since 2009, the market volume has been growing steadily. Overall, the average annual growth rate from 2009 to 2019 exceeds 4.2%, including an average growth rate of 6.1% over the last two years.

Figure 11: Development of total CT volumes 2009 to 2019 (in million TEU)



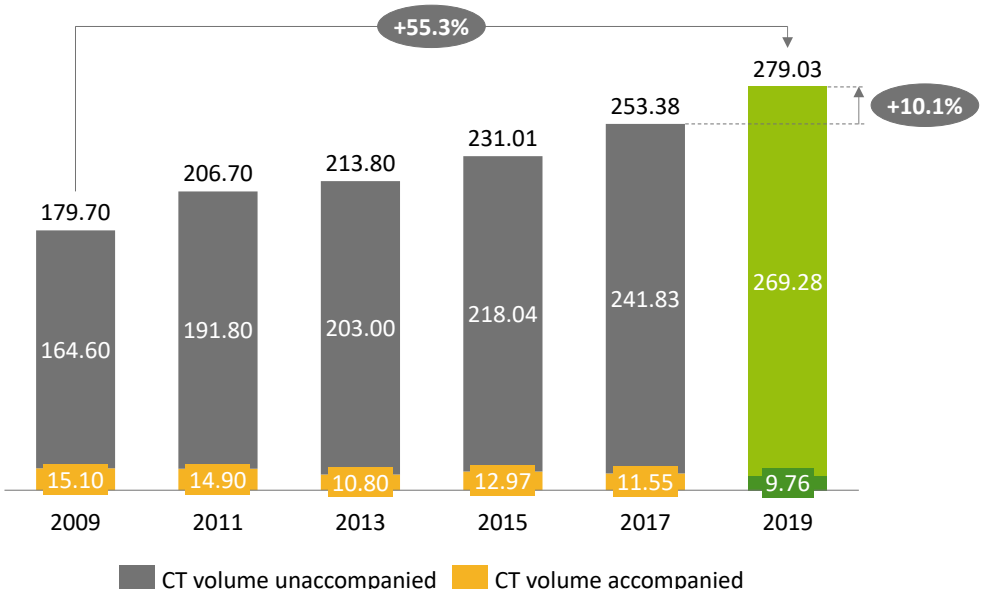
Source: BSL Transportation analysis based on survey.

Unaccompanied CT in particular has increased in volume, leading to a total of 24.8 million TEU in 2019. In comparison, the number of TEU transported in accompanied CT has been steadily decreasing since the base year 2009. From 2017 to 2019, the volume further declined, illustrating the shrinking importance of accompanied CT in Europe.

A look at tonnage instead of TEU shows that the overall increase from 2009 to 2019 is slightly higher, adding up to a growth of 55.3%. On the contrary, the change from 2017 to 2019 is smaller and amounts to 10.1%.

Figure 12 illustrates the dynamic characteristics of the Combined Transport market in unaccompanied and accompanied services over the past decade.

Figure 12: Development of total CT volumes 2009 to 2019 (in million tonnes)

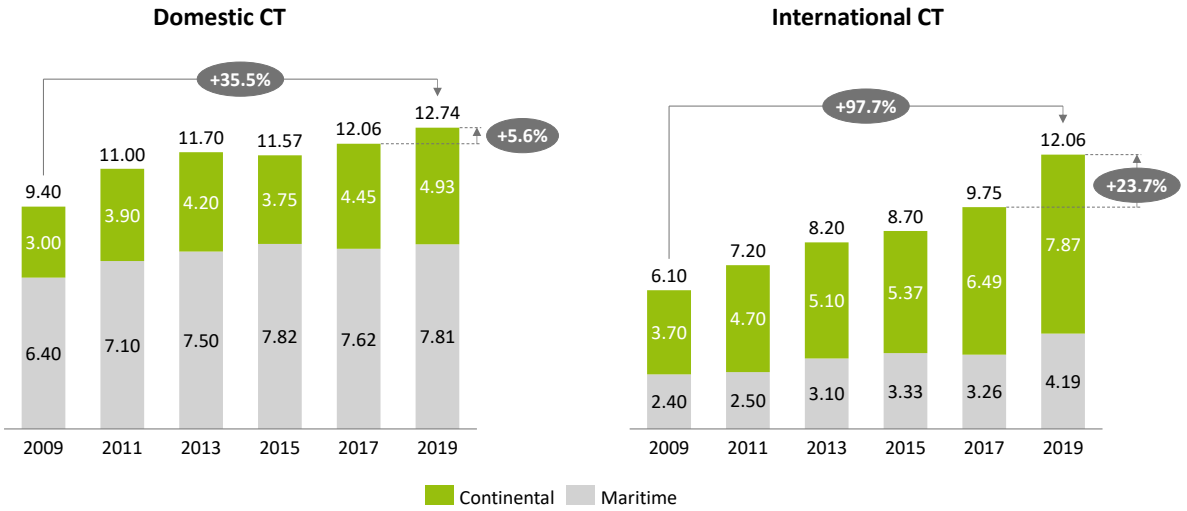


Source: BSL Transportation analysis based on survey.

Unaccompanied CT

Over the last ten years, the volumes of domestic and international unaccompanied combined rail/ road transport in million TEU has developed positively, as shown in Figure 13. In domestic CT, the greater part of the volumes can be attributed to maritime transport services, while the increase in 2019 is higher in continental transport services. In international CT, continental services are more common, whereas maritime transport shows stronger growth rates. Overall, domestic CT recorded an increase of 0.6 million TEU between 2017 and 2019, while the volumes in international CT increased by 2.3 million TEU in the same period.

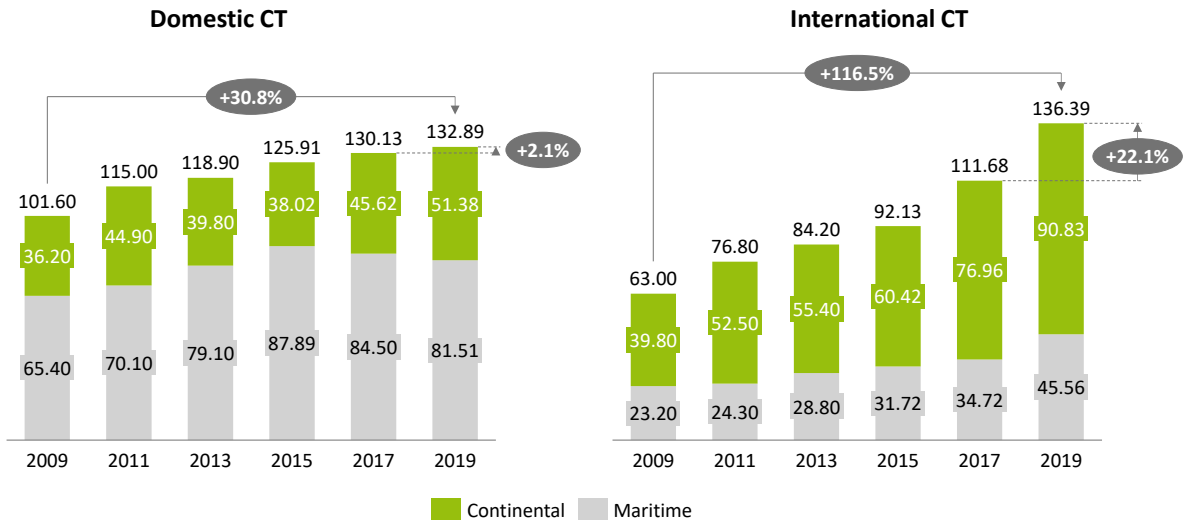
Figure 13: Development of domestic and international unaccompanied CT 2009 to 2019 (in million TEU)



Note: Rounding differences may occur.
Source: BSL Transportation analysis based on survey.

Over the years, not only the volumes in terms of million TEU but also those in tonnes have developed positively (Figure 14). While the volume in domestic CT increased from 130.1 to 132.9 million tonnes between 2017 and 2019, there was an upswing in international CT from 111.7 to 136.4 million tonnes in the same period. The distribution of continental and maritime transport remains nearly the same as in the figure above (Figure 13).

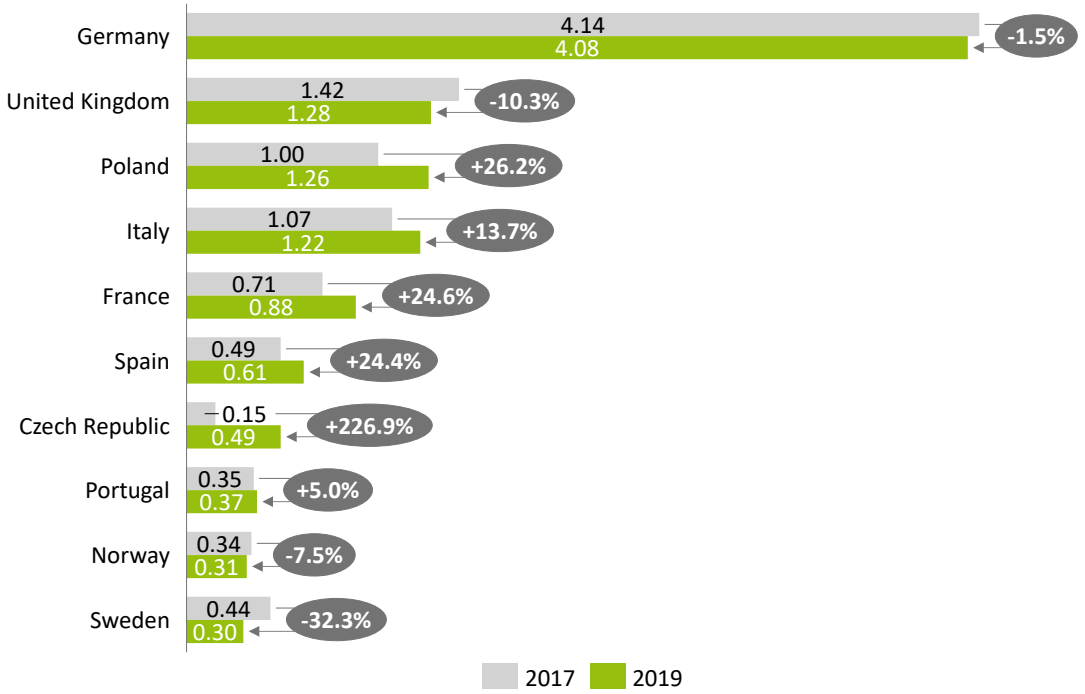
Figure 14: Development of domestic and international unaccompanied CT 2009 to 2019 (in million tonnes)



Note: Rounding differences may occur.
Source: BSL Transportation analysis based on survey.

Figure 15 and Table 1 illustrate the development of domestic unaccompanied Combined Transport for the European countries with the highest CT volumes from 2017 to 2019. It is obvious that there are strong differences between European countries in terms of domestic CT volumes. While some European markets of unaccompanied domestic CT do not seem to have any influence on the overall CT volumes, the ten largest European markets represent approx. 80% of the total market.

Figure 15: Development of the Top 10 domestic unaccompanied CT per country from 2017 to 2019 (in million TEU)



Source: BSL Transportation analysis based on survey.

Table 1: Development of domestic unaccompanied CT per country (tonnes)

Country	Tonnes		
	2017	2019	Development
Germany	41,377,684	36,646,494	-11.4%
United Kingdom	21,709,181	19,017,532	-12.4%
Poland	8,059,205	10,579,316	31.3%
Italy	11,251,200	12,522,642	11.3%
France	5,912,067	7,583,692	28.3%
Spain	4,752,335	6,030,678	26.9%
Czech Republic	2,913,465	8,341,308	186.3%
Portugal	3,648,915	3,721,887	2.0%
Norway	3,338,976	3,090,198	-7.5%
Sweden	4,635,338	2,819,890	-39.2%

Source: BSL Transportation analysis based on survey.

Within the ten largest domestic CT markets, Germany, the United Kingdom, Norway, and Sweden show a negative trend both in terms of TEU and in tonnes, while the others have developed positively. The Czech Republic in particular (+226.9% based on TEU) has experienced an extremely high increase between 2017 and 2019.

Combined Transport relations are not restricted to a specific country but extend across the whole of Europe, going in all directions, connecting all areas of the continent and even beyond. Nevertheless, some trade lanes are served more than others. In particular the North-South relations from the North Sea (Germany, Netherlands, Belgium) to the Mediterranean (Italy) have proved to be most frequently used in recent years. The 20 major

European trade lanes in international unaccompanied CT and their development over the last two years are shown below (Table 2). These lanes make up approx. two third (based on TEU) of all international Combined Transport services.

Table 2: Major European trade lanes in international unaccompanied CT (in TEU and tonnes)

Trade lane		TEU			Tonnes		
		2017	2019	Develop-ment	2017	2019	Develop-ment
Germany	Italy	1,553,328	1,905,995	22.7%	19,915,267	23,611,992	18.6%
Czech Republic	Germany	756,729	930,616	23.0%	7,649,439	9,073,580	18.6%
Belgium	Italy	714,694	739,807	3.5%	9,156,448	9,424,007	2.9%
Germany	Netherlands	581,379	736,490	26.7%	6,686,219	6,404,879	-4.2%
Italy	Netherlands	458,025	520,641	13.7%	6,118,486	6,873,913	12.3%
France	Luxemburg	205,037	343,068	67.3%	3,127,385	4,295,679	37.4%
Germany	Sweden	256,745	336,502	31.1%	2,813,600	3,860,833	37.2%
Austria	Germany	358,729	328,802	-8.3%	3,896,851	3,508,415	-10.0%
Slovakia	Slovenia	319,922	301,788	-5.7%	2,552,178	2,678,030	4.9%
France	Italy	247,682	269,662	8.9%	3,259,281	3,559,284	9.2%
Germany	Spain	214,299	244,199	14.0%	2,567,637	2,877,590	12.1%
Germany	Hungary	209,436	243,337	16.2%	2,321,643	2,265,879	-2.4%
Hungary	Slovenia	217,777	208,223	-4.4%	2,122,831	2,058,368	-3.0%
Hungary	Italy	54,476	186,667	242.7%	445,528	1,441,846	223.6%
Austria	Italy	136,509	176,528	29.3%	1,568,315	2,126,449	35.6%
Belgium	France	152,626	149,550	-2.0%	1,299,600	1,367,935	5.3%
Russia	Slovakia	102,090	123,145	20.6%	689,465	769,517	11.6%
Germany	Poland	161,026	119,475	-25.8%	1,284,398	933,774	-27.3%
Czech Republic	Netherlands	116,105	116,743	0.5%	802,261	809,172	0.9%
Belgium	Luxemburg	43,572	115,840	165.9%	923,230	1,623,537	75.9%

Source: BSL Transportation analysis based on survey.

It shows that most trade lanes have developed positively leading to increases of more than 100% or even 200% in some cases, including among other things the introduction of new services and increasing train frequencies to meet the growing demand (e. g. Hungary to Italy and Belgium to Luxemburg). Nevertheless, a small number of trade lanes have been declining in volume over the last two years.

Accompanied CT

Accompanied Combined Transport is the less frequently used type of CT and accounts for the smaller share of the total market. With a volume of around 555,000 TEU, it can be considered as a niche market for selected transport services. Table 3 gives an overview of the volumes in accompanied CT in 2019 in TEU as well as in tonnes.

Table 3: Volumes in accompanied Combined Transport 2019 (in TEU and tonnes)

	Domestic	International	Total
TEU incl. cross-Channel traffic	242,328	3,558,876	**3,801,205**
TEU	242,328	312,239	**554,568**
Tonnes	4,289,211	5,466,175	**9,755,386**

Note: The two lower rows do not include cross-Channel traffic.
Source: BSL Transportation analysis based on survey; Eurotunnel Group.

In contrast to the very positive development of the unaccompanied CT sector, the accompanied CT sector has developed negatively in the last ten years. From 2009 to 2019, a decline was observed. In this period, the volume in million TEU fell from 1.0 million to almost 0.6 million TEU and the weight from 15.1 to 9.8 million tonnes.

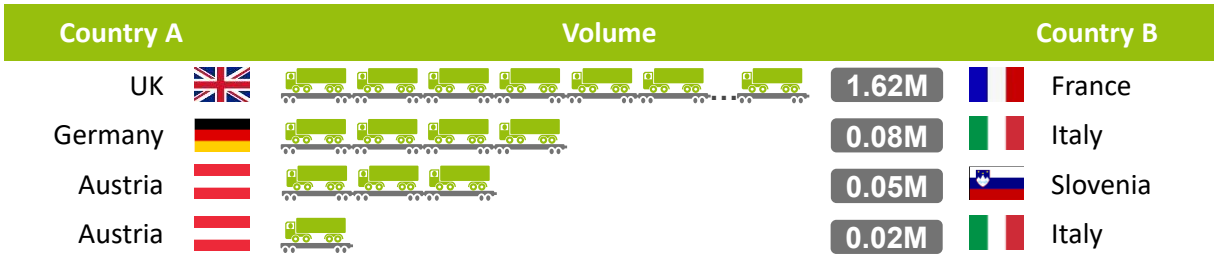
Although it is a shrinking market, accompanied CT is a useful tool for the sustainable transport of goods across Europe. Especially in view of transport policy targets as well as geographical specifities, such as the transport of goods across the Alps, accompanied Combined Transport is an appropriate solution that takes into account both environmental and economical issues.

The focus of the three remaining companies operating accompanied CT services in Europe is on the major international trade relations between

- Germany and Italy,
- Austria and Slovenia, and
- Austria and Italy.

Furthermore, cross-Channel transport between the UK and France is a unique service as it connects Folkestone (UK) with Calais (France) through the Eurotunnel - which is not included in the figures of accompanied transport services. Regarding the volume, the Channel service plays an important role in this niche market as it is the largest specific accompanied trade lane in Europe. Figure 16 illustrates the above-mentioned trade relations and the corresponding volumes served in 2019.

Figure 16: Trade relations and volumes of international accompanied CT in 2019 (based on shipments/trucks)



Source: BSL Transportation analysis based on survey; Eurotunnel Group.

In 2019, a volume of approx. 1.62 million trucks was transported on the cross-Channel relation. However, here too, the number of shipments in 2019 compared to 2017declined for the first time in the last ten years (Table 5).

Table 4: Accompanied cross-Channel transport between the UK and France (number of trucks)

Eurotunnel	Trucks				
	2011	2013	2015	2017	2019
Cross-Channel UK - France	1,263,327	1,362,849	1,483,941	1,637,280	1,623,319

Note: Figures for 2019 were calculated on first half year.
Source: BSL Transportation analysis; Eurotunnel Group.

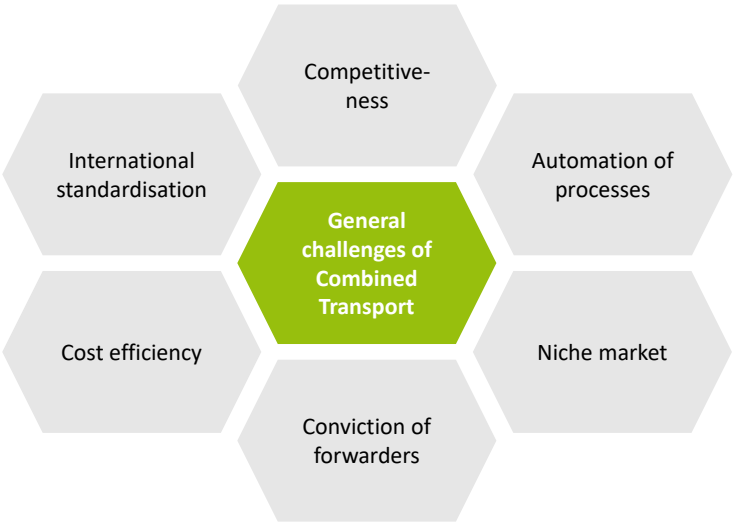
Due to the Brexit and the unclear situation of trade between the United Kingdom and the European Union, the future of this relation cannot be foreseen. If additional border controls are introduced on both sides of the Channel, speed and frequency of services are expected to decrease, while transit and waiting times will increase. Future decisions at governmental level will bring about change.

General framework and key elements of CT in Europe

Relevant trends and challenges of Combined Transport in Europe

Like any industry, the Combined Transport sector has to face a multitude of challenges that influence its actions and restrict its economic situation. The following figure (Figure 17) illustrates the main general challenges facing the Combined Transport sector.

Figure 17: General challenges of Combined Transport



Source: BSL Transportation analysis; SGKV Studiengesellschaft für den Kombinierten Verkehr e.V. (2020).

Combined Transport is influenced by many different factors, not only within the sector but also by factors outside the industry. Due to the constantly changing conditions under which Combined Transport has to operate, the CT sector in Europe is challenged by many different trends.

External trends

A large number of external trends have an impact on the future development of CT. These trends can be considered from different angles such as market, economic, mode, technology or regulatory, leading thus to different perspectives. The following figure (Figure 18) gives an overview of the most important external trends impacting CT based on the results of the survey.

Figure 18: External trends in Combined Transport

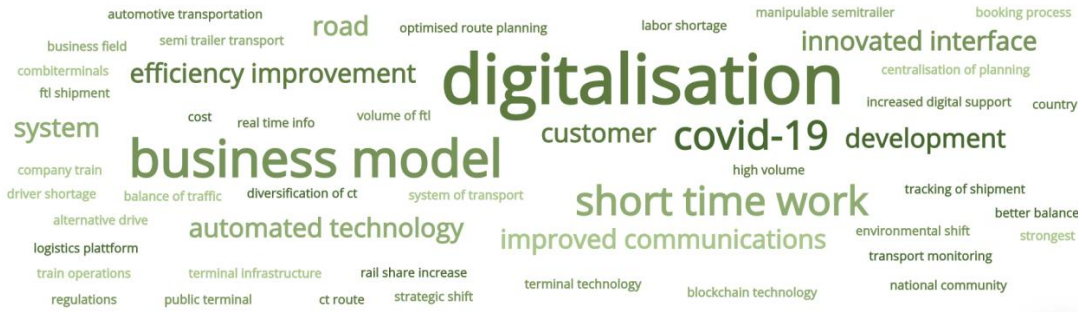
Note: The bigger the item is highlighted, the more market participants have mentioned it.
Source: BSL Transportation analysis based on survey; Word Cloud Generator by Monkey Cloud.

In particular, the experts expect a strong development in the future with regard to the economic situation, the general market development as well as the regulatory framework in rail freight transport. Many of these trends are induced or increasingly driven by the coronavirus and the resulting uncertainty. In addition, various aspects of sustainability in practice seem to be highly important for the various players in CT.

Sector-internal trends

On the other hand, changes for the CT sector result from sector-internal influences that develop independently based on the the sector's internal circumstances. These trends can also be distinguished according to the importance they have for companies in the CT sector as a result of the survey (Figure 17). It is obvious that in particular digitalisation and digital solutions associated with it, the implementation of new business models, improved communication and more efficiency/automation are expected to determine the future of Combined Transport more than other internal factors. COVID-19 and the short-time work triggered by the coronavirus are further relevant sector-internal issues.

Figure 19: Sector-internal trends in Combined Transport

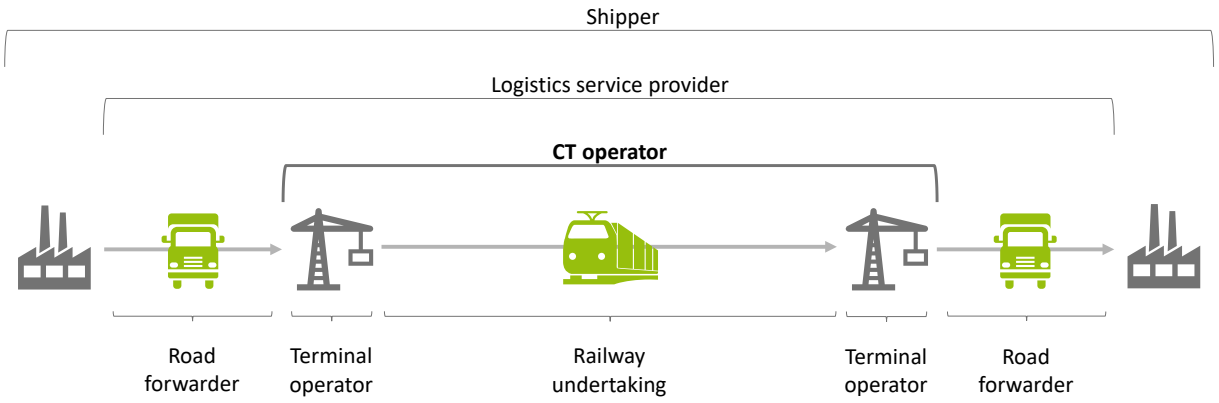


Note: The bigger the item is highlighted, the more market participants have mentioned it.
Source: BSL Transportation analysis based on survey; Word Cloud Generator by Monkey Cloud.

Business models and production systems in CT

The value chain of Combined Transport comprises a variety of different activities. Each of the companies involved plays an important role in the implementation of Combined Transport by performing different processes. The following actors and their relationship to one another can be identified (Figure 18).

Figure 20: Actors in combined rail/ road transport



Source: BSL Transportation analysis; Wecon GmbH.

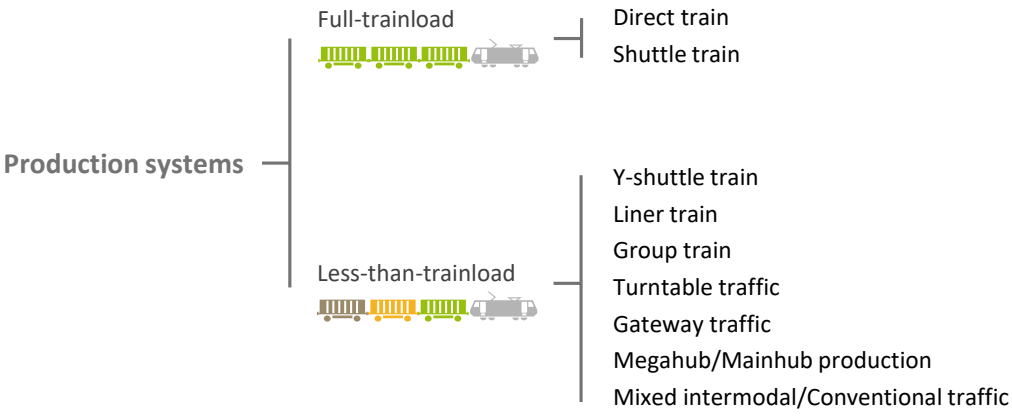
Based on the actors in CT and the degree of integration within the value chain, the following business models and their specific characteristics can be identified in the CT sector in Europe.

1. **CT operators**: Companies whose core business is to offer CT services. CT operators act as independent intermediaries or brokers between potential customers and railway undertakings. CT operators usually purchase transport capacities from railway companies with volumes ranging from a wagon-by-wagon basis to block trains for one or more customers.
2. **Logistics service providers (LSPs) with CT business**: Logistics service providers usually manage warehousing, distribution, and transportation of freight - including road haulage activities. In some cases, LSPs take on the role of CT operator.
3. **Shippers**: Shippers are businesses that transport (ship) goods, especially those involved in export and import. The possible value chain can be broader than that of LSP or CT operators. Shippers only rarely take on the role of CT operator.
4. **Railway undertakings with CT business**: Railway undertakings focus on rail operation. They can also offer their customers CT services in addition to their primary tasks. The incumbent national railways in particular offer CT operation - primarily domestic services within their home countries.
5. **Terminal operators with CT business**: Terminal operators typically focus on terminal handling activities. However, they can also offer their customers CT services in addition to their primary tasks (more on this in the chapter “CT Terminal Analysis”). Further relevant players in CT include the seaports and the CT terminals (e.g. inland ports).

The key target groups of CT providers are shippers, shipping lines, logistics service providers and trucking companies, who strive to offer CT services at the lowest prices with the highest quality possible.

In Combined Transport, the production systems can be differentiated into two categories: full-trainload production systems and less-than-trainload production systems. Each of these includes specific types of Combined Transport, which are illustrated below and have specific characteristics not further specified in this report.

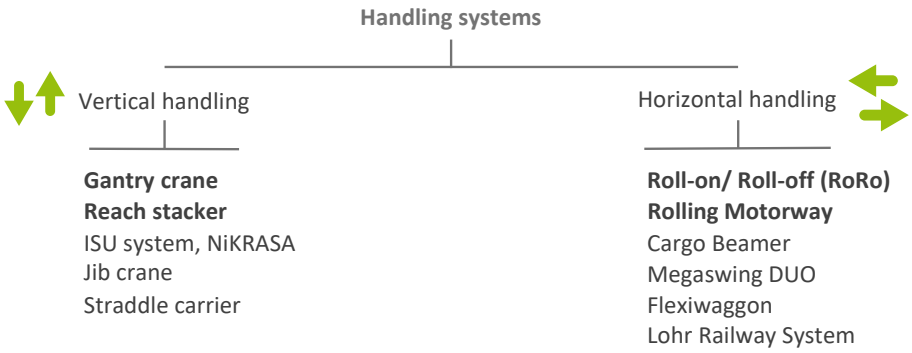
Figure 21: Production systems in Combined Transport



Source: BSL Transportation analysis.

Besides production systems, systems for handling are essential in Combined Transport, as handling is a critical process that must be performed between rail and road. A distinction can be made between vertical and horizontal handling processes. While in vertical handling processes loading units are lifted from the ground to be transferred to another mode, horizontal handling is mainly used for non-craneable units and for longitudinal or diagonal handling onto the transport carriage. The handling systems can be differentiated as follows (Figure 21). In vertical handling, gantry cranes and reach stacker are predominantly used, while in horizontal handling RoRo and rolling motorways are the most commonly used handling systems.

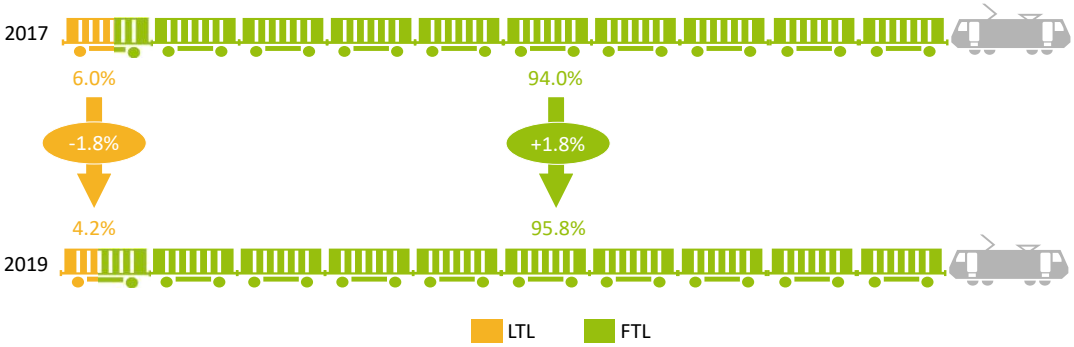
Figure 22: Handling systems in Combined Transport



Source: BSL Transportation analysis; SGKV Studiengesellschaft für den Kombinierten Verkehr e.V..

Based on the results of the survey, the transport composition in European Combined Transport shows a strong tendency towards full-truckload (FTL) shipments, as illustrated below (Figure 23).

Figure 23: Traffic composition in Combined Transport



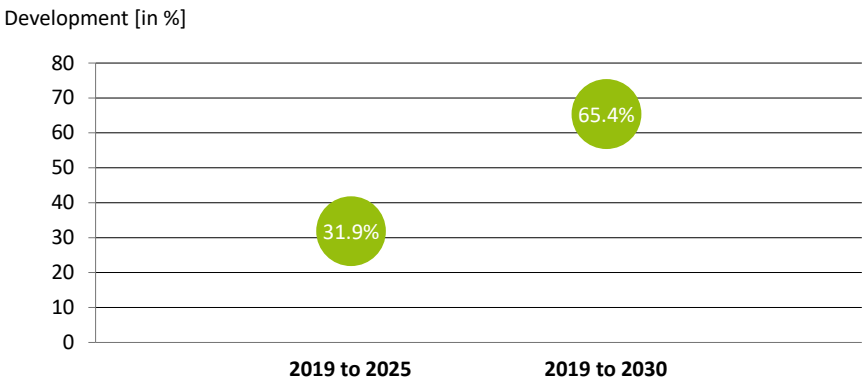
Source: BSL Transportation analysis based on survey.

The share of FTL shipments grew by almost 2% from 2017 to 2019, while the percentage of less-than-truckload (LTL) shipments declined over the same period. The share of full-truckload in 2019 accounts for 95.8% of all shipments, while 4.2% are less-than-truckload shipments.

CT market forecast

According to the general economic development, coronavirus also has a strong impact on the CT business and its volumes (as described below). Nevertheless, based on the survey results, the market participants still expect CT volumes to continue to grow noticeably in the coming years (Figure 24).

Figure 24: Expected volume growth of the total CT market in the long-term

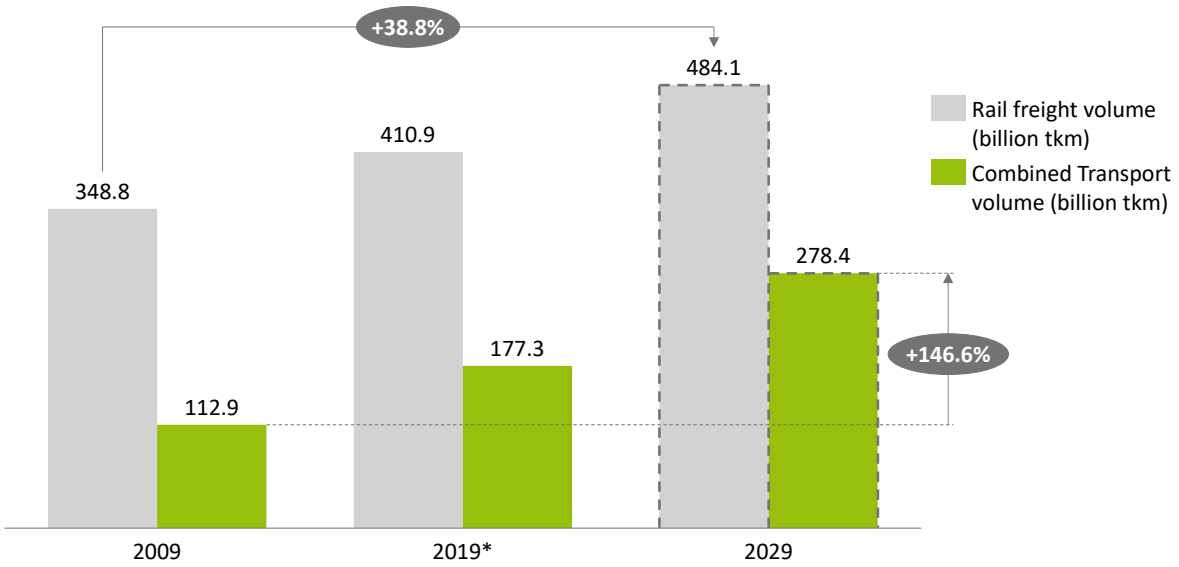


Source: BSL Transportation analysis based on survey.

Despite the difficult economic conditions in 2020, the assumed average growth in CT volume, with an annual growth rate of approx. 4.7%, is very positive in the long-term.

Based on the development of the CT so far and the total growth of the rail freight market , the CT market performed above average. If this trend continues, which seems quite reasonable, the CT volume will increase by almost 150% of the 2009 volume by 2029. The rail freight market will have grown by almost 40% between 2009 and 2029, as shown in Figure 25.

Figure 25: Previous and expected CT volume growth compared to total rail freight development (in billion tkm)



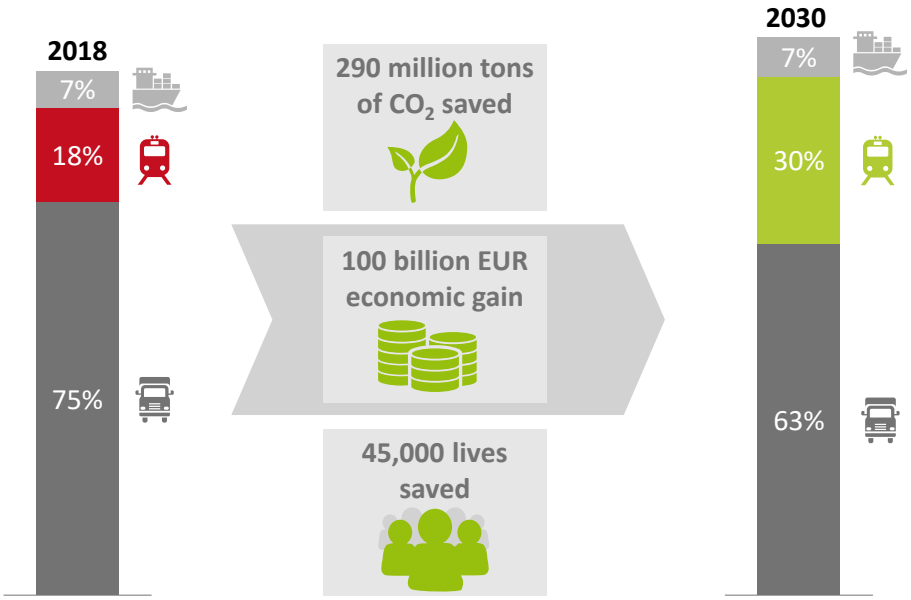
* Due to data availability the rail share for 2019 is illustrated by 2018 values.
Source: BSL Transportation analysis based on survey (CT); rail development based on Eurostat (2020).

Combined Transport's contribution to European rail freight initiatives

The Rail Freight Forward Initiative «30by2030» is an initiative to promote rail freight transport throughout Europe3 and supports the objectives of the European Green Deal, that was introduced in 2019 and aims at making the continent climate-neutral by 2050. The list of initiators of the initiative consists of European rail freight companies that aim at reducing the negative impact of freight transport on the environment and in other areas. Especially in times when the land freight transport market with a high affinity towards road freight transport is expected to grow by 30% until 2030, change is needed. The main goal of the initiative , which was launched in 2018, is to increase the share of the rail freight mode from 18 to 30 percent and at the same time drastically reduce the share of road freight transport. The introduction of this target is expected to generate a strong economic growth. Figure 26 briefly illustrates the expected positive effects of 30by2030 from 2018 to 2030.

[3] Rail Freight Forward is a coalition of European rail freight companies that are committed to drastically reduce the negative impact of freight transport on the planet and mobility, through innovation and a more intelligent transport mix. It currently consists of 18 members. More information on railfreightforward.eu.

Figure 26: Impact of 30by2030



Note: In addition to the modal split increase of the rail sector the overall freight market volume will probably expand by 10%.
Source: BSL Transportation analysis; 30by2030.

The Combined Transport sector has the ability to support the 30by2030 targets. Especially its ability to combine rail and road freight transport, hence using the advantages of both can have a positive impact. Below some of the central aspects show that CT can positively influence the goals of the initiative.

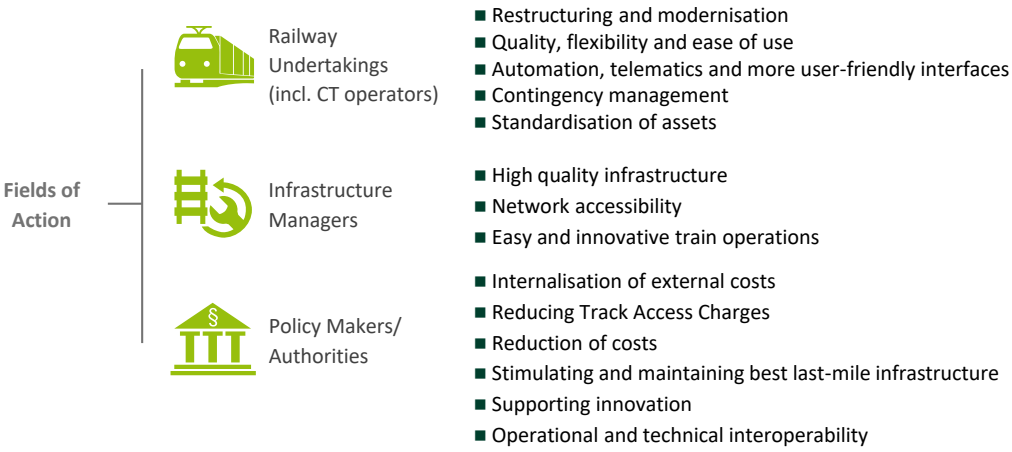
Figure 27: Influence of CT on the objectives of 30by2030

Source: BSL Transportation analysis; 30by2030.

First, the use of Combined Transport offers the possibility to responds to customer needs by offering terminal-to-terminal or door-to-door solutions. This helps to create the ability to transport goods over long distances by rail while keeping road transport on the last mile as short as possible. Secondly, transport volumes are shifted from road to rail using CT. This is particularly important when it comes to long-distance transport routes, which are severly hampered by congested roads and high variable costs. The use of CT helps to minimise the distance travelled by road, and at the same time increases the market share of rail freight, which has a positive influence on the objectives of the initiative. Lastly, innovations such as smart ICT systems aim to make CT transports more efficient and reliable and thus more attractive for customers. The more attractive CT gets, the more transport volume will be shifted to rail, thus positively effecting the 30by2030 targets.

The initiative not only expects the participation of Combined Transport companies , but also proposes several fields of action to improve the modal share of rail freight transport. Railway undertakings, CT operators and infrastructure managers as well as policy-makers and authorities can contribute to the objectives of the initiative by eliminating bottlenecks within their area of responsibility. The bottlenecks of RUs lie in particular in the innovative capacity of their products to create an advantage for customers using rail freight transport. The task of infrastructure companies is to create an infrastructure that is as easily accessible as the road freight transport infrastructure. In the regulatory field, a stable set of regulations must be created to improve the competitive conditions of rail freight transport. The following figure gives RUs and IMs as well as policy-makers and authorities an overview of some ideas they should consider for future action.

Figure 28: Fields of action in the rail freight sector



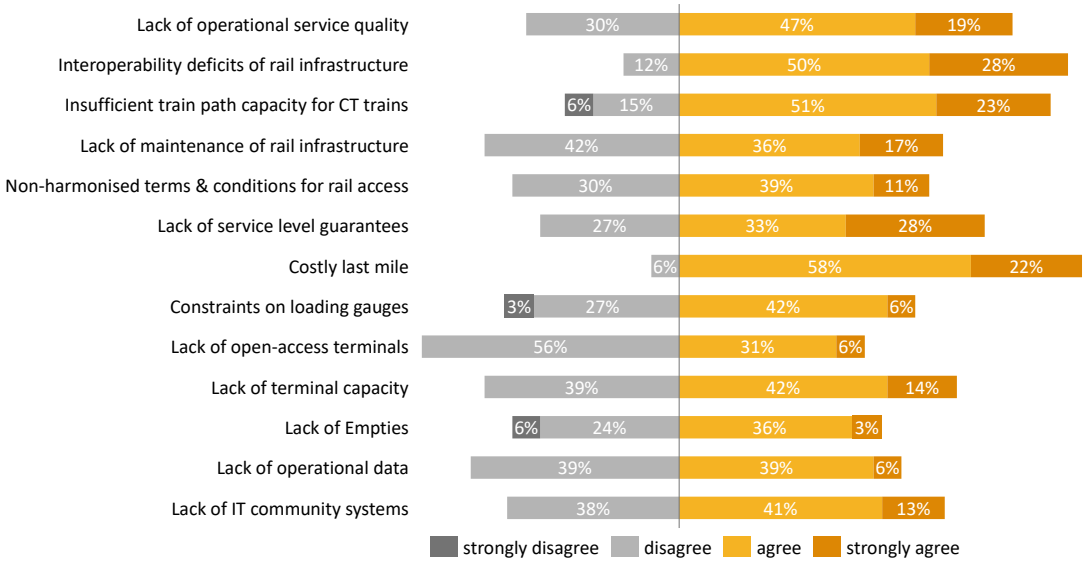
Source: BSL Transportation analysis; 30by2030, DB Cargo, UIRR.

To enable the 30by2030 targets to be met, a rethink is needed. Not only railway undertakings, policy-makers and authorities need to continue their actions in the rail freight sector, but also all those with a link to this specific sector. It is recommended that all companies operating in this sector or working closely with CT companies should adapt their actions based on the ideas of the initiative in order to minimise the distance covered by road and thus save money, lives and the environment. Furthermore, cooperation with other sectors such as road freight transport and state incentives could be a good way to make sustainable freight transport more efficient and therefore more attractive for customers. The fact that in 2020 only 10% of all semi-trailers used in long-haul road transport are also usable in CT shows that the connection between different sectors does not yet work at all. Of course, the standardisation of assets could be one aspect for greater interoperability. Besides that, the bottlenecks mentioned below give a good indication of what needs to be done to achieve the goals.

Key bottlenecks for Combined Transport

The use of Combined Transport depends to a large extent on effective processes. Bottlenecks that can be found in rail or road transport as well as in terminals or in the regulatory framework represent a significant limitation which must be removed. The significance of a certain bottleneck differs from the perspective from which it is viewed. There are therefore different opinions on bottlenecks as shown below.

Figure 29: Opinions on bottlenecks in Combined Transport



Source: BSL Transportation analysis based on survey.

Opinions on bottlenecks in Combined Transport differ widely among European operators, even if they agree in some respects:

- More than 75% of the survey participants are of the opinion that both last mile transport and rail infrastructure capacities limit the success of CT.
- CT-market players are unanimous in their views on last mile costs.
- 6% of stakeholders strongly disagree with the insufficient capacitites of train path for CT trains, which is a source of controversy among them.
- Another limiting factor, agreed by 75% of respondents, is the interoperability of railway infrastructures in Europe. Especially in less developed countries, the quality differs from that of most Western countries like France, Belgium, or Germany.
- Further limitations faced by a large number of participants can be found in the service sector: Two thirds criticise the lack of operational service quality and still 60% see limitations in the lack of guarantees for service levels.

In some cases, the opinions of the operators differ widely: lack of terminal capacity, maintenance of rail infrastructure and operational data, non-harmonised terms and conditions for rail access and constraints on loading gauges.Although there is a large consensus on a number of bottlenecks, some with a higher percentage cannot find an echo in their daily activities or do not have an opinion on them. There seems to be a strong controversy in the market on the bottleneck “Lack of empties”: while still more than 40% of respondents think that it is important, almost 30% disagree. In the area of “open-access terminals”, the result is clearer: a larger number of operators do not see any bottlenecks here.

Finding a universal solution that removes all bottlenecks is a challenge - in fact impossible. Hence, the identified bottlenecks must be considered separately or by categorising them based on their occurrence. This will help to find suitable starting points for solutions within each category.

- **Rail**: Improving interoperability between European countries through standardised elements of railway systems, implementation of digital solutions to increase volumes and data quality.
- **Road**: Reducing the distance covered by road (also by increasing the number of CT terminals), governmental support to reduce the high costs of the last mile, removing barriers to the last mile transport in CT.
- **Terminal**: Increase CT capacities by building new terminals or expanding the capacities of existing terminals, improving information, processes and quality, e.g. through digitalisation.
- **Regulations**: Adaptation and harmonisation of the conditions in all European countries, minimisation of the bureaucratic burden related to CT processes, support from the CT Directive e.g. standardisation, road regulation based on external costs.

The European Union has been working for years on improving the freight transport sector. Different support projects have therefore been introduced. One of them is the TEN-T network, which was introduced in 1996. Its aim is to create a coherent, interconnected and interoperable transport network throughout Europe by providing financial support to selected projects. The ultimate expectation is the emergence of an integrated and green European transport system. The following website sums up all rail transport-related projects that have been implemented since the start of the TEN-T network.

https://ec.europa.eu/inea/en/ten-t/ten-t-projects/projects-by-transport-mode/rail

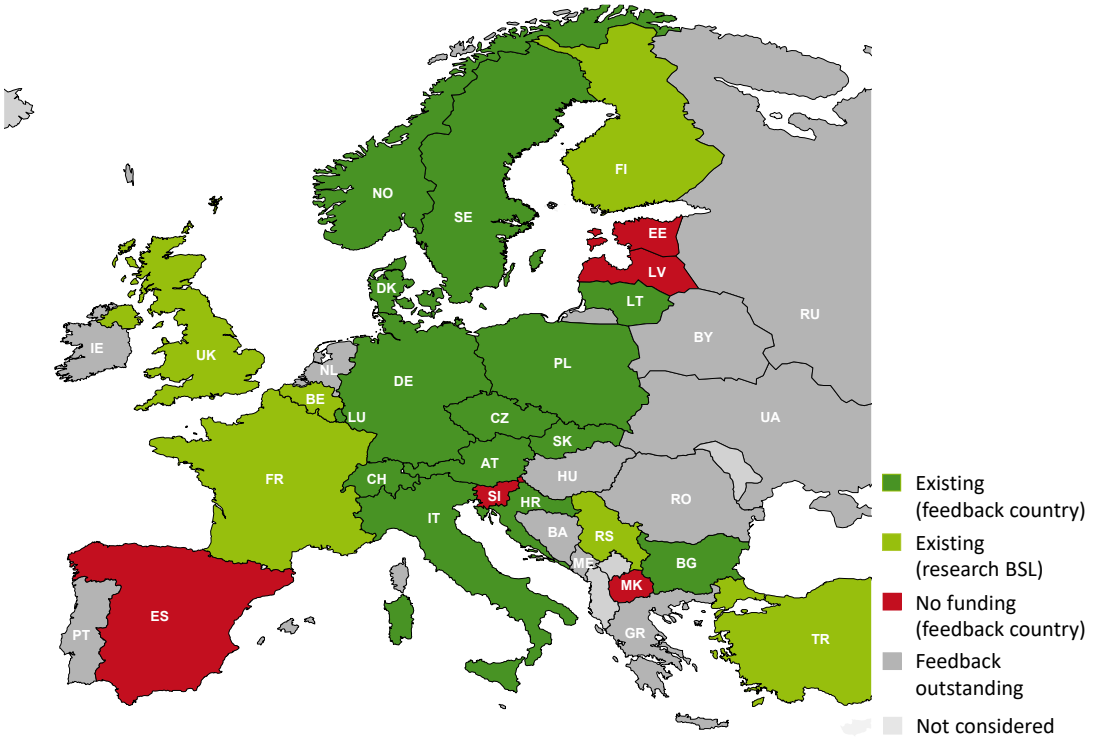
It is not only important to focus on the variety of projects all over Europe but also on the efficiency and effectiveness of connecting all processes in CT. In order to create a smoothly functioning transport system, all parties involved in the value chain must work together, and not at cross-purposes, to ensure the flow of information, goods and people. Only when interconnectedness is guaranteed the system can function in such a way that all processes run smoothly.

Support programmes and their success at member state level

Combined Transport is an important pillar for reaching the EU's policy goals towards a more eco-friendly, sustainable and efficient freight transport in Europe. In the past, a variety of national measures have been created in addition to the existing cross-border initiatives at EU level. This report provides an overview of the current national programmes to support Combined Transport and includes an updated analysis of the national measures in favour of CT provided in the 2018 report edition.

Because of the inconsistent information on the current status of CT, the types of measures, political objectives, funding volumes, responsibilities and requirements, periods of validity, publication and marketing, it is challenging to present a qualitative overview on the whole range of national CT programmes. As there is no common up-to-date database on national CT measures in Europe and worldwide, the responsible ministries, authorities, and institutions of 36 European and 4 other countries were contacted individually. This analysis was based on feedback from 18 countries, additional desk research and information on programmes from the last edition of the report. Based on the findings, the following map (Figure 30) was illustrated.

Figure 30: Overview of countries with current national CT funding measures



Source: BSL Transportation analysis based on feedback of national authorities and BSL market research.

A detailed overview of relevant national funding programmes for CT in Europe can be found in the annex. It contains information on the following points:

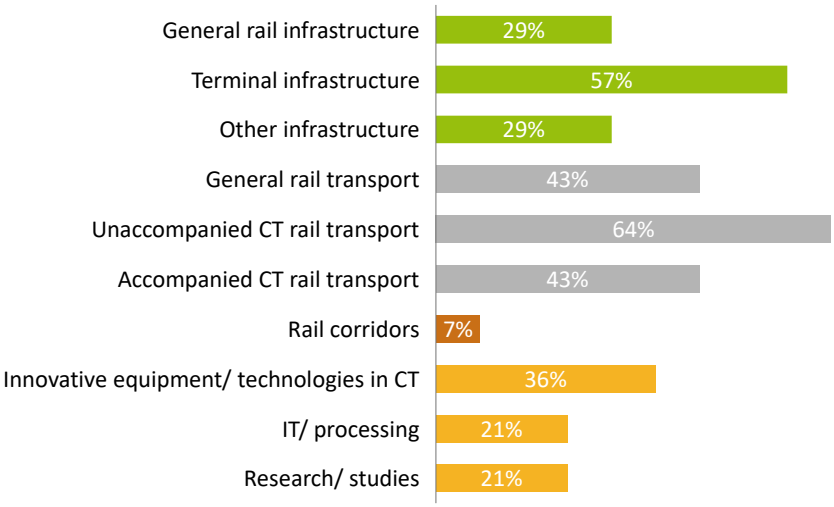
- Country and name of national programme,
- Conditions/duration of the programme,
- Scope of funding (Combined Transport by rail, Combined Transport in general, other form of Combined Transport),
- Classification,
- Funding sector (operational measures, infrastructure measures, rolling stock, intermodal loading units/ ILUs, research, fiscal support), and
- Type of measure (e.g. direct grand, tax allowance, regulatory measure, soft loan).

While compared to the 2018 analysis, many national funding programmes were continued (e.g. Germany, Austria, or Switzerland), others were newly initiated: (1) Slovakia newly established CT programmes and (2) Lithuania, which mentioned that funding programmes for CT are offered.

Nearly 48% of the national support programmes for Combined Transport focus on CT only (not on all rail freight). 52% support the general rail sector including Combined Transport. The objectives of the funding programmes in Europe are diverse. Of the existing programmes, 95% are granted directly, while only 5% offer tax allowance.

The classification of the support programmes illustrates the variety of areas in which the programmes can be used. While nearly one third of all support programmes are oriented towards rail or other infrastructure, almost 60% focus on the promotion of the terminal infrastructure. In addition, a large share of more than two thirds can be used in unaccompanied, while only 43% can be used in accompanied Combined Transport or general rail transport.

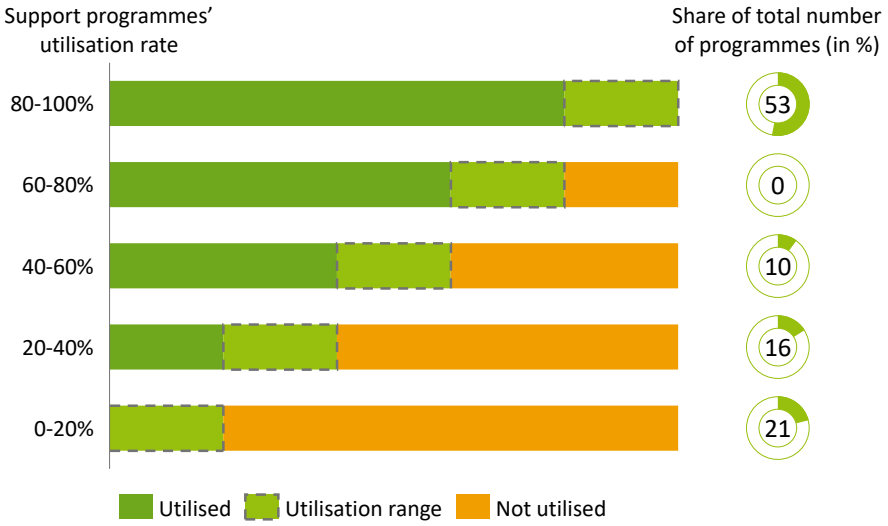
Figure 31: Classification of current support programmes for CT



Note: Multiple answers were possible.
Source: BSL Transportation analysis based on survey.

The use of the budgets of existing CT programmes varies widely. On the one hand, around 53% of the programmes show high utilisation rates of over 80%. On the other hand, approx. 21% of the programmes' budgets are only used up to 20%.

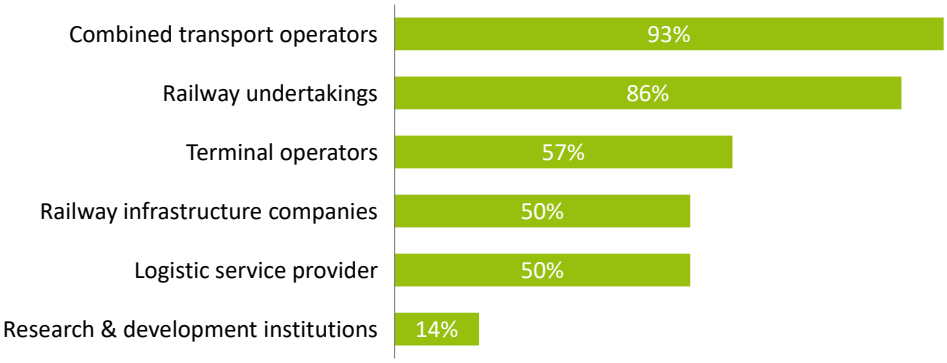
Figure 32: Utilisation rate of CT programmes' budget



Source: BSL Transportation analysis based on survey.

The support programmes are aimed at a large number of different target groups. While more than 90% of programmes aim at supporting Combined Transport operators, 86% still support railway undertakings, but only 14% focus on research and development institutes.

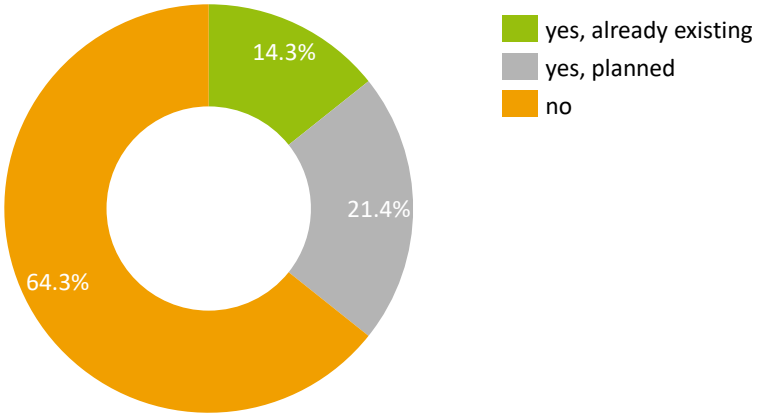
Figure 33: Target groups of current support programmes in Europe



Source: BSL Transportation analysis based on survey.

The corona-crisis not only had a strong influence on the players in the CT sectors but also had a minor impact on state support. Although 64.3% of countries do not offer further support aimed at helping companies through the crisis, more than 14.3% have already implemented new support programmes. Another 21.4% plan to do so.

Figure 34: Implementation of corona-driven support programmes among countries

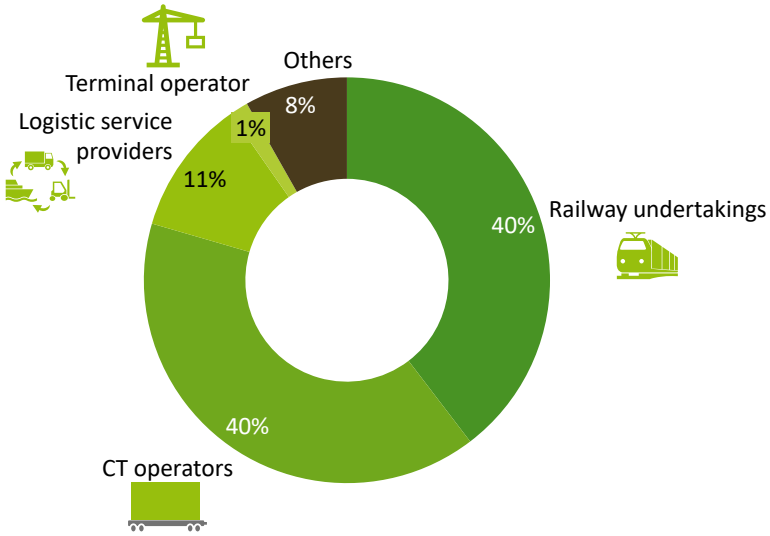


Source: BSL Transportation analysis based on survey.

Key operators of CT in Europe

The key players of European's Combined Transport market are specialised CT Operators and the incumbent state-owned Railway Undertakings of the European countries. These two types of business models account for nearly 80% of the CT-market on the basis of TEU-volumes (Figure 35).

Figure 35: CT business models and its market shares

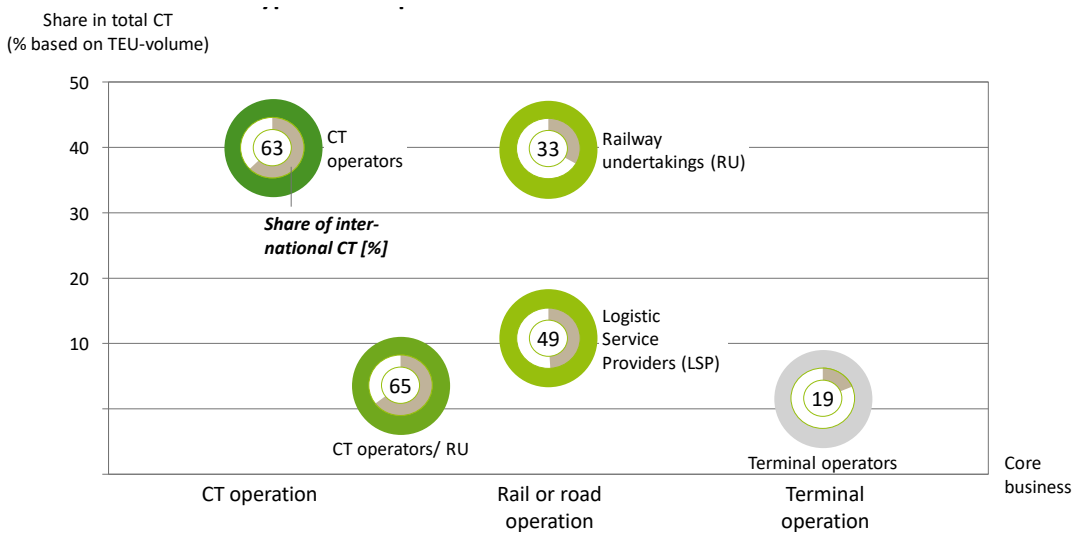


Note: Railway undertakings include incumbent and private companies.
Source: BSL Transportation analysis based on survey.

Many of the companies belonging to the business model type 'Railway undertakings' or 'CT operators' are (partly) state owned companies. The incumbent railway undertakings are predominantly state-owned. Some of the major European CT operators are companies with several stakeholders, including joint ventures between railway companies and logistics service providers.

A closer analysis of the business models in Figure 36 shows that rail and road operators have a CT market share of approx. 50% in total.

Figure 36: Business model structure in CT sector incl. share of international CT



Source: BSL Transportation analysis based on survey.

The different types of business models differ considerably in their share of domestic and international Combined Transport. Due to their predominantly public ownership, the Railway companies concentrate on domestic CT with an international CT-share of 33%, while LSP achieved an almost balanced ratio between domestic and international Combined Transport. CT operators have a stronger focus on international transport with 63%.

Advantages and disadvantages of CT in comparison to single-mode transport

The previous chapters already outlined general information on Combined Transport and defined its main characteristics. To complete the general framework, the advantages and disadvantages are compared below (Figure 37). This will not only help illustrate what can be achieved through the application of CT but also draw attention to challenges that might need to be addressed.

Figure 37: Advantages and disadvantages of Combined Transport

	Economical	Environmental	Social	Modal
+	■ Planning is easier due to fixed journey times ■ Less road congestion ■ Productivity through higher capacities on long distances ■ Less wear on equipment	■ Savings on fuel/ non-regenerative energies ■ Reduction of emissions ■ Less air pollution ■ Higher energy efficiency ■ Less external costs	■ Improved road safety ■ Less noise ■ Reduction of climatic changes	■ Safer transport ■ Legal benefits e.g. exemption from traffic bans ■ More equal spread of modal split ■ Increasing automation
−	■ Extensive coordination needed ■ Lower flexibility due to fixed journey times ■ Lack of reliability leads to economic losses ■ Slow (CT is focused on reducing costs)	■ Still low energy efficiency and higher emissions on road leg	■ Higher selective noise (especially terminals)	■ Reliable on all transportation modes ■ Cost- and time-intensive handling processes ■ Network density not comparable to road ■ Bottlenecks at terminals

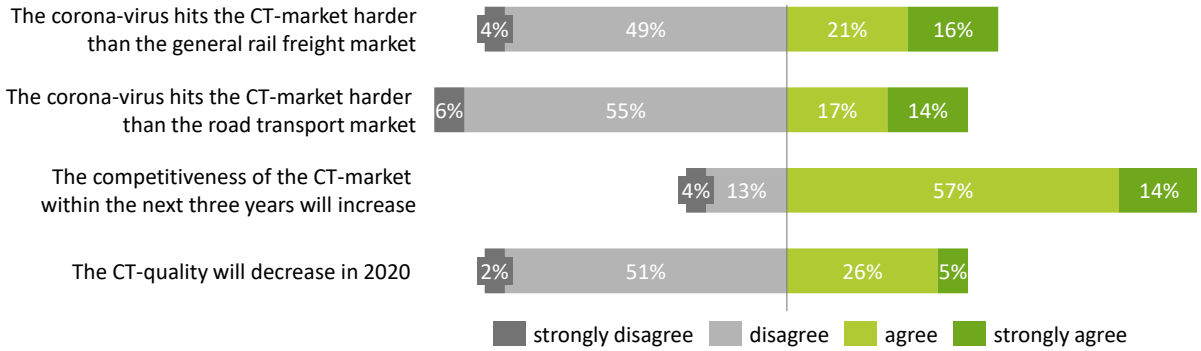
Note: See UIRR for additional information (http://www.uirr.com/en/road-rail-ct/advantages.html).
Source: BSL Transportation analysis, UIRR.

The table shows that a number of advantages arise from the use of CT. Especially from an environmental perspective, CT is to be regarded as a valid alternative to road transport in a society that highly values the environment that they live in. Nonetheless, there is still a potential to further increase the usability of CT for freight transport, which can be derived from the disadvantages illustrated above. In particular, the sector needs further improvements regarding the velocity and liability of its processes.

Impact of the coronavirus (COVID-19) on CT in Europe

The emergence of the coronavirus at the end of 2019 has already had a strong impact on Europe and especially its economy. As the transport sector is strongly influenced by economic factors, it must cope with various challenges that have arisen as a result. Figure 38 displays the opinions of CT providers from the survey conducted on this topic.

Figure 38: Opinions on the impact of the coronavirus in CT



Source: BSL Transportation analysis based on survey.

It shows that the opinions of CT providers in Europe on this topic differ, but in each of the fields covered, around 50% have the same view of the effects of the coronavirus on their business: Even if the coronavirus hits the Combined Transport market - but less hard than general rail freight or road transport market, the competitiveness of the CT market should increase in the long run.

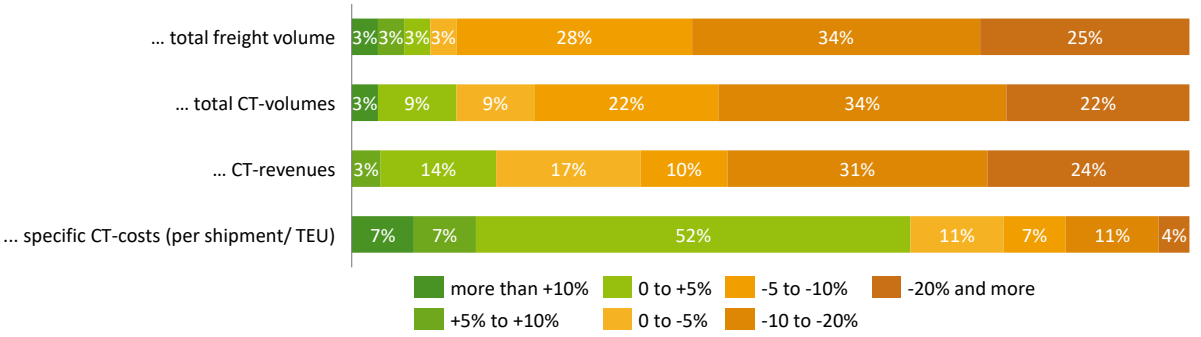
In the short run, CT providers expect a strong impact on their business performance indicators. The following figure shows that in most companies a decline in the overall performance including total freight volumes, CT volumes and CT revenues is expected. Only a small percentage is of the opinion that the virus will help their business in 2020. Besides decreasing volumes and revenues, CT providers also foresee increasing specific CT costs, which they will have to deal with in 2020.

Figure 39: Expected impact of the coronavirus on … (in 2020)

Source: BSL Transportation analysis based on survey.

For the year 2021 the expected negative impact of the coronavirus starts to decrease. The survey shows that, despite the crisis in 2020, more CT stakeholders estimate an increase in their overall business performance in terms of volumes and revenues.

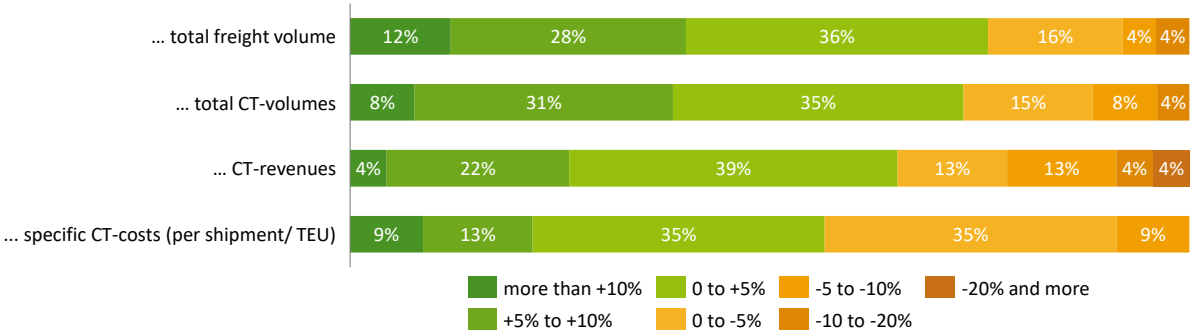
Figure 40: Expected impact of the coronavirus on … (in 2021)



Source: BSL Transportation analysis based on survey.

Figure 41 shows that the expected negative impact of the coronavirus declines even more after 2022. At this point in time, more than 75% of the CT providers expect a growth in their total freight as well as their CT-volumes. Furthermore, 70% of them foresee a growth in the revenues generated by CT-services.

Figure 41: Expected impact of the coronavirus on … (average from 2022 to 2024)



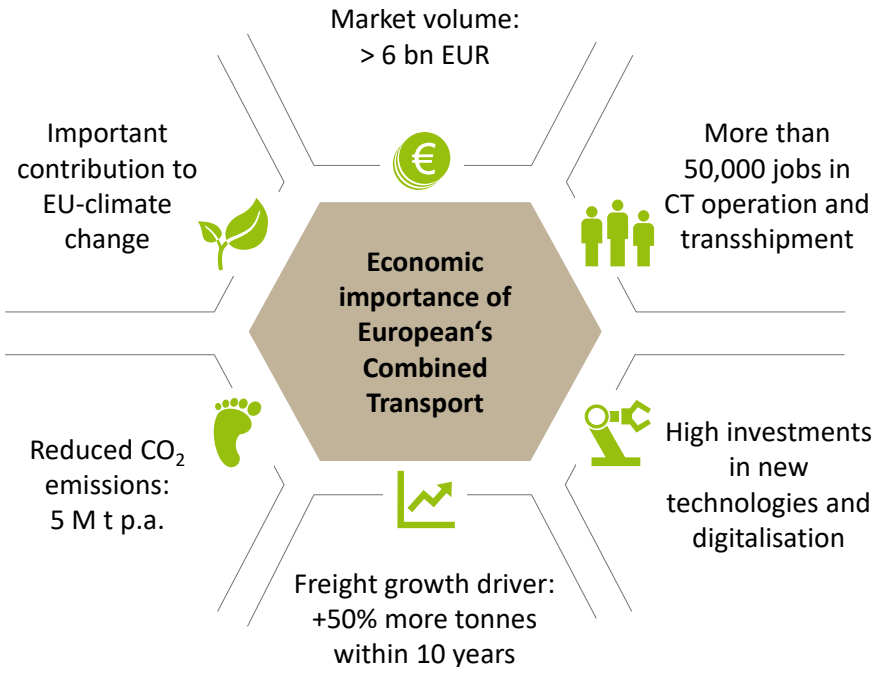
Source: BSL Transportation analysis based on survey.

Economic importance of the CT sector

Combined Transport is an important component of the economic success of Europe for several reasons. Both macro- and microeconomic aspects can influence the overall situation of CT and its success.

With the continuous growth of the CT sector over the last decades, the market volume has increased to an industry-wide high level, currently employing more than 50,000 people in operations and transhipment, and promoting innovation through high economical investments in new technologies and digitalisation. Besides, the CT sectors contributes to the economic objectives of the 30by2030 initiative by reducing emissions. The different facets of the macroeconomic impact are presented below (Figure 42).

Figure 42: Macroeconomic impact of the Combined Transport sector

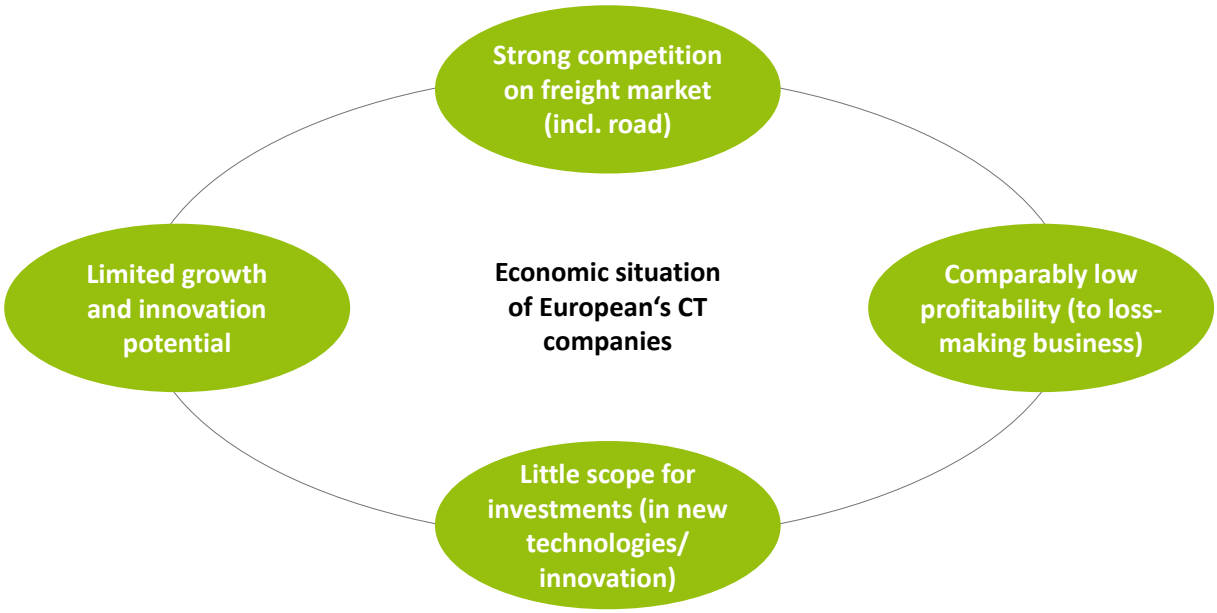


Source: BSL Transportation analysis; German Ministry of transport and digital infrastructure.

Moreover, CT business is a crucial prerequisite for economic, social, and environmental development. A noticeable growth of the rail freight market and an environmentally friendly freight transport will only be possible with the dynamic structure of the Combined Transport sector.

The microeconomic view of the CT business and its companies is more sobering. Although the CT sector is a growth market, the competition is fierce, particularly with pure road transportation, especially on long-haul distance (Figure 43). As a result, the margins for the CT actors are extremely tight: the net profit margin of CT companies is often below 1.5%, and, for some undertakings it is even a loss-making business with little potential for innovation.

Figure 43: CT-companies' economic situation



Source: BSL Transportation analysis.

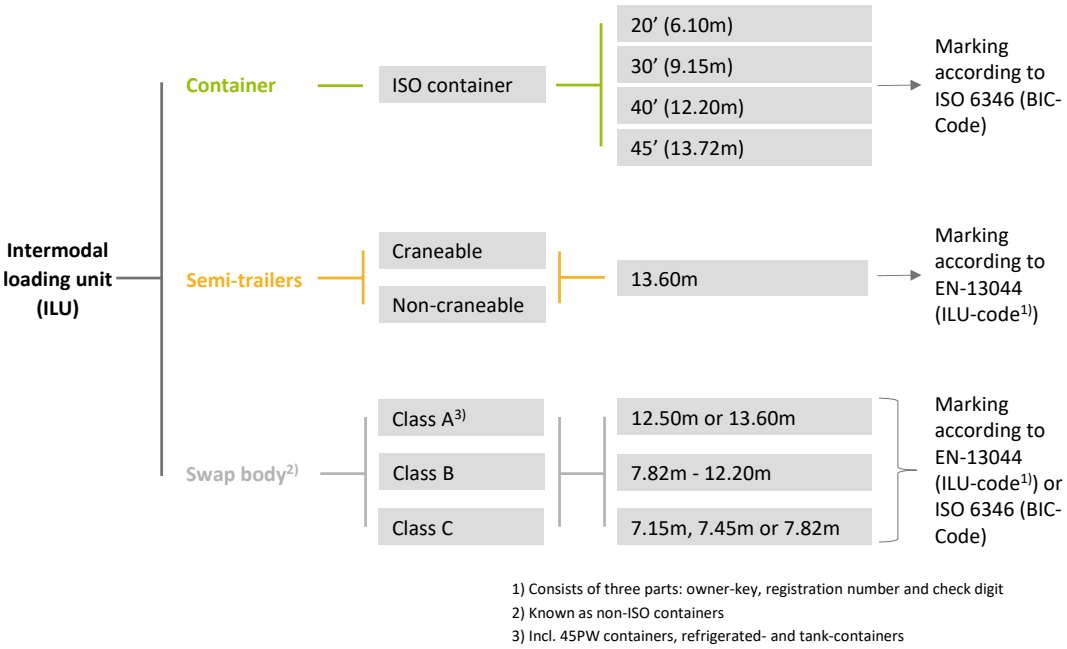
Spotlight analysis

Analysis of the intermodal loading unit (ILU) fleet in the EU

Combined Transport requires adapted assets such as wagons, handling devices and intermodal loading units. ILUs can be shipped by several different transport modes and are specially designed and tested for vertical loading onto special wagons designed to run at speeds of over 100 kph.

The ILUs can be classified in three different categories: ISO-containers which are regulated by the technical ISO standards, semi-trailers and swap bodies, standardised by EN standards or by UIR IRS. ILUs can also be further categorised according to their dimensions, as shown below (Figure 44).

Figure 44: Classification of intermodal loading units (ILU) for unaccompanied CT

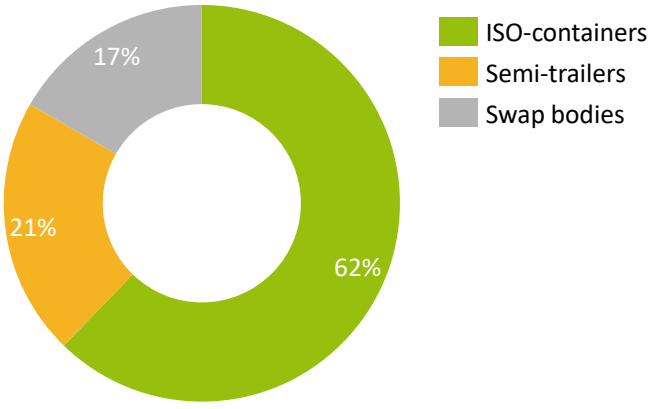


1) Consists of three parts: owner-key, registration number and check digit
2) Known as non-ISO containers
3) Incl. 45PW containers, refrigerated- and tank-containers

Source: UIRR.

On the European CT market, the use of ILUs shows a strong tendency towards ISO-containers, which account for almost two thirds of the whole market. The remaining market shares are split almost equally between semi-trailers (21%) and swap bodies (17%) as shown below (Figure 45).

Figure 45: Distribution of ILU-types' use in CT

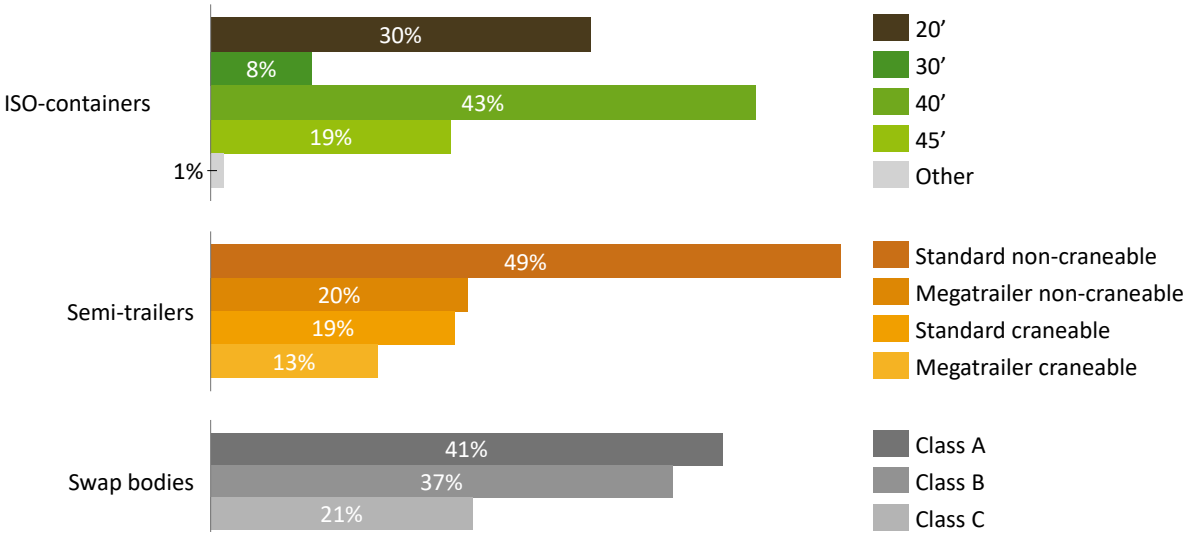


Source: BSL Transportation analysis; CESAR data base.

Currently, the structure of European CT market includes all types of ILUs as classified in Figure 46.

- In the ISO-container category, the 40’ version is the most common unit, followed by the 20’ containers. In third place are the large 45’ containers, still accounting for almost one fifth of all ISO-containers. Far behind the come the 30’ containers, that make up only a share of 8%.

Figure 46: Structure of current ILUs in European CT (based on market experts’ estimate)



Note: Rounding differences may occur.
Source: BSL Transportation analysis; ILU-workshop, 2020.

- For semi-trailers and their four types identified, it is clear that especially craneable semi-trailers are heavily utilised in CT (30% in total). Nevertheless, approx. 70% of all semi-trailers are still non-craneable, most of which are standard non-craneable semi-trailers.
- When looking at swap bodies, classes A and B are often used in CT and make up nearly 80% of all swap bodies used in this type of transport, with a slight tendency towards class A. The remaining 21% are class C swap bodies.

The assessment of stakeholders as a result of the ILU-workshop illustrated in Table 5 has shown that the average technical lifetime of semi-trailers and swap bodies is much shorter than that of containers. Furthermore, the average age compared to the average technical lifetime has been assessed at about 50% for containers and between 70% and 75% for semi-trailers and swap bodies.

Table 5: Average technical transport lifetime and average age of ILUs

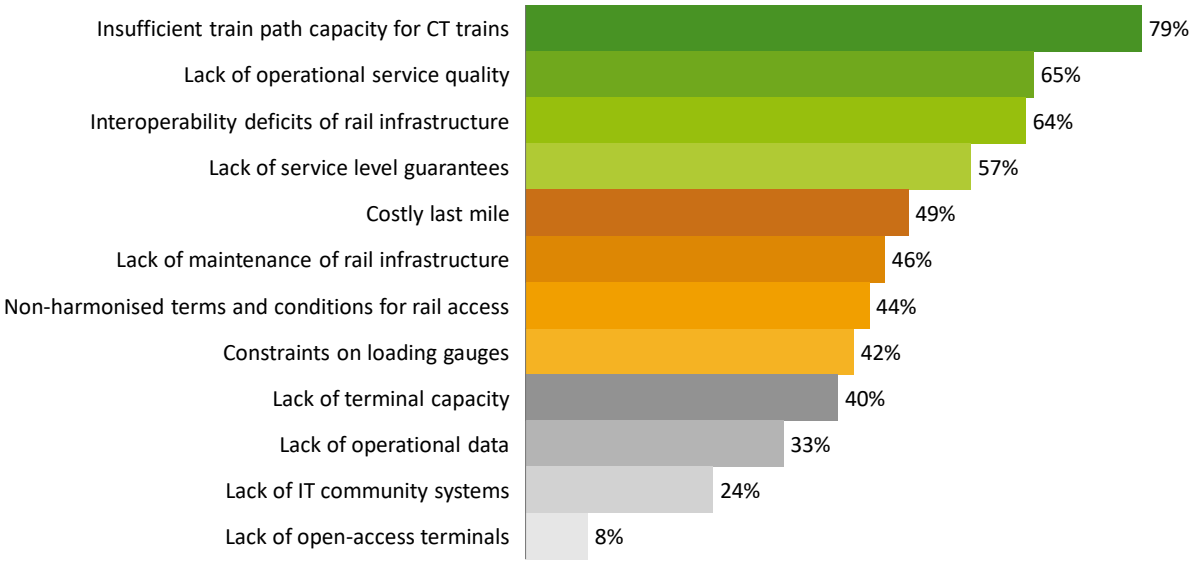
Type of ILU	Average technical lifetime [in years]	Average age [in years]
ISO-container	17.8	9.3
Semi-trailers	10.0	7.4
Swap bodies	10.7	7.6

Note: Technical lifetime may deviate significanty, e.g. certain types of containers can have a lifetime of 30 years.
Source: BSL Transportation analysis; ILU-workshop, 2020.

Due to the higher average age of semi-trailers and swap bodies, investment in new units is likely to rise in the next years.

The current and future use of ILUs is restricted by different bottlenecks in various areas that have already been mentioned for the general CT-market in the chapter “Key bottlenecks for Combined Transport“. For the development and attractiveness of the ILU-market, infrastructural and operational constraints have been named as the main obstacles as shown below (Figure 47). Compared with the results from all CT market players, only minor differences can be observed, while the majority of bottlenecks are rated in the same way. The bottlenecks that are of high importance can help to derive the direction for further investment decisions.

Figure 47: Key bottlenecks for future ILU market development and investment decisions



Source: BSL Transportation analysis; ILU-workshop, 2020.

The future market structure of ILUs in the CT market is assessed differently by the players in CT that took part in the survey:

- For **containers**, most players expect an increasing standardisation along with a decreasing number of types,
- When focusing on **semi-trailers**, the picture looks very different. There is a very high percentage that expects a more specific differentiation of the existing types of semi-trailers, and
- For **swap bodies**, the participants expressed an indifferent opinion fluctuating between more specific differentiation and increasing standardisation.

Overall, a strong positive development of almost all ILU types is expected within the next decade, as expressed by key actors (manufacturers and users) at the ILU-workshop (Table 6).

Table 6: Development of ILU types until 2030

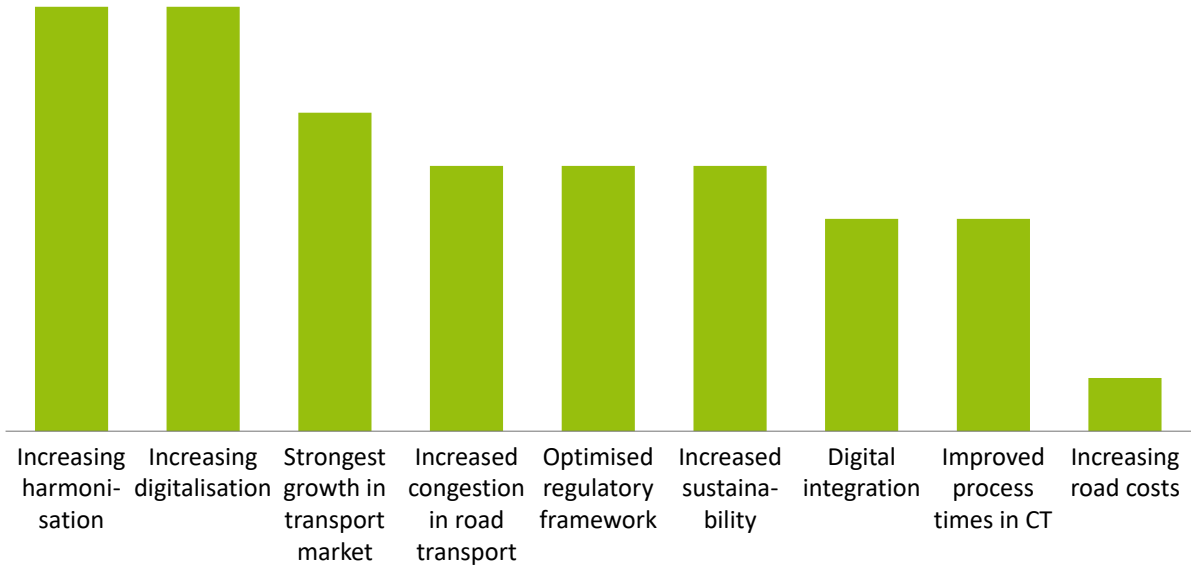
ILU type		Development until 2030[1)]
Containers	20‘ - 6.10m	+1.1%
	30‘ - 9.15m	-2.0 %
	40‘ - 12.20m	+3.7 %
	45‘ - 13.60m	+6.6%
	Other	+1.1%
Semi-trailers	Standard cranable	+3.4%
	Megatrailer cranable	+4.4%
	Standard non-cranable	+3.1%
	Megatrailer non-cranable	+2.6%
	Other	+0,4%
Swap bodies (or non-ISO containers)	Class A	+4.7%
	Class B	-0,7%
	Class C	+1.0%
	Other	+1.6%
Other	Other ILU-types	+1.0%

Source: BSL Transportation analysis; ILU-workshop, 2020.

Especially the longest and volume-optimised ILUs of each category, such as 45’ containers (+6.6%), craneable megatrailers (+4.4%) and class A swap bodies (+4.7%) are expected to develop very well. In comparison, medium-sized units such as the 30’ containers (-2.0%) and class B swap bodies (-0.7%) are expected to decline by 2030. Short units have remained comparably constant with low growth rates of around 1.0% (e.g. 20’ container or Class C swap body).

The need for an improved standardisation environment for the use of ILUs is considered as an important topic in future CT. Besides, digitalisation-related topics, harmonised structures and simplified booking processes were rated as highly relevant for the future development of ILUs- as the following figure (Figure 48) shows.

Figure 48: Topics in future ILU-development (structured by relevance for the stakeholders)

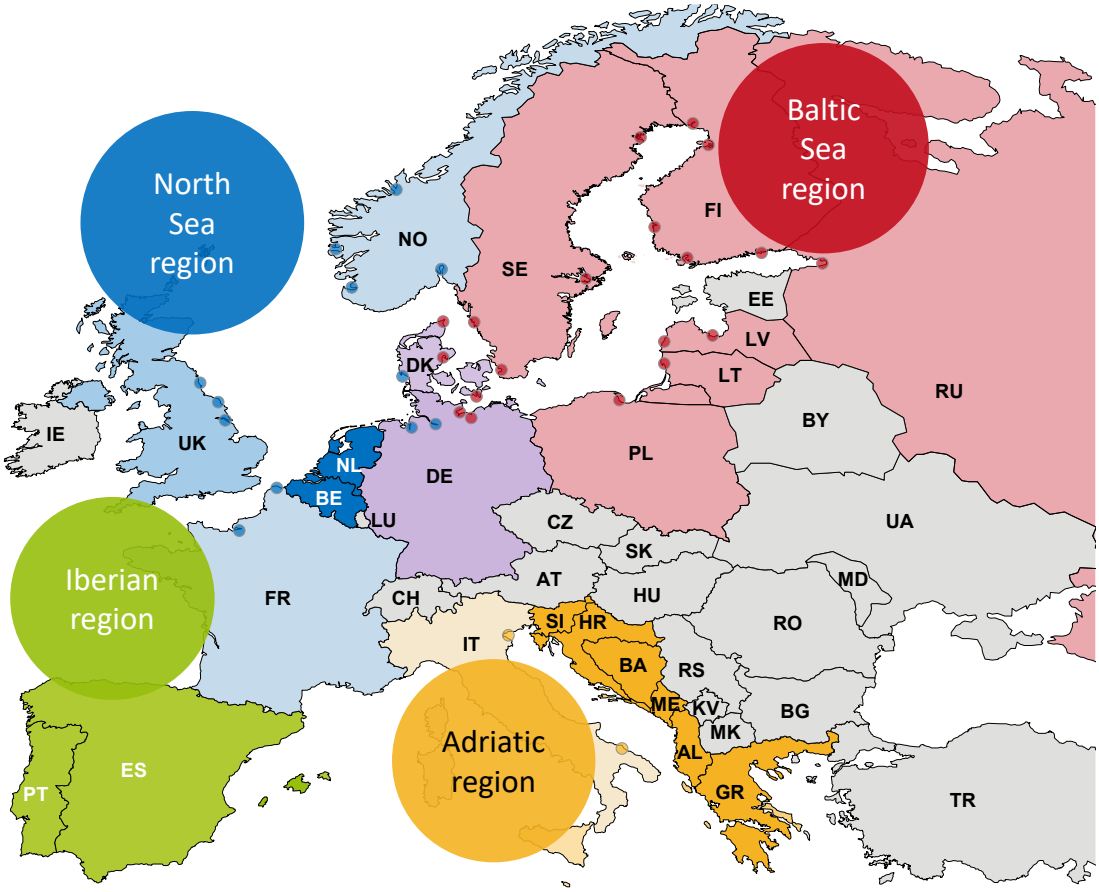


Source: BSL Transportation analysis; ILU-workshop, 2020.

Regional approach of the Combined Transport market in Europe

In addition to the analysis of the seaport activities and traffic segmentation for selected ports in the previous Report on Combined Transport in Europe, this report has mapped the regional approach of the CT market.The regional approach of Combined Transport has been structured in around four different areas closely linked with seaports and continental terminals: 1) North-Sea region, (2) Iberian region, (3) Baltic-Sea region and Adriatic region (Figure 49). In contrast to the analysis of the Iberian region, where all relevant terminals in Portugal and Spain were examined, the analysis of the North Sea and the Baltic Sea regions focuses predominantly on the deep-sea terminals. In the case of the Adriatic region, the Italian terminals with a connection to sea ports and all relevant terminals in the Eastern Adriatic coastal states were considered.

Figure 49: Selected areas for the regional approach of the Combined Transport market



Note: Denmark and Germany are included in the Baltic Sea as well as the North Sea region.
Source: BSL Transportation analysis; CESAR data base.

All regions that were selected for the analysis have their own characteristics and challenges, which have been consolidated in Figure 50. While the Iberian region is somewhat more independent due to its geographic circumstances and different track gauge, the North Sea region includes the major ports of the north range with a high port density and large freight volumes. The Baltic Sea region includes many countries with a high rail share in overall freight transport and facilitates the link between Western and Eastern Europe. The Adriatic region also serves many countries with a rather limited rail connectivity to Western Europe and other countries.

Figure 50: Specific characteristics of the selected regions

North Sea Region
- Focus on major European ports
- Highest volume of all considered regions
- High density of CT terminals (all types) on the blue banana corridor

Baltic Sea Region
- Several ports (with increasing volumes)
- Different track gauges within the region
- Interoperability for the modal shift of semi-trailers electrification needed
- Rail share in total freight volume and intermodal share in rail freight is very different between the countries

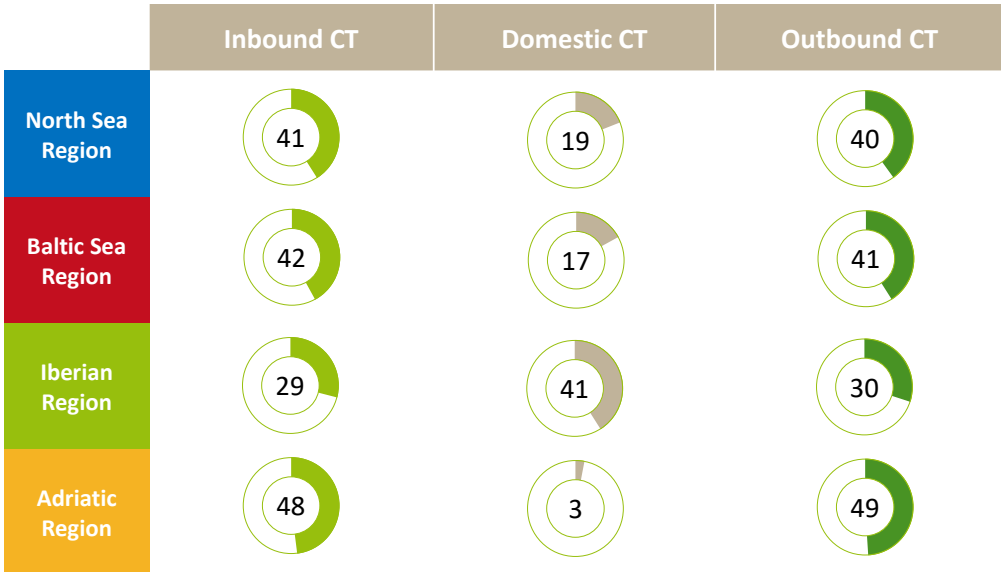
Iberian Region
- Geographical circumstances enable the Iberian region to act as an independent territory
- Specific track gauge in Portugal and Spain, which is different to other Western European countries

Adriatic Region
- Lowest share of inbound and outbound transport from/ to terminals assigned to any of the four defined regions
- Comparably low road prices

Source: BSL Transportation analysis.

The Combined Transport activities of all relevant seaports and countries shown in Figure 49 were analysed. On average, in- and outbound traffic is evenly distributed and accounts for more than 80% of the total traffic (Figure 51). This share is also representative for the Adriatic and the Baltic regions. In the Iberian region, the domestic share is disproportionately higher than in the other regions, but still well below 50%. In the North Sea region, which has by far the largest CT volume, the in- and outbound CT volumes exceed 95% of the total CT traffic.

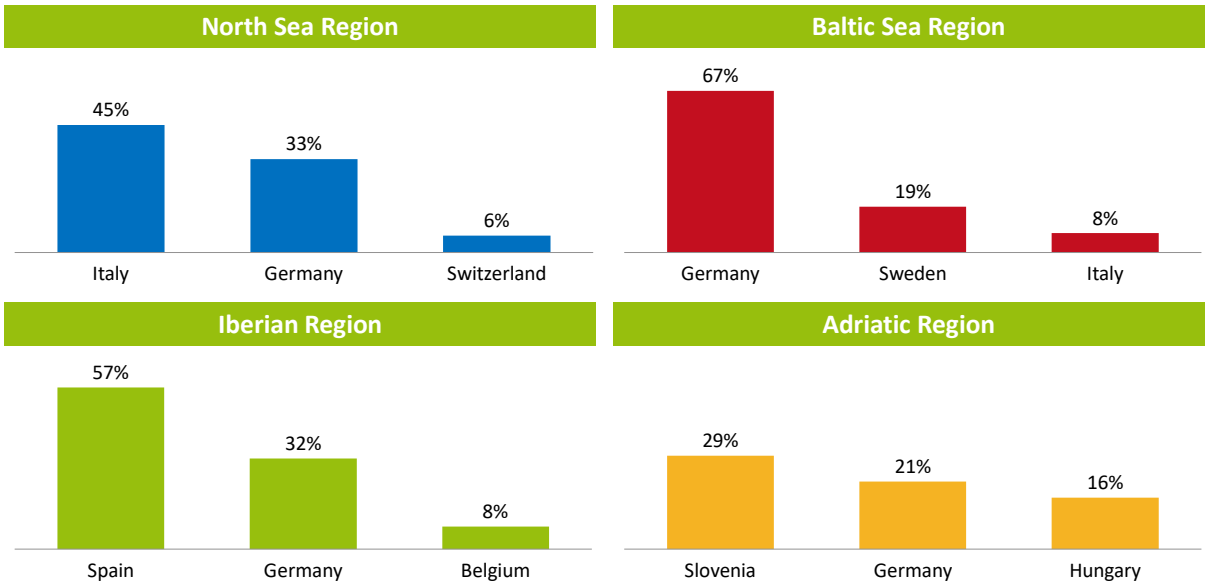
Figure 51: CT-volume distribution (in%)



Source: BSL Transportation analysis; CESAR data base.

As trade relations between countries vary, the traffic of each region varies. While in the Baltic Sea most traffic goes to Germany, in the North Sea region Italy is the main destination, whereas in the Adriatic region trade is split between several countries, with each country having a small share of no more than 30%. In the Iberian region, neary 60% of all transport destinations are located in Spain.

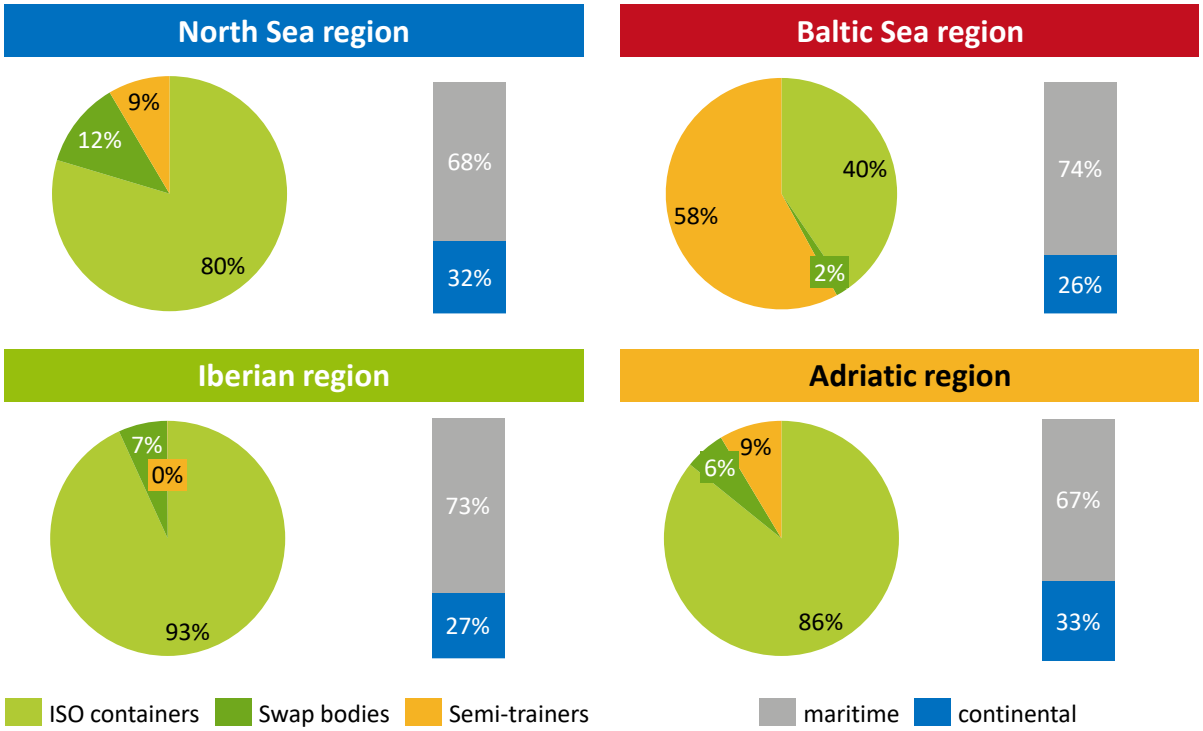
Figure 52: TOP 3 destinations of CT-traffic in the different regions



Source: BSL Transportation analysis; CESAR data base.

In accordance with the spotlight analysis on the ILUs, the ISO-container is the dominating ILU-type (Figure 53). Nevertheless, the specific unit-mix per region is different. In the Baltic Sea region especially, the composition within the transport chain differs from the one in other regions. The predominant ILU-type in the Baltic Region is the semi-trailer (58%). In contrast, the share of semi-trailers is below 1% in the Iberian region.

Figure 53: CT structure regarding used units and transport chain



Note: Maritime CT means starting point is a port terminal, continental CT starts at continental terminals.
Source: BSL Transportation analysis; CESAR data base.

While the composition varies as mentioned above, the structure of maritime and continental transports is almost identical in all regions, with 68% to 74% of maritime and up to one third of continental services.

CT Terminal Analysis

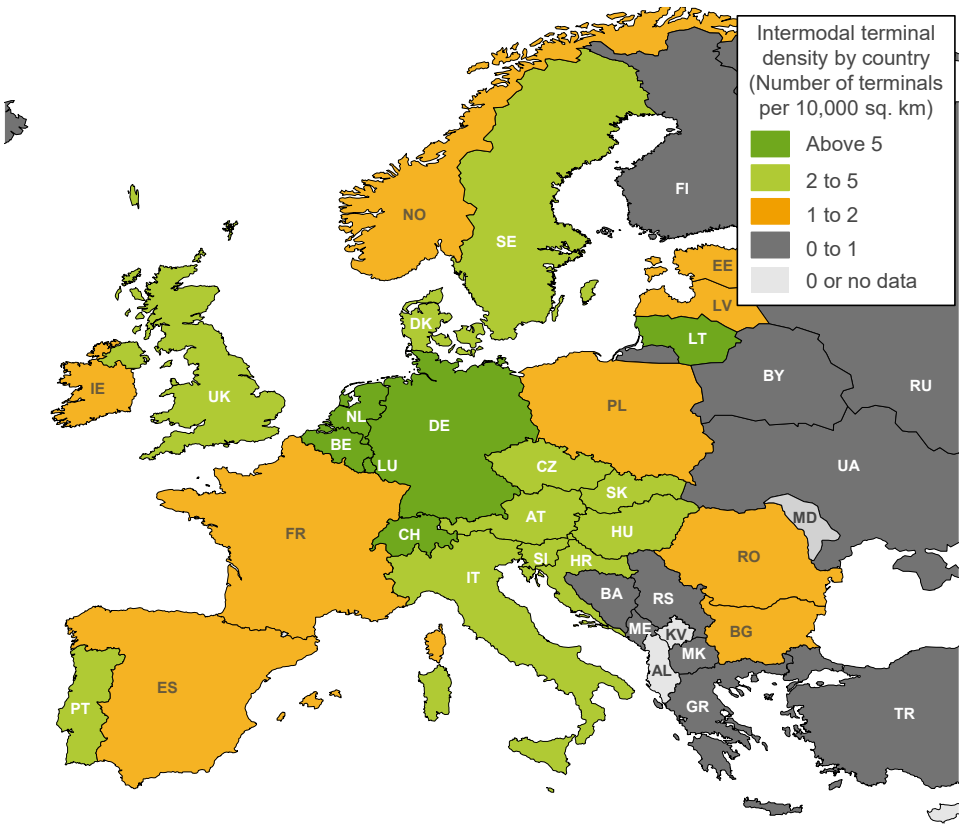
Introduction

Combined Transport (CT) terminals play an essential role in the development of all forms of combined transport (road, rail and inland waterway). They can be defined as “service facilities for the transhipment of standardized loading units (containers, swap bodies, semi-trailers), where at least one of the modes served must be rail or inland waterway”. The following chapters of the present report will place the emphasis on the facilities serving Road-Rail CT.

This practical description is based on the fundamental definitions of `freight terminal´ and `combined transport´ and compensates for the fact that neither the Implementing Regulation (EU) 2177/2017 on access to service facilities and rail-related services nor the founding Directive 2012/34/EU establishing the European railway area provide a specific explanation for freight terminals. According to Regulation (EU) 1315/2013 (“TEN-T Regulation”) Art 3 s), “freight terminal’ means a structure equipped for transhipment between at least two transport modes or between two different rail systems, and for temporary storage of freight, such as ports, inland ports, airports and rail-road terminals”. Council Directive 92/106/EEC (“CT Directive”) defines as follows: “‘Combined transport’ means the transport of goods between Member States where the lorry, trailer, semi-trailer, with or without tractor unit, swap body or container of 20 feet or more uses the road on the initial or final leg of the journey over limited distances”.

The 1.204 CT terminals in Europe provide access to the CT networks.4 Their density and capacity determine the performance of the network, which is a key factor for CT opportunities and market share. The CT terminal network in the European countries is very diverse, reflecting the different economic and spatial structures and market volumes of intermodal transport. While the density is high in the countries located in the heart of Western Europe, which have a key function as transport hubs, such as Belgium, Germany and the Netherlands, it may be lower - but still above average - in countries that are part of the main intermodal transport trade routes such as Austria, Italy and Sweden.

Figure 54: Terminal density in European countries



Country	No of CT terminals
Austria	23
Belarus	20
Belgium	44
Bulgaria	13
Croatia	15
Czech Republic	22
Denmark	11
Estonia	7
Finland	19
France	101
Georgia	1
Germany	214
Greece	7
Hungary	23
Ireland	7
Italy	76
Kasachstan	1
Latvia	6
Lithuania	7
Luxembourg	2
Moldova	1
Montenegro	1
North Macedonia	2
Norway	34
Poland	44
Portugal	28
Romania	28
Russia	104
Serbia	7
Slovakia	18
Slovenia	5
Spain	51
Sweden	92
Switzerland	50
The Netherlands	30
Turkey	13
Ukraine	19
United Kingdom	58
TOTAL	1,204

Source: Planco/ KombiConsult analysis based on data from the Rail Facilities Portal (RFP).

[4] See https://railfacilitiesportal.eu/.

The development of CT terminals consider the regional characteristics of CT markets and related requirements. The growth of the CT market leads to an increasing diversification of CT terminals in terms of market segments, size, value-added services and legal structures. In view of these developments, this spotlight analysis focuses on their role and outlines an elaborate categorisation methodology, which may facilitate the analysis of the networks by introducing a standardised best practice approach. This will contribute to a better understanding of the vital role of such terminals, to the promotion of their activities and to a better identification of trends when they are used periodically. A standardised approach to categorization, applied both to the overall European network of CT terminals and to the analysis of the infrastructure in a given region, will provide a solid basis for establishing an overview of the mix in CT terminals by using existing databases such as the Rail Facilities Portal (RFP) as a reliable source of information.5

The proposed categorisation - validated by a group of seven representative CT terminals6 - provides a better basis for strategic positioning and policy assessment when linked to the Commission Implementation Regulation (EU) 2177/2017 on access to service facilities and rail-related services. Consequently, this will strengthen the market position of CT and provide clear information and positive publicity on the importance of CT terminals; it may also facilitate the promotion of their services and the communication with authorities such as rail Regulatory bodies. In addition, it is a valuable contribution to the development of powerful lobbying strategies and to raise the awareness of policy makers. Overall, such a categorisation will strengthen the importance of CT on the market. Not only the CT terminal operators, but also all CT stakeholders, will benefit from this.

CT terminal categorisation

The categorization methodology developed provides a basis for an inventory classifying CT terminals by key characteristics, while market segment and size are regarded as the most important aspects for an analysis of their localization with respect to accessibility and capacity of CT in different regions.

These categories can be applied quite easily by using the underlying determinants of infrastructure as criteria, whereas other criteria such as traffic function and intermodal links have proved less practicable since they are not under the control of the terminal manager and may change over time. For a practicable approach, a limited number of classes were discussed, validated with industry experts and defined to characterise the terminals.

Categorisation by market segment

The categorisation in terms of market segment focuses on the equipment (type of loading units) handled. This determines the capability to serve selected market segments. First of all, as trade routes, maritime and continental flows are distinguished by the use of different equipment. Secondly, the technology applied is a relevant factor for the categorisation that distinguishes vertical from horizontal transhipment.

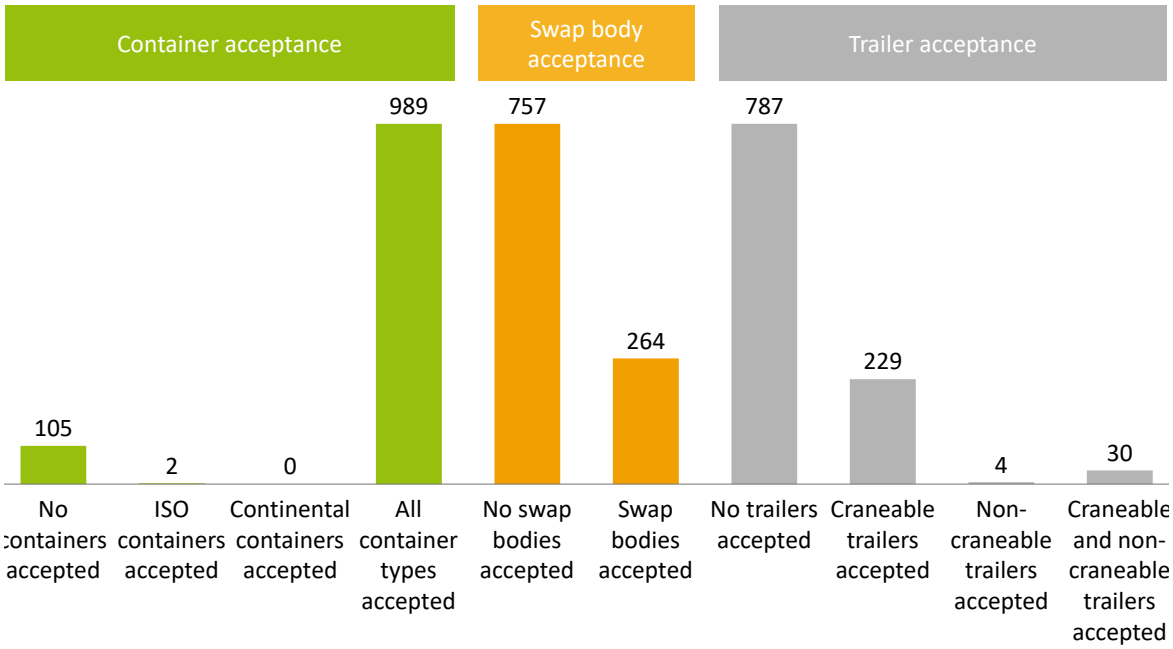
For the categorisation, typical mixed CT terminals serve maritime and continental services with vertical transhipment technology, such as Combinant Antwerp, DUSS-Terminal München-Riem, HUPAC Busto Arsizio-Gallarate, TCA Aschaffenburg, TIP Žilina, and Wien Süd CCT, which belong to this category and can be distinguished from the other ones offering both vertical and horizontal transhipment technology such as CFL Bettembourg-Dudelange.

90% of European CT terminals accept both ISO containers and continental containers. Only 25% of them accept swap bodies. Most facilities do not accept semi-trailers (75%) and only 0.3% accept non-craneable semi-trailers. A large proportion of the installations accepting swap bodies and semi-trailers are located in Germany and neighbouring countries, as well as in countries on the main trade routes using this equipment such as Sweden.

[5] See https://railfacilitiesportal.eu/. Portal under co-management of RailNetEurope (RNE) and UIRR since September 2020.

[6] Combinant Antwerp, Belgium; DUSS-Terminal München-Riem, Germany; HUPAC Busto Arsizio-Gallarate, Italy; TCA Aschaf-fenburg, Germany; Terminal Intermodal Bettembourg-Dudelange, Luxembourg; TIP Žilina, Slovak Republic; Wien Süd CCT, Austria.

Figure 55: Terminals' acceptance of intermodal loading units



Source: Planco/ KombiConsult analysis based on data from the Rail Facilities Portal (RFP).

Categorisation by size

Capacity is an indicator of supply that refers to the potential handling volumes of a CT terminal.7 It is essential for assessing the CT terminal network from a regional, national and European perspective. The categorisation is based on the published handling capacity and the main assets that determine its capacity. This ensures a standardised and robust approach to size categorisation based on the capacity figures and the capacity-determining characteristics of the terminal. Considering the various dimensions of capacity with transhipment and temporary storage as core services, the methodology covers (1) the length of the transhipment tracks, (2) the number of handling equipment and (3) the number of modules8 as transhipment-related parameters, taking into account the technology applied (vertical/horizontal). The size of the area as an additional parameter allows to consider the temporary storage capacity, which represents a significant part of the terminal area.

For the purpose of specifying class limits in terms of capacity, the theoretical handling capacity per year is calculated on the basis of available assets and an average number of operating hours per year, to be applied uniformly considering various types of equipment and market segments. For the application to a specific CT terminal, the capacity related to transhipment tracks, the gantry crane and the storage must be determined separately considering the specific conditions. The lowest of these capacity values determines its overall capacity and indicates possible bottlenecks. The type or size of the equipment is a key capacity factor that determines the space required for transhipment and storage. The number of movements per unit is a variable factor linked to the market segment and the type of equipment that influences the capacity of the gantry crane. The duration of storage, which is also related to the market segment and the type of equipment, is an important factor for the storage capacity. In addition, the number of modules can have an influence on the capacity that determines their structure and on the complexity of the operations.

[7] The approach is limited to physical assets, so that it does not consider regulatory and administrative restrictions that may limit handling capacities at terminals. Legal and administrative criteria may include regulation, staffing and opening hours (among others determined by market segments).
[8] In recent years, a modular shape of terminals has been developed to split one single facility in different parts which have all the same characteristics (rail access, signaling, gantry cranes, interim storage, road side access, check-in/check-out gates).

The limiting factor leads to the allocation of CT terminals to one of the four identified size classes (small, medium, large and x-large). As an example, a large installation has a capacity of more than 150,000 ILUs and requires a transhipment track length of more than 2,500 m and handling equipment with more than two gantry cranes and respectively system tracks for horizontal transhipment. In view of the storage requirements, large installations have a surface area of more than 100,000 m2. The following table shows the categorization parameters at a glance.

Figure 56: CT terminal categorisation by size

Criteria	Size category			
	Small	Medium	Large	X-Large
Capacity	≤ 75,000 LU	75,000 LU < x ≤ 150,000 LU	150,000 LU < x ≤ 300,000 LU	> 300,000 LU
Total transshipment track length	≤ 1,000 m	1,000 m < x ≤ 2,500 m	2,500 m < x ≤ 4,000 m	> 4,000 m
Surface area	≤ 45,000 m^2	45,000 m^2 < x ≤ 100,000 m^2	100,000 m^2 < x ≤ 210,000 m^2	> 210,000 m^2
Number of modules	1	1	≤ 2	> 2
Number of handling equipment: gantry cranes (vertical) / system tracks (horizontal)	≤ 1	1 < x ≤ 2	2 < x ≤ 5	> 5

ILU: intermodal loading unit (container, swap body and semi-trailer).
Source: Planco / KombiConsult.

Application of terminal categorisation

The application of the categorisation requires a credible database covering the information. The RFP is a potential data source; however, this requires the adaptation of certain parameters to match the parameter defined for the categorisation and a better coverage of the portal data. The proposed fact sheet summarises the categorisation of such terminals and their main characteristics. For the feasibility of a categorisation in perspective, it is important to obtain the support of the operators by providing and updating the information on CT terminals. This could be a condition for the completion and maintenance of the database, which is essential to provide the basis for a practicable categorisation.

The following figure shows the matrix of “market segment” and “terminal size” criteria applied for the categorisation.

Figure 57: CT terminal categorisation

		Market segment ▪ Equipment handled ▪ Transshipment technology				
		Container	Continental vertical	Continental horizontal	Mixed vertical	Mixed vertical + horizontal
Terminal size ▪ Capacity ▪ Area ▪ Modules ▪ Transshipment tracks ▪ Handling equipment	Small					
	Medium					
	Large					
	X-Large					

Source: Planco/ KombiConsult.

An analysis of the European CT terminal network based on the data collected and the data available in the RFP shows that most installations only provide vertical transhipment technologies and focus on containers. Only a small proportion handles other equipment (swap bodies, semi-trailers). However, the majority handles continental and maritime equipment. Irrespective of these facts, they tend to concentrate on a certain market segment linked to the routes operated by the CT operator. Nevertheless, this aspect is difficult to analyse because the route portfolio and schedules are not under the control of the terminal operator. The high proportion of “mixed vertical” CT terminals is in line with the results of the categorisation of the seven terminals that were subject to the validation process. Six terminals belong to the “Mixed vertical” market segment with sizes ranging from “Small” to “X-large”, while one terminal belongs to the “Mixed vertical + horizontal” “X-Large” category. These are certain facilities with horizontal transhipment technologies, in particular for non-craneable semi-trailers.

According to the actually available RFP data, the majority of CT terminals can be considered ‘small’, as more than half of them with data entries do not have a gantry crane and entirely rely on mobile equipment. Only a small proportion is equipped with five or more gantry cranes. In addition, the data show that a large number of medium and large terminals form the basis of the CT terminal network in Europe, while the “X-large” category represents only a small number of them.

It is recommended to apply the methodology described and to categorise them all in the future. Assuming that the required data are available for all CT terminals, a full survey could be carried out to categorise these terminals. Considering the further development of databases, the methodology could be applied fairly easily and show the number of facilities per category. Furthermore, depending on the purpose of the analysis, the scope of the categorisation could be determined, e.g. by focusing on a specific region. If the analysis is repeated on a regular basis trends in the structure of the CT terminal could be identified and possible implications analysed.

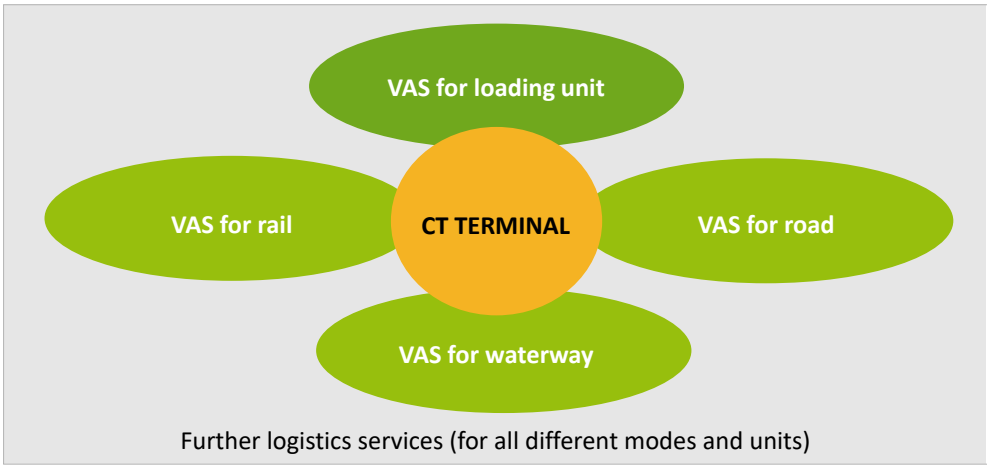
Catalogue of value-added services (VAS)

On the basis of Directive 2012/34/EU and EU Commission's Implementing Regulation (EU) 2017/2177 on access to service facilities and rail-related services, different types of service facilities are described. CT Terminals would most likely belong to the category of "freight terminals". According to Article 3 of the Regulation (EU) 1315/2013, these offer as their core function "transhipment" and "temporary storage" of intermodal loading units. The term "value-added services" is not legally defined and it includes any type of services potentially offered by the terminal operator that complements the main function of the facility. All these "value-added services" must be defined by the operators themselves in accordance with the principle of freedom of contract and, where appropriate, allocated to the regulated area. In order to get an overview of all VAS offered in European CT terminals, different sources and recent projects9 have been analysed. The results of the analysis were completed - under supervision of terminal operators - and compiled in a catalogue of all services.

As there is a multitude of VAS on offer, a comprehensive list with a categorisation should provide a better overview. Regularly application of the method in the future - e.g. with the forthcoming publication of the "Report on Combined Transport" - could demonstrate trends in the development of VAS. Depending on the location, the VAS offered in the catchment area and the customers of each terminal might be very different and some of them no longer part of the classic range of tasks, but rather belong to the field of logistics services.

VAS can be divided into four main categories. In terms of basic services, VAS can refer to the loading unit and at the mode or means of transport (road, rail and inland waterway). Other VAS, which may be services for the end customers who are not in direct contact with the CT terminal, can be grouped in other logistics services. The following diagram gives an overview of the categorisation.

Figure 58: Scheme of Value-Added-Services (VAS) including examples



Source: Planco / KombiConsult.

Based on the categorization, the analysis of sources and interviews with CT terminal operators, the following list presents the most common VAS on the market at a glance. The services specifically marked with:

* Access, including track access, shall be granted to services facilities, if any, and to the services provided in these facilities

** Additional services

*** Ancillary services

are also listed in the Directive 2012/34/EU Annex II "Services to be supplied to the railway undertakings" and are divided in basic, additional and ancillary services.

[9] Analysis of Value-added services at inland multimodal hubs, 2017, Constanze Bannholzer (2) Hub Harmony (Harmonization benchmark for inland multimodal hubs): Future links for sustainability, 2018 (3) www.railfacilitiesportal.eu, access in October 2020.

Table 7: Most common Value-Added-Services (VAS) of CT terminals

VAS for loading unit	VAS for rail	VAS for road	VAS for waterway	Other VAS / further logistics services
Agency	Brake testing facility	Accommodations for truck drivers	Berths - break places	Access to telecommunication networks***
Cleaning (tank container)	Electrified access	Cleaning trucks and equipment	Charging current	Conference rooms
Container lashing	Locomotive cleaning*	Filling station (patrol station/gas station)	Logistic Services for neighbouring shippers	Hotels, restaurants, shops, cafeteria, etc.
Container sales/leasing	Locomotive parking*	OCR documentation	Mechanic access	Integrated C02 calculator
Customs clearance	Locomotive repair/maintenance (light)*	Own chassis and trailers	OCR documentation	Offices (for rent)
Dangerous goods	OCR documentation	Own trucks	Shore leave facilities/terminal access	Order picking, warehousing
Empty container depot	Provision of emergency equipment	Parking options	Supply and disposal of water	Packing, labelling and tagging
Fumigation/ disinfection	Refuelling*	Repair/maintenance chassis and trailers	Waste disposal	Provision of supplementary information
Reefers	Shunting	Repair/maintenance trucks		Quality control (checking)
Repair/ maintenance	Technical inspection of rolling stock***	Sanitary facilities (showers, toilets, etc.)		Quality-focused service
Security services	Traction current (extra charges)**	Supply control and slot management		Stuffing/stripping
Tracking and tracing	Wagon cleaning*	Trucking		Time-focused services (JIT, JIS)
Ventilation	Wagon parking*			
Waste	Wagon repair/maintenance (light)*			
Weighing				

Source: Planco/ KombiConsult.

This list forms the basis for the VAS part of the terminal factsheet (A 7). The VAS part is intended to provide an overview of the VAS offered, so that interested customers can inform themselves accordingly and contact the terminal. VAS trends can be seen in the field of loading units. Depending on the market situation, different transhipment facilities also offer VAS in the area of road access and focus on the digitalization of processes. VAS in the waterway or rail sector are mainly limited to the improvement of handling processes and not to the maintenance or repair of heavy wagons, locomotives or vessels.

The interviews with CT terminal managers revealed that all services beyond transhipment and temporary storage of loading units are offered outside the regulated area and on a voluntary basis after examination of their market potential. No facility can be obliged - nor allow third parties - to provide such services within its boundaries.

Legal inventory

From a legal point of view, the growing Road-Rail CT market contributes to a diversification of the operational models of CT terminals. The legal structure may have an impact on access policy and competition in the Road-Rail CT markets. The decisive factors are the organisational structures of these terminals with regard to the distribution of responsibilities for land, infrastructure and operation, the shareholders of the CT terminals concerned, their financing and access policy. This analysis will contribute to a better understanding of the concept of open access and the factors influencing the access policies. In addition, the transparency of terminal operating models could be enhanced.

Open access terminals are not covered by an approved exemption and must therefore formally grant third parties access in accordance with regulatory requirements. The allocation of slots must be based on a transparent and non-discriminatory procedure - in particular in case of conflicting slot requests - and on a charging structure.

From a legal point of view, the organisational structure of the CT terminal is an essential aspect in view of the components land, infrastructure/superstructure and operation. The organisational structure can either be vertically integrated with the owner of the land and the investor of the infrastructure/superstructure as the terminal operator. The alternative is to separate the ownership of the land and infrastructure and the responsibility for its operation by means of a contract with a separate entity for this part. Depending on its shareholders and the terms of the operating contract, the managing company may be a subsidiary of the owner or act independently. Different types of private and public shareholders are involved and hold stakes in the CT terminal operating companies. They have different incentives linked to their interest in CT, which may influence their strategic position and access policy. The organisational structure may be linked to the financing of the investment, as it may (partly) come from public sources which may impose certain organisational requirements, such as the obligation to tender the terminal operation to a separate company. Furthermore, public funding usually explicitly requires open access without any formal discrimination; access policy and related incentives are determined by the different legal characteristics. The analysis of these characteristics may be useful for a better understanding of the terminal strategy and access policy, although the regulation requires open access unless an exemption is granted by the compentent authorities. The objective of the Commission Implementing Regulation (EU) 2177/2017 on access to service facilities and rail-related services published in 2017 and in force since May 2019 for all types of rail facilities, is to define homogeneous rules for open access and the services provided as well as possible exemptions - irrespective of ownership and financing.

The following table shows the legal inventory of the CT terminals including the organisational structure, the different types of shareholders, the financing of investments and the access policy.

Figure 59: Legal inventory CT terminals

<table>
<tr><th colspan="2">Organisational structure</th><th>Shareholders of Terminal operator</th><th>Financing</th><th>Access policy</th></tr>
<tr><td colspan="2">Ownership of / Responsibility for
▪ Land
▪ Infrastructure
▪ Operation</td><td rowspan="2">▪ Terminal operator
▪ CT operator
▪ Railway infra-structure manager
▪ Railway undertaking
▪ Forwarder
▪ Port
▪ Maritime shipping line
▪ Industrial shipper
▪ National authority
▪ Regional authority</td><td rowspan="2">▪ Full Public
▪ Public grants
▪ Full private</td><td rowspan="2">▪ Open access
▪ Discrimination with approved exemption</td></tr>
<tr><td>Vertical integration</td><td>Vertical separation of terminal operator</td></tr>
</table>

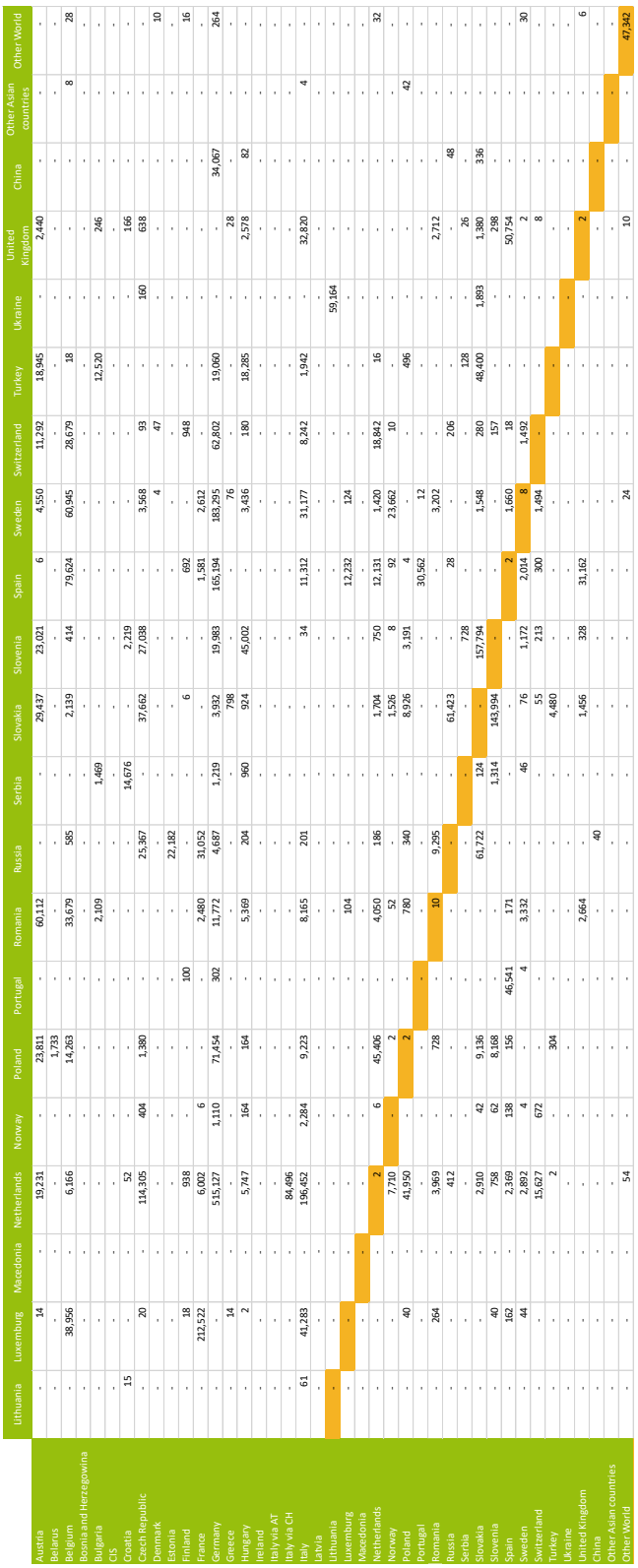
Source: Planco/ KombiConsult.

Annexes

A 1: Origin-Destination-Matrix TEU

	Austria	Belarus	Belgium	Bosnia and Herzegowina	Bulgaria	CIS	Croatia	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy via AT	Italy via CH	Italy	Latvia
Austria	119	-	9,741	-	-	-	774	2,629	6	-	3,478	2,117	193,493	31,602	8,236	2	-	-	95,945	-
Belarus	-	-	-	-	-	-	-	-	-	-	-	-	7,620	-	-	-	-	-	-	-
Belgium	9,036	-	4	-	742	-	746	3,715	324	-	860	91,438	35,761	-	7,488	-	-	88,732	371,435	-
Bosnia and Herzegowina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bulgaria	22	-	2	-	2	-	-	-	-	-	-	20	208	-	-	6	-	-	-	-
CIS	-	-	-	-	-	-	-	84	-	-	-	-	-	-	-	-	-	-	-	-
Croatia	755	-	30	13,994	-	-	-	-	-	-	6	-	54	-	20,723	-	-	-	-	-
Czech Republic	86,198	-	2,924	-	-	-	-	-	-	-	1,630	-	774,706	-	-	34	-	-	32,663	-
Denmark	1,858	-	-	-	-	-	-	-	-	-	-	-	28,708	4	-	-	26,190	-	11,765	-
Estonia	-	-	-	-	-	1,530	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Finland	4,412	-	1,044	-	-	-	8	1,154	-	-	-	2,550	7,110	36	-	-	-	-	10,272	-
France	1,528	-	58,112	-	2	-	2	-	14	-	2,562	138	30,436	118	1,658	-	-	-	150,260	-
Germany	135,309	6,286	42,248	-	192	41	5	155,910	19,008	-	8,594	66,422	240	3,257	192,115	-	153,754	67,745	843,078	-
Greece	940	-	314	-	-	-	-	8,715	44	-	44	108	2,556	-	5,730	2	-	-	-	-
Hungary	14,508	-	4,188	-	6	-	14,792	1	4	-	380	2,170	51,222	3,845	4	86	-	-	42,908	-
Ireland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy via AT	-	-	-	-	-	21	-	-	-	-	-	-	24,774	-	-	-	-	-	-	-
Italy via CH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy	80,583	-	279,640	-	472	-	-	31,901	15,449	-	10,376	119,402	816,643	2	143,759	1,360	-	-	8	-
Latvia	-	-	-	-	-	-	-	-	-	1,082	-	-	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luxemburg	2	-	76,884	-	-	-	-	-	-	-	112	130,546	-	16	8	-	-	-	42,288	-
Macedonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	14,908	-	9,279	-	432	-	-	2,438	-	-	744	4,834	221,363	370	5,752	-	2,362	-	237,331	-
Norway	104	-	-	-	-	-	-	46	-	-	-	88	537	16	198	-	-	-	694	-
Poland	23,845	5,247	11,068	-	-	-	-	-	-	-	-	70	48,022	-	371	-	-	-	10,432	-
Portugal	-	-	-	-	-	-	-	-	-	-	38	-	182	-	-	-	-	-	-	-
Romania	-	-	28,974	-	68	-	-	-	-	-	-	2,554	6,735	-	-	130	-	-	5,737	-
Russia	-	-	769	-	-	-	-	27,888	309	17,940	-	-	5,477	-	306	-	-	-	-	-
Serbia	-	-	-	-	-	-	1,438	-	-	-	-	-	230	-	299	-	-	-	-	-
Slovakia	49,996	204	2,298	-	-	224	-	13,273	-	-	-	124	47,097	764	3,313	12	-	-	1,047	1
Slovenia	20,293	-	732	-	-	-	234	39,008	-	-	12	26	29,439	-	163,221	-	-	-	719	-
Spain	2	-	28,282	-	-	-	-	-	2	-	946	-	79,005	-	-	108	-	-	12,021	-
Sweden	4,146	-	6,683	-	-	-	36	2,756	-	-	-	2,436	153,207	68	3,198	-	-	-	30,169	-
Switzerland	13,335	-	32,774	-	-	185	-	59	36	-	790	19	48,564	2	174	-	4,539	-	4,321	-
Turkey	582	-	2	-	-	-	-	-	-	-	-	-	12,987	-	18,631	-	-	-	2,572	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
United Kingdom	2,090	-	2	2	206	-	70	-	-	-	-	2	-	60	1,954	-	-	-	16,346	-
China	-	-	-	-	-	-	-	-	-	-	-	-	47,385	-	-	-	-	-	-	-
Other Asian countries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other World	-	-	30	-	-	-	-	-	-	-	36	-	78	-	-	-	-	-	-	-

A 2: Origin-Destination-Matrix TEU (continued)



	Lithuania	Luxemburg	Macedonia	Netherlands	Norway	Poland	Portugal	Romania	Russia	Serbia	Slovakia	Slovenia	Spain	Sweden	Switzerland	Turkey	Ukraine	United Kingdom	China	Other Asian countries	Other World
Austria	-	14	-	19,231	-	23,811	-	60,112	-	-	29,437	23,021	-	6	4,550	11,292	18,945	-	2,440	-	-	-
Belarus	-	-	-	-	-	1,733	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Belgium	-	38,956	-	6,166	-	14,263	-	33,679	585	-	2,139	414	79,624	60,945	28,679	18	-	-	-	8	-	28
Bosnia and Herzegowina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bulgaria	-	-	-	-	-	-	-	2,109	-	1,469	-	-	-	-	-	12,520	-	246	-	-	-	-
CIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croatia	15	-	-	52	-	-	-	-	-	14,676	-	2,219	-	-	-	-	-	166	-	-	-	-
Czech Republic	-	20	-	114,305	404	1,380	-	-	25,367	-	37,662	27,038	-	3,568	93	-	160	638	-	-	-	-
Denmark	-	-	-	-	-	-	-	-	-	-	-	-	-	4	47	-	-	-	-	-	-	10
Estonia	-	-	-	-	-	-	-	-	22,182	-	-	-	-	-	-	-	-	-	-	-	-	-
Finland	-	18	-	938	-	-	100	-	-	-	-	-	692	-	948	-	-	-	-	-	-	16
France	-	212,522	-	6,002	6	-	-	2,480	31,052	-	-	6	1,581	2,612	-	-	-	-	-	-	-	-
Germany	-	-	-	515,127	1,110	71,454	302	11,772	4,687	1,219	3,932	19,983	165,194	183,295	62,802	19,060	-	-	34,067	-	-	264
Greece	-	14	-	-	-	-	-	-	-	-	798	-	-	76	-	-	-	28	-	-	-	-
Hungary	-	2	-	5,747	164	164	-	5,369	204	960	924	45,002	-	3,436	180	18,285	-	2,578	82	-	-	-
Ireland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy via AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy via CH	-	-	-	84,496	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy	61	41,283	-	196,452	2,284	9,223	-	8,165	201	-	-	34	11,312	31,177	8,242	1,942	-	32,820	-	4	-	-
Latvia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59,164	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luxemburg	-	-	-	-	-	-	-	104	-	-	-	-	12,232	124	-	-	-	-	-	-	-	-
Macedonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	-	-	-	2	6	45,406	-	4,050	186	-	1,704	750	12,131	1,420	18,842	16	-	-	-	-	-	32
Norway	-	-	-	7,710	-	2	-	52	-	-	1,526	8	92	23,662	10	-	-	-	-	-	-	-
Poland	-	40	-	41,950	-	2	-	780	340	-	8,926	3,191	4	-	-	496	-	-	-	42	-	-
Portugal	-	-	-	-	-	-	-	-	-	-	-	-	30,562	12	-	-	-	-	-	-	-	-
Romania	-	264	-	3,969	-	728	-	10	9,295	-	-	-	-	3,202	-	-	-	2,712	-	-	-	-
Russia	-	-	-	412	-	-	-	-	-	-	61,423	-	28	-	206	-	-	-	48	-	-	-
Serbia	-	-	-	-	-	-	-	-	-	-	-	728	-	-	-	-	-	26	-	-	-	-
Slovakia	-	-	-	2,910	42	9,136	-	-	61,722	124	-	157,794	-	1,548	280	48,400	1,893	1,380	336	-	-	-
Slovenia	-	40	-	758	62	8,168	-	-	-	1,314	143,994	-	-	-	157	-	-	298	-	-	-	-
Spain	-	162	-	2,369	138	156	46,541	171	-	-	-	-	2	1,660	18	-	-	50,754	-	-	-	-
Sweden	-	44	-	2,892	4	-	4	3,332	-	46	76	1,172	2,014	8	1,492	-	-	2	-	-	-	30
Switzerland	-	-	-	15,627	672	-	-	-	-	-	55	213	300	1,494	-	-	-	8	-	-	-	-
Turkey	-	-	-	2	-	304	-	-	-	-	4,480	-	-	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
United Kingdom	-	-	-	-	-	-	-	2,664	-	-	1,456	328	31,162	-	-	-	-	2	-	-	-	6
China	-	-	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asian countries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other World	-	-	-	54	-	-	-	-	-	-	-	-	-	24	-	-	-	10	-	-	-	47,342

A 3: Origin-Destination-Matrix Tonnes

	Austria	Belarus	Belgium	Bosnia and Herzegowina	Bulgaria	CIS	Croatia	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy via AT	Italy via CH	Italy	Latvia
Austria	1,969	-	104,929	-	-	-	1,205	9,525	120	-	33,623	41,633	1,998,560	342,660	93,822	24	-	-	1,235,157	-
Belarus	-	-	-	-	-	-	-	-	-	-	-	-	59,724	-	-	-	-	-	-	-
Belgium	115,394	-	48	-	8,240	-	9,064	36,448	4,034	-	8,334	776,021	326,238	-	83,830	-	-	1,158,996	4,933,002	-
Bosnia and Herzegowina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bulgaria	78	-	8	-	2	-	-	-	-	-	-	232	829	-	-	59	-	-	-	-
CIS	-	-	-	-	-	-	-	367	-	-	-	-	-	-	-	-	-	-	-	-
Croatia	15,524	-	294	202,884	-	-	-	-	-	-	32	-	538	-	91,177	-	-	-	-	-
Czech Republic	755,326	-	27,773	-	-	-	-	-	-	-	14,009	-	7,298,168	-	-	385	-	-	441,230	-
Denmark	25,895	-	-	-	-	-	-	-	-	-	-	-	309,701	28	-	-	314,307	-	158,492	-
Estonia	-	-	-	-	-	15,860	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Finland	54,188	-	12,208	-	-	-	95	13,197	-	-	-	28,581	76,159	183	-	-	-	-	132,441	-
France	10,429	-	591,914	-	22	-	24	-	140	-	25,297	72	326,649	923	13,585	-	-	-	1,767,152	-
Germany	1,509,856	48,642	303,667	-	2,711	618	33	1,775,412	205,868	-	86,742	456,352	1,404	39,286	1,820,038	-	1,421,080	794,972	11,880,390	-
Greece	9,447	-	3,627	-	-	-	-	59,625	507	-	486	1,112	24,557	-	46,129	24	-	-	-	-
Hungary	84,821	-	40,345	-	11	-	71,606	20	46	-	3,401	18,161	445,840	21,784	13	559	-	-	381,469	-
Ireland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy via AT	-	-	-	-	-	309	-	-	-	-	-	-	262,246	-	-	-	-	-	-	-
Italy via CH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy	891,292	-	3,332,009	-	4,274	-	-	460,205	187,752	-	101,516	1,792,131	9,253,305	19	1,060,378	15,098	-	-	90	-
Latvia	-	-	-	-	-	-	-	-	-	24,229	-	-	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Luxemburg	5	-	1,223,229	-	-	-	-	-	-	-	1,407	1,869,409	-	80	79	-	-	-	621,388	-
Macedonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	194,075	-	120,640	-	4,715	-	-	26,699	-	-	6,594	62,279	1,336,699	3,778	67,138	-	32,823	-	3,510,295	-
Norway	1,297	-	-	-	-	-	-	436	-	-	-	1,076	6,541	182	2,079	-	-	-	9,331	-
Poland	458,068	64,617	68,655	-	-	-	-	-	-	-	-	392	338,118	-	2,775	-	-	-	90,169	-
Portugal	-	-	-	-	-	-	-	-	-	-	347	-	710	-	-	-	-	-	-	-
Romania	-	-	278,345	-	186	-	-	-	-	-	-	12,323	60,102	-	-	1,225	-	-	34,372	-
Russia	-	-	5,054	-	-	-	-	171,804	5,256	21,315	-	-	50,160	-	3,730	-	-	-	-	-
Serbia	-	-	-	-	-	-	10,369	-	-	-	-	-	1,130	-	2,630	-	-	-	-	-
Slovakia	460,016	523	21,617	-	-	1,216	-	129,579	-	-	-	1,965	360,720	6,477	40,800	124	-	-	13,044	4
Slovenia	211,257	-	9,121	-	-	-	2,574	380,938	-	-	92	329	287,231	-	1,736,316	-	-	-	1,432	-
Spain	25	-	299,441	-	-	-	-	-	23	-	10,420	-	652,250	-	-	868	-	-	167,104	-
Sweden	49,895	-	48,703	-	-	-	227	30,716	-	-	-	18,911	1,748,820	794	32,201	-	-	-	401,669	-
Switzerland	104,643	-	224,864	-	-	2,782	-	1,641	498	-	5,834	85	337,716	24	532	-	28,775	-	30,574	-
Turkey	5,825	-	7	-	-	-	-	-	-	-	-	-	59,444	-	138,426	-	-	-	6,958	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
United Kingdom	22,289	-	24	24	1,964	-	761	-	-	-	-	25	-	548	19,656	-	-	-	182,085	-
China	-	-	-	-	-	-	-	-	-	-	-	-	512,928	-	-	-	-	-	-	-
Other Asian countries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other World	-	-	401	-	-	-	-	-	-	-	512	-	960	-	-	-	-	-	-	-

A 4: Origin-Destination-Matrix Tonnes (continued)

	Lithuania	Luxemburg	Macedonia	Netherlands	Norway	Poland	Portugal	Romania	Russia	Serbia	Slovakia	Slovenia	Spain	Sweden	Switzerland	Turkey	Ukraine	United Kingdom	China	Other Asian countries	Other World
Austria	-	80	-	264,527	-	56,886	-	913,770	-	-	106,323	317,598	100	46,106	111,801	213,592	-	26,748	-	-	-
Belarus	-	-	-	-	-	37,313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Belgium	-	400,308	-	27,255	-	177,843	-	381,305	9,098	-	25,748	4,676	1,203,155	812,427	312,106	185	-	-	-	112	266
Bosnia and Herzegowina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bulgaria	-	-	-	-	-	-	-	34,258	-	14,763	-	-	-	-	-	125,826	-	1,878	-	-	-
CIS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Croatia	154	-	-	481	-	-	-	-	245,134	-	-	17,765	-	-	-	-	-	1,794	-	-	-
Czech Republic	-	252	-	782,473	2,055	10,350	-	-	202,232	-	338,958	199,717	-	33,595	217	-	316	6,775	-	-	-
Denmark	-	-	-	-	-	-	-	-	-	-	-	-	-	60	253	-	-	-	-	-	113
Estonia	-	-	-	-	-	-	-	-	136,754	-	-	-	-	-	-	-	-	-	-	-	-
Finland	-	211	-	11,288	-	-	967	-	-	-	63	-	6,892	-	10,247	-	-	-	-	-	196
France	-	2,426,270	-	48,035	36	-	-	21,584	279,894	-	-	-	15,719	23,268	-	-	-	-	-	-	-
Germany	-	-	-	5,068,181	10,756	595,656	4,104	126,749	38,699	18,226	40,180	322,876	2,225,341	2,112,013	821,198	202,782	-	-	339,440	-	3,086
Greece	-	145	-	-	-	-	-	-	-	-	8,020	-	-	762	-	-	-	257	-	-	-
Hungary	-	5	-	49,155	974	2,135	-	80,917	630	4,348	1,760	322,052	-	18,181	3,390	178,638	-	22,302	975	-	-
Ireland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy via AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy via CH	-	-	-	971,709	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy	498	531,429	-	2,359,086	21,525	106,034	-	118,058	1,724	-	-	333	156,931	301,341	80,224	27,876	-	375,371	-	58	-
Latvia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-	-	-	150,405	1,412	-	-	709,960	-	-	-	-
Luxemburg	-	-	-	-	-	-	-	1,224	-	-	-	-	-	-	-	-	-	-	-	-	-
Macedonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	-	-	-	25	37	737,846	-	51,474	2,628	-	19,251	9,636	120,614	11,693	188,772	1,86	-	-	-	-	314
Norway	-	-	-	72,199	-	28	-	651	-	-	21,356	110	1,145	283,942	128	-	-	-	-	-	-
Poland	-	467	-	362,421	-	6	-	9,088	4,779	-	20,298	20,393	44	-	-	1,724	-	-	-	649	-
Portugal	-	-	-	-	-	-	-	-	-	-	-	-	231,564	56	-	-	-	-	-	-	-
Romania	-	3,132	-	31,810	-	4,971	-	42	102,241	-	-	-	-	23,457	-	-	-	28,701	-	-	-
Russia	-	-	-	7,007	-	-	-	-	-	-	355,736	-	416	-	3,504	-	-	-	469	-	-
Serbia	-	-	-	-	-	-	-	-	-	-	-	1,384	-	-	-	1,724	-	174	-	-	-
Slovakia	-	-	-	21,181	493	42,025	-	-	413,781	2,218	-	1,205,411	-	16,591	957	435,600	27,029	11,699	2,172	-	-
Slovenia	-	576	-	9,847	309	69,368	-	-	-	16,425	1,472,619	-	23	-	396	-	-	3,263	-	-	-
Spain	-	2,030	-	26,802	1,292	2,234	459,114	2,423	-	-	-	-	22,384	16,479	193	-	-	438,613	-	-	-
Sweden	-	535	-	20,712	29	-	28	37,567	-	536	897	15,256	78	13,855	-	-	-	4	-	-	233
Switzerland	-	-	-	159,667	7,211	-	-	-	-	-	1,579	4,268	3,998	8,939	-	-	-	78	-	-	-
Turkey	-	-	-	23	-	1,830	-	-	-	-	45,024	-	-	-	-	-	-	-	-	-	-
Ukraine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
United Kingdom	-	-	-	-	-	-	-	24,452	-	-	13,241	4,206	283,543	-	-	-	-	23	-	-	14
China	-	-	-	-	-	-	-	-	623	-	-	-	-	-	-	-	-	-	-	-	-
Other Asian countries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other World	-	-	-	701	-	-	-	-	-	-	-	-	-	95	-	-	-	75	-	-	520,782

A 5: Overview of national measures in CT (only current programmes)

Overview of funding programmes (only current programmes)							
Programme	**Institution**	**Contact person**	**Email**	**Term**	**Sector**	**Classification**	**Type of measure**
Austria							
Beihilfeprogramm für die Erbringung von Schienengüterverkehrsleistungen in bestimmten Produktionsformen in Österreich - SA.48390 2017/N	BMVIT-Bundes-ministerium für Verkehr, Innovation und Technologie (AT)	Abteilung I / K4 Kombinierter Verkehr	k4@bmvit.gv.at	2018 - 2022	Combined Transport	CT (UAC, AC), Operational (Funding per km), Single wagon load	Direct grant
Fördermaßnahmen für den kombinierten Verkehr (Steuerliche Maßnahmen)				2020 -	Rail + CT	Operational (Processes), RoLa/ Rolling motorway, Fiscal support	Tax allowance
Innovationsförderprogramm für den kombinierten Güterverkehr				2015 - 2020	Combined Transport	Innovative equipment/ technologies, IT/ processing, Research/ studies, Trainings and educational measures	Direct grant/ Interest rate subsidy
Mobilität der Zukunft, Programmlinie Gütermobilität				2012 - 2020	Rail + CT	Innovative equipment/ technologies in CT, IT/ processing, Research/ studies, Innovative business models and services	Direct grant
Ordnungspolitische Maßnahmen zur Förderung des kombinierten Verkehrs				2020 -	Combined Transport	Operational (Processes), RoLa / Rolling motorway	Regula-tory measure
Programm für die Unterstützung des Ausbaus von Anschlussbahnen sowie von Umschlagsanlagen des Intermodalen Verkehrs - SA.48485				2018 - 2022	Rail + CT	Infrastructure (Rail, Terminal), Research / studies, Sidings	Direct grant
Rahmenplan ÖBB 2018-2023				2018 - 2023	Rail + CT	Infrastructure (Rail, Terminal), General rail transport, CT (UAC/ AC)	Grant contract
Belgium							
Prolongation du régime de promotion du transport combiné ferroviaire et du trafic diffus pour 2017-2020 - SA.47109	FPS Mobility and Transport		info@mobilit.fgov.be	2017 - 2020	Combined Transport	Operational (Funding per km), ILUs, Wagons, Fiscal support	Direct grant

Overview of funding programmes (only current programmes)							
Programme	**Institution**	**Contact person**	**Email**	**Term**	**Sector**	**Classification**	**Type of measure**
Bulgaria							
Ordinance No 53/2003 for Performing of combined transport - Infrastructure charge reduction	Republic of Bulgaria Ministry of Transport, Information Technology and Communications		mail@mtitc.government.bg	2014 - 2020	Combined Transport	Operational (Funding per km), Infrastructure (Rail, Terminal)	Direct grant
Operational programme "Transport and transport infrastructure"				2014 - 2020	Rail + CT, Other	Infrastructure (Rail, Terminal, Other), General rail transport, Rail corridors	Direct grant
Operational Programme on Transport and Transport Infrastructure				2003 -	Combined Transport	Infrastructure (Rail, Terminal)	Direct grant
Croatia							
Incentives in combined freight transport	Republic of Croatia Ministry of the Sea, Transport and Infrastructure - Department for Intermodal Transport	Danijel Krakić	Poticaji-kombinirani@mmpi.hr (for enquiries regarding funding measures) Danijel.Krakic@mmpi.hr	2018 - 2022	Combined Transport	CT (UAC), transport organisator, exemption from paying an annual fee for the use of public roads for road transport operator	Direct grant, exemp-tion from annual fees
Ordinance on incentives in Combined Transport of Goods (OJ 5/18): Funding per multimodal unit for transport organizer				2018 - 2023	Combined Transport	Operational (Funding per km)	Direct grant
Ordinance on incentives in Combined Transport of Goods (OJ 5/18): Funding on railway transport for railway undertaking				2018 - 2023	Rail + CT	Operational (Funding per km)	Direct grant
Ordinance on incentives in Combined Transport of Goods (OJ 5/18): Support of Croatian trucks and vehicles for first/final road leg (for owner of road vehicles)				2018 - 2023	Combined Transport	Operational (Funding per km), Fiscal support	Tax allowance
Czech Republic							
State aid/Aid scheme for the modernisation and construction of combined transport terminals - SA.39962 2014/N	Ministry of Transport	Ivan Novák	ivan.novak@mdcr.cz	2015 - 2020	Combined Transport	Infrastructure (Terminal)	Direct grant
State Aid/ Funding Program for Intermodal Transport Units - SA. 49153 2017/N				2018 - 2023	Combined Transport	CT (UAC), Innovative equipment/technologies in CT	Direct grant

Overview of funding programmes (only current programmes)							
Programme	**Institution**	**Contact person**	**Email**	**Term**	**Sector**	**Classification**	**Type of measure**
Denmark							
Environmental grant (miljøtilskud)	Ministry of Transport / Rail Net Denmark - Bane-danmark		dir-sek@bane.dk	2001 - 2020	Rail + CT	Freight rail/Combined transport	Direct grant
Environmental subsidy				2013 - 2020	Rail + CT	Operational (Funding per km)	Direct grant
Funding for fitment of freight locomotives with ETCS and STM				2017 - 2020	Rail + CT	Purchase and installation of new train control systems (ETCS, STM) in freight locomotives	Direct grant
Estonia							
NO FUNDING	Ministry of Economic Affairs and Commu-nications		info@mkm.ee				
Finland							
Finnish law on vehicle tax (ajoneuvoverolaki 1281/2003) - Tax support for combined transport that includes transporting the tractor unit in the train	Ministry of Transport and Communications		kirjaamo@lvm.fi	2003 -	Rail + CT	Operational (Funding per km), RoLa / Rolling motorway, Fiscal support	Tax allowance
France							
Aides à l'exploitation des services réguliers de transport combiné Mesures en faveur du fret ferroviaire	Ministère de la Transition écologique et solidaire			2018 -	Rail + CT	Infrastructure (Rail, Terminal), ILUs, Operational (Technology, Processes), Research	Direct grant
Aid scheme for studies and works to develop and implement "Rail Motorways"				2017 -	Rail + CT	Infrastructure (Rail), RoLa / Rolling motorway	Direct grant
Aide forfaitaire par unité de transport intermodal				2013 -	Rail + CT	Operational (Funding per km), ILUs	Direct grant

Overview of funding programmes (only current programmes)							
Programme	**Institution**	**Contact person**	**Email**	**Term**	**Sector**	**Classification**	**Type of measure**
Germany							
Richtlinie zur Förderung von Umschlaganlagen des Kombinierten Verkehrs (KV)	Bundesministe-rium für Verkehr und digitale Infrastruktur (BMVI)	Florian Dirr	florian.dirr@bmvi.bund.de	2017 - 2021	Combined Transport	Infrastructure (Terminal), Innovative equipment / technologies in CT	Direct grant
Digitalisierung intermodaler Lieferketten - KV4-0			buergerinfo@bmvi.bund.de	2017 - 2020	Combined Transport	Operation (Processes, Technology), Research	Direct grant
Italy							
Ferrobonus	Ministry of Infrastructures and Transport			2020 -	Combined Transport		Direct grant
Latvia							
NO FUNDING	Ministry of Transport - Railway department		satiksmes.ministrija@sam.gov.lv				
Lithuania							
Nustatytais vietinio susisiekimo maršrutais teikti vežėjams nuostolingas, tačiau būtinas visuomenei keleivių vežimo geležinkelio transportu paslaugas	Ministry of Transport and Communications	Marius Marci-ulaitis	marius.marciulaitis@sumin.lt	Every year	Rail + CT	General rail transport	Cost recovery
Luxembourg							
Combined transport aid scheme for Luxembourg - SA.51613 2019/N	Ministry of Mobility and Public Works	Laurent Dahm	laurent.dahm@tr.etat.lu	2019 - 2022	Combined Transport	General rail transport	Direct grant
Loi du 31 juillet 2020 relative à un régime d'aides pour la promotion du transport combiné				2020 - 2022	Combined Transport	Operational (Funding per km), ILUs	Direct grant
Macedonia							
NO FUNDING	Ministry of Transport and Communications - Railway Department	Biljana Zdraveva	biljana.zdraveva@mtc.gov.mk				

Overview of funding programmes (only current programmes)							
Programme	**Institution**	**Contact person**	**Email**	**Term**	**Sector**	**Classification**	**Type of measure**
Norway							
Støtteordning for godstransport på bane (Norwegian State Aid Scheme for Rail Freight)	Royal Norwegian Ministry of Transport and Communications		postmottak@sd.dep.no	2019 - 2021	Combined Transport	General rail transport	Direct grant
Poland							
Aid for the implementation of intermodal transport projects under the Operational Program Infrastructure and Environment for the years 2014-2020	Ministry of Infrastructure - Department of Transport Strategy		sekretariatDTK@mi.gov.pl	2017 - 2023	Combined Transport	Infrastructure (Terminal), Innovative equipment / technologies in CT, IT / processing, Rolling stock	Direct grant
Development of railway transport - Programme to finance the purchase of railway platforms				2014 - 2020	Rail + CT	Wagons, ILUs, Infrastructure (Rail)	Direct grant
Serbia							
Regulation on stimulus measures for the purpose of improving combined transport ("Official Gazette of the Republic of Serbia", no. 67/2015)	Ministry of Construction, Transportation and Infra-structure	Uros Stanimirovic	uros.stanimirovic@mgsi.gov.rs	2018 -	Combined Transport	Infrastructure (Terminal), Operational (Technology), Wagons, ILUs	Direct grant
Slovakia							
Aid to rail freight operators to reduce charges for access to railway infrastructure and service facilities	Ministry of Transport and Construction - Department of Rail and Combined Transport	Miroslav Dorčák	miroslav.dorcak@mindop.sk	Every year	Rail + CT	General rail transport	Compen-sation to infrastruc-ture manager
Slovenia							
NO FUNDING	Republic of Slovenia - Ministry of Infrastructure		soj.mzi@gov.si				

Overview of funding programmes (only current programmes)							
Programme	**Institution**	**Contact person**	**Email**	**Term**	**Sector**	**Classification**	**Type of measure**
Spain							
NO FUNDING	Ministerio de Fomento		fomento@fomento.es				
Sweden							
Eco bonus	Swedish Transport Administration - Trafikverket	Jimmy Grandin	jimmy.grandin@trafikverket.se	2018 - 2022	Maritime	Operation, Cargo handling equipment	Direct grant
Switzerland							
NEAT (Neue Eisenbahn-Alpentransversale)	Eidgenössisches Department für Umwelt, Verkehr, Energie und Kommunikation (UVEK)		Gueterverkehr@bav.admin.ch	1993 - 2020	Rail + CT	Infrastructure (Rail), General rail transport, CT (UAC, AC), Rail corridors	Direct grant
Güterverkehrsverlagerungsgesetz (GVVG)				2010 -	Combined Transport	Infrastructure (Terminal, Other), CT (UAC, AC)	Direct grant
Leistungsabhängige Schwerverkehrsabgabe (LSVA)				2001 -	Rail + CT		Tax allow-ance, Regulatory measure
Bestellung und Abgeltung alpenquerender kombinierter Verkehr: UKV und RoLa				2000	Rail + CT	CT (UAC, AC)	Direct grant
Investitionsbeiträge für Umschlagsanlagen für den kombinierten Verkehr und Anschlussgleise				2016 -	Rail + CT	Infrastructure (Rail, Terminal), General rail transport, CT (UAC)	Direct grant
Bau und Finanzierung des 4-Meter-Korridors				2014 - 2020	Rail + CT	Infrastructure (Rail), General rail transport, CT (UAC, AC), Rail corridors	Direct grant

Overview of funding programmes (only current programmes)							
Programme	**Institution**	**Contact person**	**Email**	**Term**	**Sector**	**Classification**	**Type of measure**
Turkey							
Draft Regulation on Combined Freight Transport - Investment incentive program (supposed to be enacted in 2019)	Ministry of Transport, Maritime Affairs and Communications - DG for Dangerous Goods and Combined Transport	Bülent Süloğlu	bulent.suloglu@udhb.gov.tr	2019 -	Combined Transport	Operational (Processes), Infrastructure (Rail, Terminal), Fiscal support	Direct grant
United Kingdom							
Mode Shift Revenue Support MSRS - SA.39354 2014/N	Department for Transport	Catherine Parton	Catharine.Parton@dft.gov.uk	2015 - 2020	Combined Transport	Operational (Funding per km), RoLa / Rolling Motorway	Direct grant

A 6: Overview of national measures in CT - Links to funding programmes

Overview of funding programmes (only current programmes)	
Programme	**Link**
Austria	
Beihilfeprogramm für die Erbringung von Schienengüterverkehrsleistungen in bestimmten Produktionsformen in Österreich (SA. 48390 2017/N)	https://www.bmk.gv.at/dam/jcr:307cbf11-5b37-4ac5-a7e6-9085c139f594/0_Aufruf%20zum%20F%C3%B6rderprogramm%20Schieneng%C3%BCterverkehr%202020.pdf
Fördermaßnahmen für den kombinierten Verkehr (Steuerliche Maßnahmen)	https://www.bmk.gv.at/dam/jcr:5857d934-12ed-44c4-af3d-595b95548ff9/steuerliche-massnahmen-202004_ua.pdf
Innovationsförderprogramm für den kombinierten Güterverkehr	https://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_41100
Mobilität der Zukunft, Programmlinie Gütermobilität	https://www.mobilitaetderzukunft.at/de/
Ordnungspolitische Maßnahmen zur Förderung des kombinierten Verkehrs	https://www.bmk.gv.at/dam/jcr:d0781622-6614-46ef-a42c-2cafcc3057d2/ordnungspolitische-rahmenbedingungen-202004_ua.pdf
Programm für die Unterstützung des Ausbaus von Anschlussbahnen sowie von Umschlags-anlagen des Intermodalen Verkehrs (SA.48485)	https://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_48485
Rahmenplan ÖBB 2018-2023	https://www.bmk.gv.at/themen/verkehrsplanung/ausbauplan/plan_oebb.html
Belgium	
Prolongation du régime de promotion du transport combiné ferroviaire et du trafic diffus pour 2017-2020 (SA.47109)	http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_47109
Bulgaria	
Ordinance No 53/2003 for Performing of combined transport - Infrastructure charge reduction	https://www.mtitc.government.bg/sites/default/files/integrated_transport_strategy_2030_eng.pdf
Operational programme "Transport and transport infrastructure"	http://www.optransport.bg/upload/docs/OPTTI_ENG.pdf https://www.eufunds.bg/en/optti/node/983
Operational Programme on Transport and Transport Infrastructure	http://www.optransport.bg/upload/docs/OPTTI_ENG_17112014_verision_1.pdf
Croatia	
Incentives in combined freight transport	https://mmpi.gov.hr/promet/kombinirani-prijevoz-132/132
Czech Republic	
State aid/Aid scheme for the modernisation and construction of combined transport terminals - SA.39962 (2014/N)	http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_39962_
State Aid/ Funding Program for Intermodal Transport Units - SA. 49153 2017/N	http://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_49153
Denmark	
Environmental grant (miljøtilskud)	https://www.retsinformation.dk/eli/lta/2019/1233
Environmental subsidy	https://www.retsinformation.dk/eli/lta/2015/1379
Funding for fitment of freight locomotives with ETCS and STM	https://www.bane.dk/da/Jernbanevirksomhed/Stoette-til-nyt-signaludstyr-i-godslokomotiver

Overview of funding programmes (only current programmes)	
Programme	**Link**
Finland	
Finnish law on vehicle tax (ajoneuvoverolaki 1281/2003) - Tax support for combined transport that includes transporting the tractor unit in the train	https://www.finlex.fi/fi/laki/ajantasa/2003/20031281#L4P34
France	
Aid for the operation of regular combined transport services Measures in favour of rail freight (Aides à l'exploitation des services réguliers de transport combiné Mesures en faveur du fret ferroviaire)	https://www.ecologique-solidaire.gouv.fr/elisabeth-borne-presente-ambition-developpement-dune-logistique-urbaine-efficace-et-integree-appuyee https://www.ecologique-solidaire.gouv.fr/transport-combine
Aid scheme for studies and works to develop and implement "Rail Motorways"	https://www.ecologique-solidaire.gouv.fr/autoroutes-ferroviaires
Aide forfaitaire par unité de transport intermodal	https://www.ecologique-solidaire.gouv.fr/transport-combine
Germany	
Richtlinie zur Förderung von Umschlaganlagen des Kombinierten Verkehrs (KV)	https://www.bmvi.de/EN/Topics/Mobility/Freight-Transport-Logistics/Combined-Transport/combined-transport.html
Digitalisierung intermodaler Lieferketten – KV4-0	https://www.bmvi.de/SharedDocs/DE/Artikel/DG/mfund-projekte/digitalisierung-intermodaler-lieferketten-kv40.html
Italy	
Ferrobonus	https://www.uominietrasporti.it/39-milioni-per-il-ferrobonus-2020-2021-domande-entro-il-9-maggio/
Luxembourg	
Combined transport aid scheme for Luxembourg (SA.51613 2019/N)	https://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=3_SA_51613
Loi du 31 juillet 2020 relative à un régime d'aides pour la promotion du transport combiné	http://data.legilux.public.lu/eli/etat/leg/loi/2020/07/31/a672/jo
Norway	
Støtteordning for godstransport på bane (Norwegian State Aid Scheme for Rail Freight)	https://www.jernbanedirektoratet.no/no/jernbanesektoren/stotteordning-for-godstrafikk-pa-jernbane/
Poland	
Aid for the implementation of intermodal transport projects under the Operational Program Infrastructure and Environment for the years 2014-2020	https://www.cupt.gov.pl/os-priorytetowa-iii/dzialanie-3-2-rozwoj-transportu-morskiego-srodladowych-drog-wodnych-i-polaczen-multimodalnych/nabor-wnioskow/dzialanie-3-2-rozwoj-transportu-morskiego-srodladowych-drog-wodnych-i-polaczen-multimodalnych-grupa-c-transport-intermodalny
Development of railway transport - Programme to finance the purchase of railway platforms	https://www.cupt.gov.pl/en/european-funds/the-ceutp-as-an-intermediate-body-in-the-infrastructure-and-environment-programme#priority-v-development-of-rail-transport-in-poland

Overview of funding programmes (only current programmes)	
Programme	**Link**
Serbia	
Regulation on stimulus measures for the purpose of improving combined transport ("Official Gazette of the Republic of Serbia", no. 67/2015)	https://www.unece.org/fileadmin/DAM/trans/doc/2017/wp24/Bozic_Geneva_23_11_2017_final.ppt
Sweden	
Eco bonus	https://www.trafikverket.se/tjanster/ansok-om/ansok-om-miljokompensation-for-overflyttning-av-gods-till-sjofart/
Switzerland	
NEAT (Neue Eisenbahn-Alpentransversale)	https://www.bav.admin.ch/dam/bav/de/dokumente/themen/neat/die_neue_eisenbahn-alpentransversaleneat.pdf.download.pdf/die_neue_eisenbahn-alpentransversaleneat.pdf
Güterverkehrsverlagerungsgesetz (GVVG)	https://www.admin.ch/opc/de/classified-compilation/20070628/index.html
Leistungsabhängige Schwerverkehrsabgabe (LSVA)	https://www.bav.admin.ch/bav/de/home/themen-a-z/lsva.html
Investitionsbeiträge für Umschlagsanlagen für den kombinierten Verkehr und Anschlussgleise	https://www.bav.admin.ch/bav/de/home/verkehrsmittel/eisenbahn/gueterverkehr/investitionsbeitraege-fuer-private-gueterverkehrsanlagen-der-sch.html
Bau und Finanzierung des 4-Meter-Korridors	https://www.bav.admin.ch/bav/de/home/publikationen/bav-news/ausgaben-2018/ausgabe-september-2018/artikel-1.html
Turkey	
Draft Regulation on Combined Freight Transport - Investment incentive program (supposed to be enacted in 2019)	https://www.unece.org/fileadmin/DAM/trans/doc/2013/wp24/ECE-TRANS-WP24-2013-Pres04e.pdf
United Kingdom	
Mode Shift Revenue Support MSRS - SA.39354 (2014/N)	https://www.gov.uk/government/publications/mode-shift-revenue-support-msrs-scheme-2015-to-2020 https://www.gov.uk/government/publications/department-for-transport-delivers-more-grant-funding-to-transport-freight-by-rail

A 7: CT terminal fact sheets

The analysis of the CT terminal is summarised in the fact sheets which indicate its category, the VAS and the legal structure. This gives a quick overview of characteristics of the terminals and facilitates the analysis of CT terminal networks. The fact sheet has been validated with seven terminal operators and could improve their presentation to interested parties. The following table demonstrates the content and structure of the terminal fact sheet.

CT terminal fact sheet

Terminal name		**LOGO**
Operator		
Market segment		[see categorisation]
Size		[see categorisation]
Capacity		[handling capacity in ILU per year]
Transhipment track length		[total length of all tracks expressed in meters]
Surface area		[total surface expressed in 1,000 square meters]
No. of modules [a module is a group of operationally independent transhipment tracks]		[total number]
No. of gantry cranes/No. system tracks for horizontal transhipment		[total number]
Value added services		
Value-Added Services (VAS)	Loading unit	[offered VAS from catalogue]
	Rail	[offered VAS from catalogue]
	Waterway	[offered VAS from catalogue]
	Road	[offered VAS from catalogue]
	Other VAS/Further logistics services	[offered VAS from catalogue]
Legal		
Organisational structure		[see legal inventory CT terminals]
Shareholder type terminal operator		[see legal inventory CT terminals]
Financing		[see legal inventory CT terminals]
Access policy		[see legal inventory CT terminals]

Source: Planco/ KombiConsult

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