



MARKET INSIGHT

INLAND NAVIGATION IN EUROPE

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01

FREIGHT TRAFFIC ON INLAND WATERWAYS

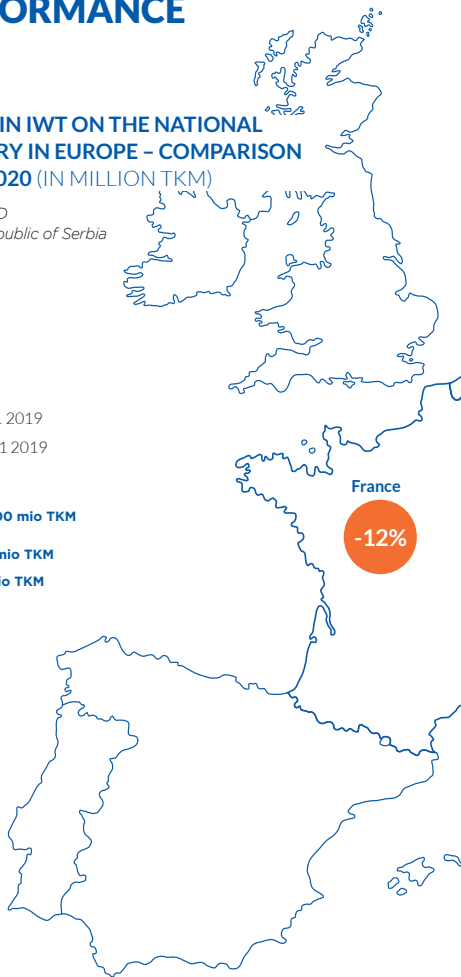
- In the first five months of 2020, cargo transport on the Rhine was 11% lower than in the same period in 2019. The Covid-19 crisis had different effects, depending on cargo segments.
- Iron ore transport was affected by the interruption of automobile production and lost 15%. Transport of sands, stones and gravel registered a reduction of 12%, and chemicals of 8%. There were also segments with a positive result: grain transport benefited from good harvest results and increased by 11%. Transport of petroleum products was on the same level as in 2019, as the drop in oil prices triggered more import traffic in March and April.
- On the Middle Danube, goods transport was 1% higher in the first five months of 2020 compared to the same period in 2019. The reason was the good harvest result, which triggered an uptake of grain transport by 76%. Downstream grain transport between the Middle Danube and the Black Sea more than tripled. On the other hand, iron ore transport on the Middle Danube lost 32%.

TRANSPORT PERFORMANCE IN EUROPE

TRANSPORT PERFORMANCE IN IWT ON THE NATIONAL TERRITORY OF EACH COUNTRY IN EUROPE – COMPARISON BETWEEN Q1 2019 AND Q1 2020 (IN MILLION TKM)

Sources: Eurostat [[iww_go_qnave](#)], OECD
(Switzerland), Statistical Office of the Republic of Serbia

- Positive rate of change in Q1 2020 vs Q1 2019
- Negative rate of change in Q1 2020 vs Q1 2019



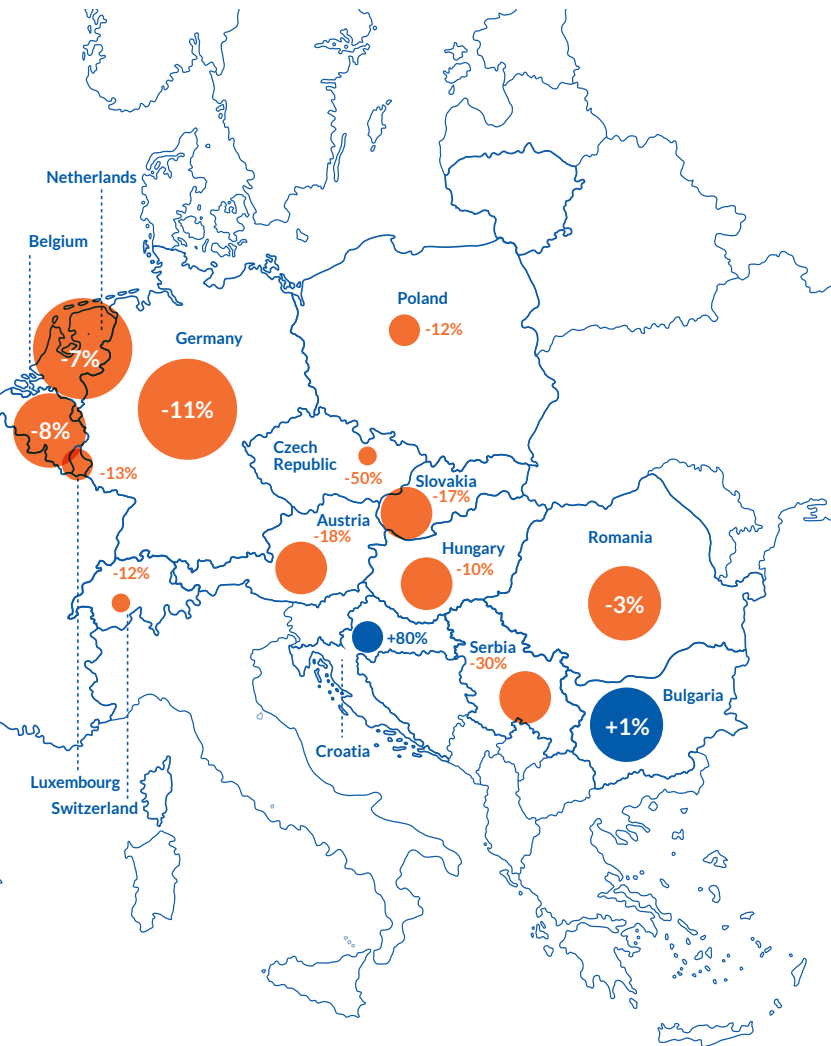
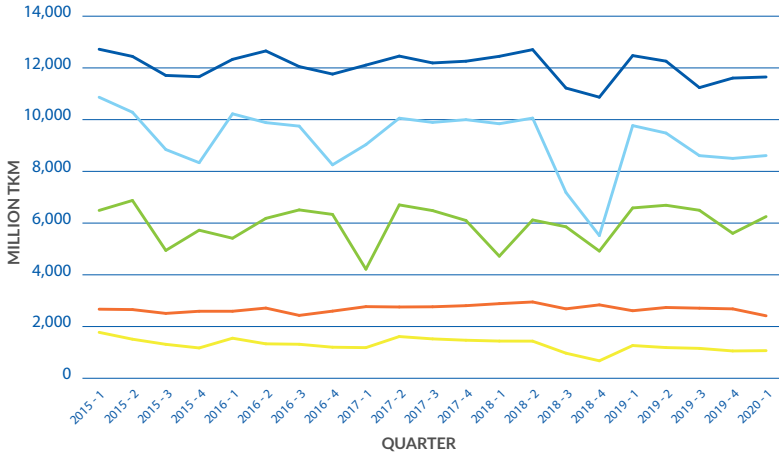


FIGURE 1: INLAND WATERWAY TRANSPORT (IWT) PERFORMANCE IN EUROPE BY REGION (IN MILLION TKM)

Sources: Eurostat [iww_go_qnave], Destatis, Statistical Office of the Republic of Serbia

■ Dutch inland waterways ■ Traditional Rhine ■ Danube
■ Belgian inland waterways ■ Rhine affluents



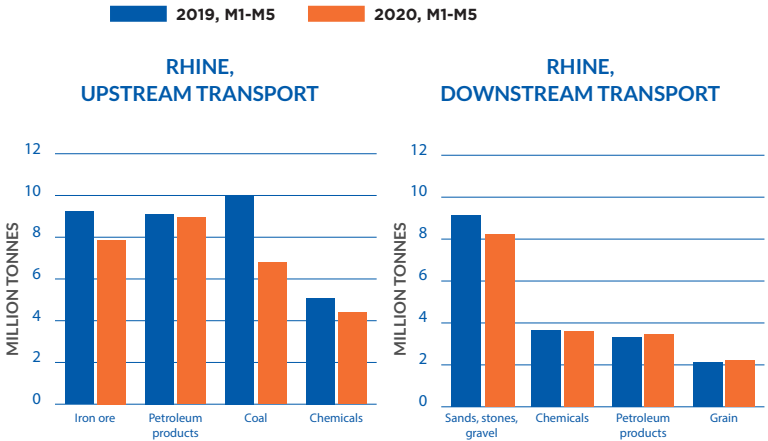
- In Q1 2020, transport performance on Dutch and Belgian inland waterways was 7% lower (Dutch waterways) and 8% (Belgian waterways) than in Q1 2019. For the traditional Rhine and the Rhine affluents (Moselle, Main, Neckar), the difference was somehow stronger with -12% (Rhine) and -16% (Rhine affluents). On the Danube, the decrease in transport performance was the smallest, with -5%.
- In Q1 2020, the effects of the Covid-19 crisis started to be felt in March 2020. A look at detailed transport statistics for the first five months of 2020 shows that the strongest reduction in Rhine transport took place for coal, a segment which, for structural reasons, was already losing volumes before the Covid-19 crisis.

Iron ore transport was reduced by 15% as it was affected by the temporary closure of automobile production plants.

- Transport of chemicals lost 8%, and sands, stones and gravel 12%. Downstream transport of grain and petroleum products registered a plus of 13% each. Grain transport benefited from a good harvest year. The increase for petroleum products is explained by the sharp drop in oil prices in spring 2020, which prompted an early replenishment of heating oil depots, thereby enhancing Rhine transport for these products. However, these effects were diminishing in autumn 2020, according to information provided by the German Federal Transport Office.

FIGURES 2 AND 3: RHINE TRANSPORT VOLUME UPSTREAM AND DOWNSTREAM FOR MAJOR CARGO SEGMENTS (IN MILLION TONNES, FOR THE FIRST FIVE MONTHS OF 2019 AND 2020)

Source: CCNR analysis based on Destatis

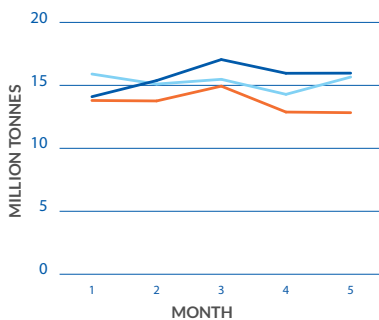


FIGURES 4 TO 7: **MONTHLY GOODS TRANSPORT ON THE TRADITIONAL RHINE** (IN THE FIRST FIVE MONTHS OF 2018, 2019 AND 2020, UPSTREAM PLUS DOWNSTREAM)

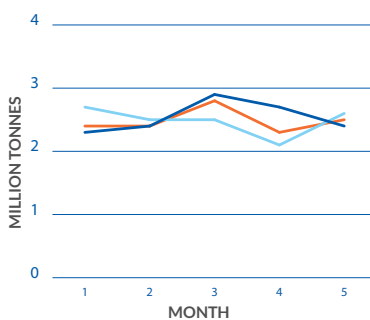
Source: CCNR analysis based on Destatis

2018 2019 2020

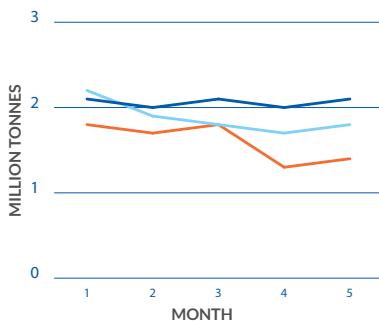
TOTAL GOODS TRANSPORT



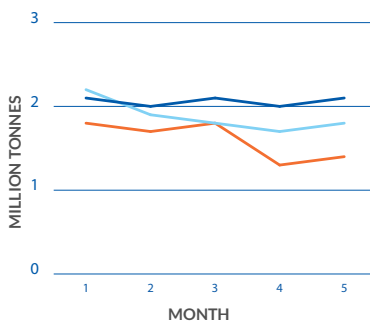
PETROLEUM PRODUCTS



IRON ORE



COAL

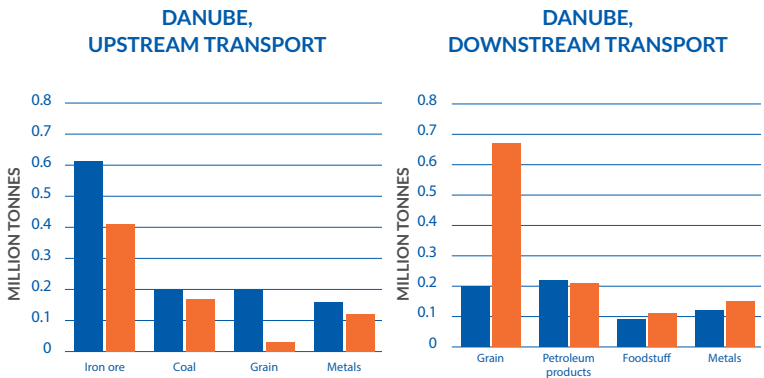


- With regard to Danube navigation, for which the statistics are from the measurement point of Mohács on the Middle Danube in southern Hungary, there is a certain parallel to Rhine navigation. Indeed, on the Danube, iron ore also lost volumes, while grain transport increased. In April 2020, in the middle of the Covid-19 pandemic, the amount of grain exported from the Middle Danube ports downstream was more than four times higher than in April 2019. This shows that inland navigation was able to play an important role in maintaining logistical chains in a fundamental economic sector.
- In the first five months of 2020, the most important goods segment in upstream transport on the Danube, iron ore, was heavily impacted by the falling steel and automobile production in Europe. It lost around 33% compared to the first five months of 2019.

FIGURES 8 AND 9: DANUBE TRANSPORT VOLUME UPSTREAM AND DOWNSTREAM FOR THE MAJOR CARGO SEGMENTS (IN MILLION TONNES, FOR THE FIRST FIVE MONTHS OF 2020 AND 2019)*

Source: Danube Commission Market Observation report
 * On the Middle Danube at Mohács / southern Hungary

2019, M1-M5 **2020, M1-M5**



TRANSPORT VOLUME IN MAIN EUROPEAN IWT COUNTRIES

FIGURE 10: INLAND SHIPPING TRANSPORT VOLUME (QUARTERLY DATA - IN MILLION TONNES)

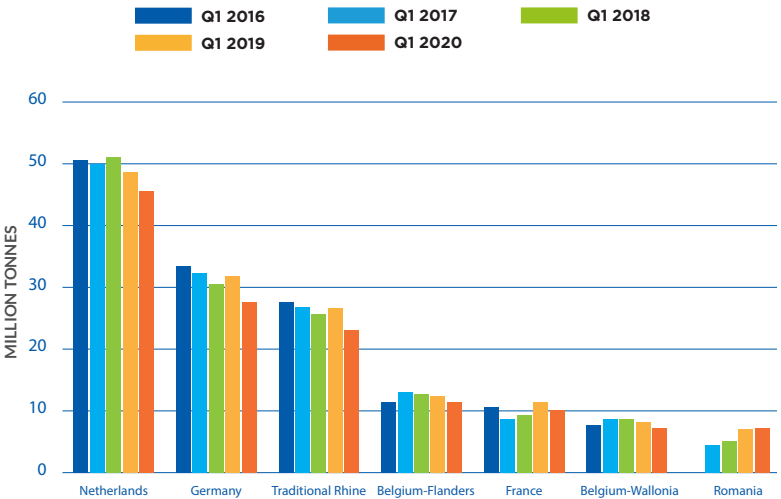
Source: Eurostat [iww_go_qnave]. For Belgium, Statbel figures for the 2019 and 2020 quarters were corrected in light of the data available from the waterway administrations in Belgium (De Vlaamse Waterweg and SPW Service Public de Wallonie).



DRY BULK, LIQUID BULK AND CONTAINER TRANSPORT

Sources: Centraal Bureau voor de Statistiek, Destatis, De Vlaamse Waterweg, SPW Service Public de Wallonie, Voies Navigables de France, Romanian Institute of Statistics.
 Note: for France and Wallonia, infra-annual container statistics in tonnes are not available. Hence, the product group "machines/other goods" was assumed to consist mainly of container transport

FIGURE 11: **DRY CARGO TRANSPORT** (IN MILLION TONNES)



IN MAJOR EUROPEAN IWT COUNTRIES, DRY CARGO TRANSPORT FOLLOWED A MORE OR LESS NEGATIVE TREND IN RECENT YEARS, WITH THE ONLY EXCEPTIONS BEING FRANCE AND ROMANIA.

FIGURE 12: LIQUID CARGO TRANSPORT (IN MILLION TONNES)

■ Q1 2016 ■ Q1 2017 ■ Q1 2018
■ Q1 2019 ■ Q1 2020

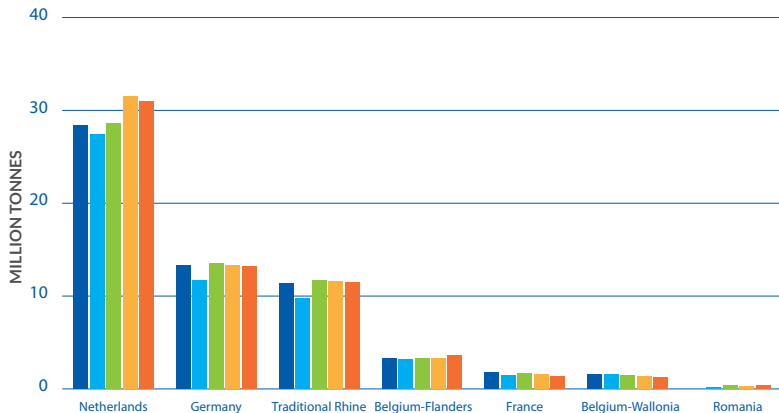
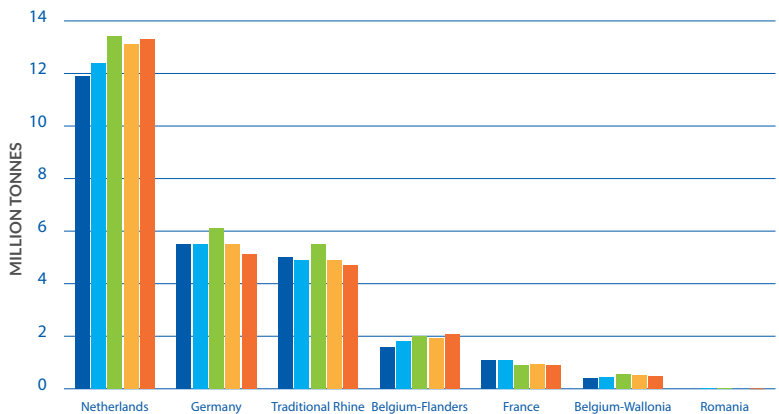


FIGURE 13: CONTAINER TRANSPORT (IN MILLION TONNES)

■ Q1 2016 ■ Q1 2017 ■ Q1 2018
■ Q1 2019 ■ Q1 2020



- The trend of energy transition, resulting in less coal transport, continued also in the first quarter of 2020. Regarding the Covid-19 crisis, its impact was only partly present in the first quarter (in March). Data for Q2 2020 would be needed to study the effects of Covid-19. Such data were available for the Netherlands, Romania and France, at the time this report was written.
- For the Netherlands, they show only limited reductions in cargo transport in this second quarter of 2020. IWT figures in the Netherlands decreased by 6% in Q2 2020 compared to Q2 2019. According to these (preliminary) data, there was a decrease of dry cargo transport in Q2 2020 by 9% in the Netherlands (compared to Q2 2019). Liquid cargo lost only 1% and container transport 3%. This rather favourable result for liquid cargo reflects the filling up of storage tanks for oil products, due to the reduction in oil prices in March.
- The Romanian data show trends that were also observed when looking at data for the Middle Danube at Mohács: a strong drop in iron ore transport, and a strong increase in grain transport. These trends can be explained by the falling European steel production in spring 2020. The strong rise in grain transport reflects the increased export of grain from the Middle Danube ports to the Lower Danube region (Black Sea region).



TABLE 1: VOLUME OF GOODS TRANSPORT IN Q2 2020 COMPARED TO Q2 2019 IN ROMANIA (IN MILLION TONNES)

Source: Romanian Institute of Statistics (<https://insse.ro/cms/en/content/harbour-transport-goods-and-passengers-semi2020>)

	Q2 2019	Q2 2020	Change in %
Total transport	8.19	7.55	-7.9
Iron ore	2.85	1.50	-47.4
Grain	1.44	2.40	+66.4
Sands, stones, gravel	1.95	2.07	+6.2
Other dry bulk	0.49	0.47	-4.7
Coal	0.51	0.38	-24.5
Metals	0.40	0.30	-25.4
Petroleum products	0.42	0.23	-43.5

- In France, transport in the largest cargo segment (sands, stones, gravel) decreased by almost 35% in Q2 2020, due to the temporary closure of important building and construction sites, but transport



in the second largest segment (agricultural segment, grain) slightly increased (+0,8%). Indeed, this segment benefited from a good harvest season 2019/2020. All other cargo segments went down. Overall, IWT transport in France fell by 23,6% in Q2 2020.

TABLE 2: **VOLUME OF GOODS TRANSPORT IN Q2 2020 COMPARED TO Q2 2019 IN FRANCE** (IN MILLION TONNES)

Source: VNF

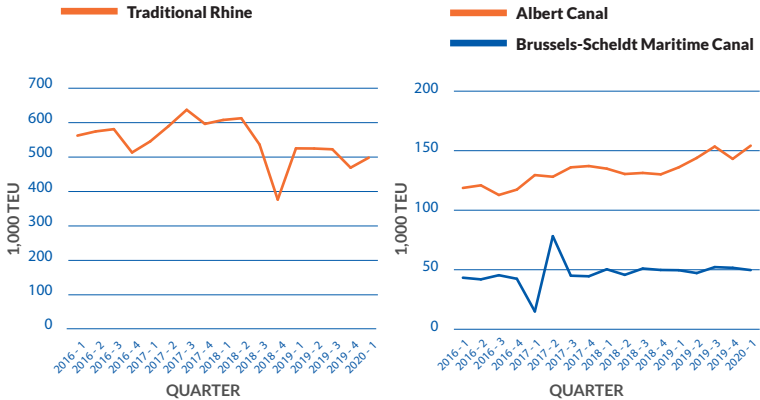
	Q2 2019	Q2 2020	Change in %
Total transport	14.8	11.3	-23.6
Sands, stones, gravel	6.64	4.33	-34.8
Grain	3.03	3.06	+0.8
Petroleum products	0.96	0.87	-9.8
Machines, equipment	0.89	0.79	-10.9
Food products	0.92	0.65	-29.1
Chemicals	0.52	0.46	-11
Fertilizer	0.39	0.35	-8.6



FIGURES 14 TO 19: EVOLUTION OF CONTAINER TRANSPORT FOR SELECTED EUROPEAN WATERWAYS (IN 1,000 TEU)

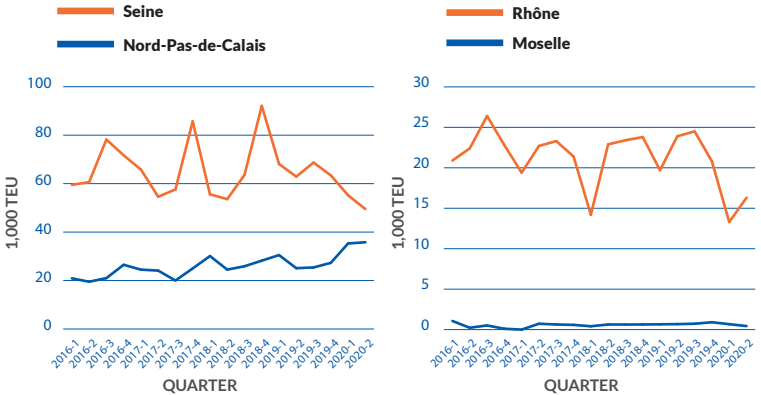
Sources: Destatis, De Vlaamse Waterweg, VNF

- On the Rhine, the TEU result in Q1 2020 was 6.2% higher than in Q4 2019, but also 5.1% lower than in Q1 2019. The Albert Canal increased its result by 7.4% compared to Q4 2019 and by even 13.4% compared to Q1 2019.

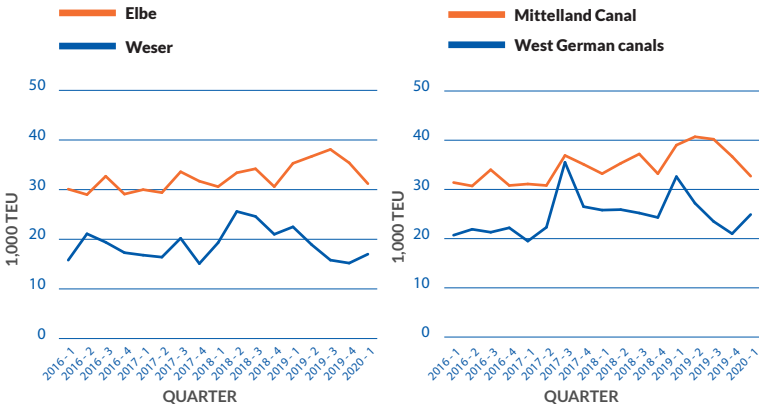


CONTAINER TRANSPORT ON THE RHINE HAS NOT YET RETURNED TO THE LEVELS THAT WERE PRESENT BEFORE THE LOW WATER YEAR OF 2018.

- While container transport on the Seine and the Rhône suffered under the Covid-19 crisis, in the Nord-Pas-de-Calais region it even increased, and settled at an all-time-high level in Q2 2020.



- Container transport on the Elbe and the Mittelland Canal showed falling TEU volumes in Q4 2019 and Q1 2020. On the Weser and the West German canals, TEU volumes picked up slightly in Q1 2020.





02

OPERATING CONDITIONS

- In the Rhine region, freight rates for dry cargo followed a downward trend in the first half of 2020. Spot market rates for coal, iron ore and metals were around 21-22% lower in the Rhine region, compared to the first half year of 2019. Freight rates for sands, stones, gravel and agribulk also decreased, but in a less pronounced manner.
- Spot market freight rates for mineral oil products mostly decreased in the first half year of 2020, the month of May being the only exception, when the return to a 24 hours a day operation of locks on the Upper Rhine brought a temporary upward movement in freight rates (due to a higher transport demand).
- Turnover development per country shows a limited decrease for goods transport, but a very clear decrease for passenger transport. For French passenger transport companies, financial turnover was 91% lower in the second quarter of 2020 compared to Q2 2019.

IMPACT OF WATER LEVEL CONDITIONS

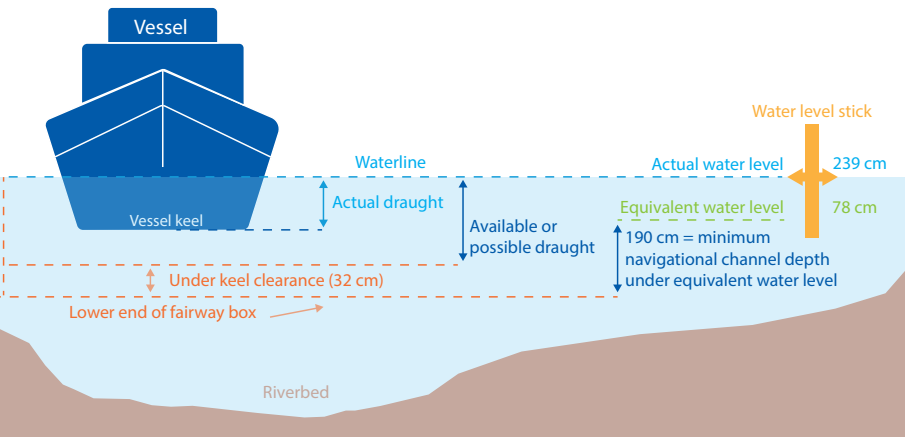
- The available or possible draught of a vessel is an important economic parameter. A high possible draught enables high loading degrees, thereby realising economies of scale and high transport volumes, and lowering unit costs. A detailed model for estimating the effect of low water on the loading capacity of inland ships of different types and size was recently published in the European Journal of Transport Infrastructure Research.¹ For IWT as a whole, high loading degrees could enable IWT to gain modal shares on the transport market.
- The available or possible draught of an inland vessel can be calculated on the basis of the actual water level, the equivalent water level and the minimum navigation channel depth that is guaranteed by the waterway administration under the condition of the equivalent water level. In addition, a security margin under the keel (under keel clearance) has to be taken into account.² The equivalent water level refers to a low water level under which, on a 30-year average, the water levels do not fall below more than 20 ice free days per year.
- Figure 1 illustrates a vessel sailing with a certain actual draught (due to a certain weight of goods loaded) at the gauge station of Kaub/Middle Rhine. At this gauge station, the equivalent water level is 78 cm, and the related minimum navigation channel depth 190 cm. For the under keel clearance, 32 cm were assumed. The chosen date to determine the available or possible draught in this illustration is 3 September 2020, when actual water levels were 239 cm on average.

¹ Van Dorsser, C. et al. Effect of low water on loading capacity of inland ships. *European Journal of Transport and Infrastructure Research*, v. 20, n. 3, p. 47-70, sep. 2020. ISSN 1567-7141. Available at: <https://journals.open.tudelft.nl/ejtir/article/view/3981>

² Possible or available draught = minimum navigation channel depth + (actual water level - equivalent water level) - under keel clearance.

FIGURE 1: ACTUAL WATER LEVEL, ACTUAL DRAUGHT, EQUIVALENT WATER LEVEL, MINIMUM NAVIGATION CHANNEL DEPTH AND POSSIBLE OR AVAILABLE DRAUGHT AT KAUB/ MIDDLE RHINE*

Source: CCNR based on German Federal Institute of Hydrology (BfG) (2015)
 *The distances in this drawing are not at scale.



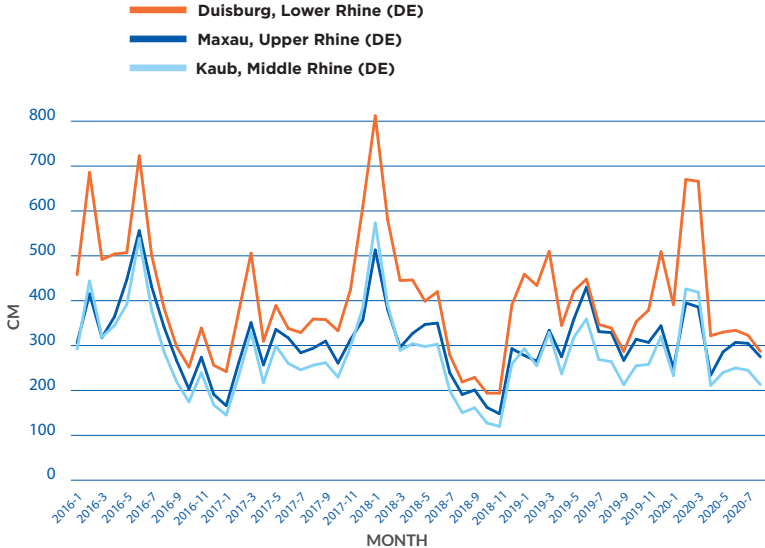
- In the example above, it can be seen that the vessel could have loaded more weight as it did not fully exploit the available or possible draught on that day at Kaub.
- From the viewpoint of the German waterway administration, for a river bed with sand or gravel soil, an under keel clearance of at least 20 cm is sufficient. The under keel clearance for a rocky river bed should be between 20 cm and 40 cm.

- The following figures show the available draught for several important gauge stations on the Rhine and the Danube until August 2020.³

FIGURES 2 AND 3: IMPACT OF HYDRAULICITY - AVAILABLE OR POSSIBLE DRAUGHT OF VESSELS AT IMPORTANT GAUGING STATIONS ALONG THE RHINE AND DANUBE (IN CM)

Sources: CCNR calculation based on data from the German Federal Waterways and Shipping Administration, provided by the German Federal Institute of Hydrology (BfG), and data from the Federal State of Lower Austria (<https://www.noel.gv.at/wasserstand/#/de/Messstellen/Map/Wasserstand>)

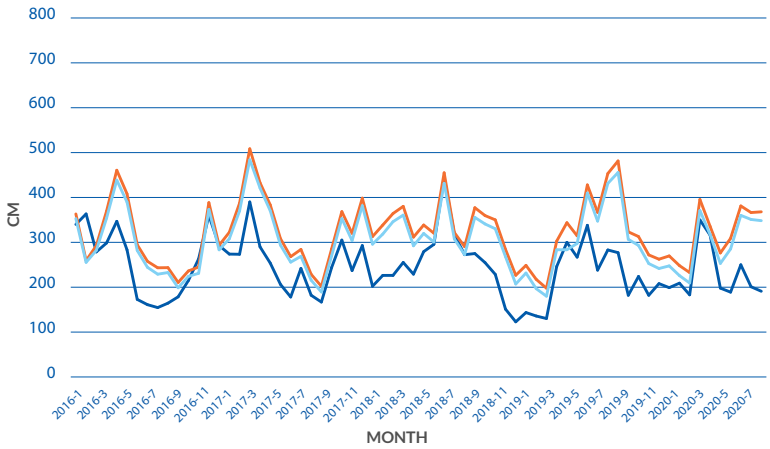
RHINE



³ In these calculations, the following values were taken for the under-keel clearance: 32 cm for Kaub, 21 cm for Maxau, 27 cm for Duisburg, and 40 cm for the three Danube gauge stations. The values regarding the Rhine stations are published in a report by the Swiss Association of Shipping and Port Economics (see the article written by the Swiss Association of Shipping and Port Economics (Schweizerische Vereinigung für Schifffahrt und Hafengewirtschaft), in: SVS Aktuell, Dec. 2018/Jan. 2019, pages 7 and 8, available at: http://www.svs-ch.ch/sites/default/files/svs-aktuell/winter_2018.pdf). The values regarding the Danube are recommended by viadonau.

DANUBE

- Kienstock, Upper Danube (AUT)
- Wildungsmauer, Upper Danube (AUT)
- Pfelling, Upper Danube (DE)

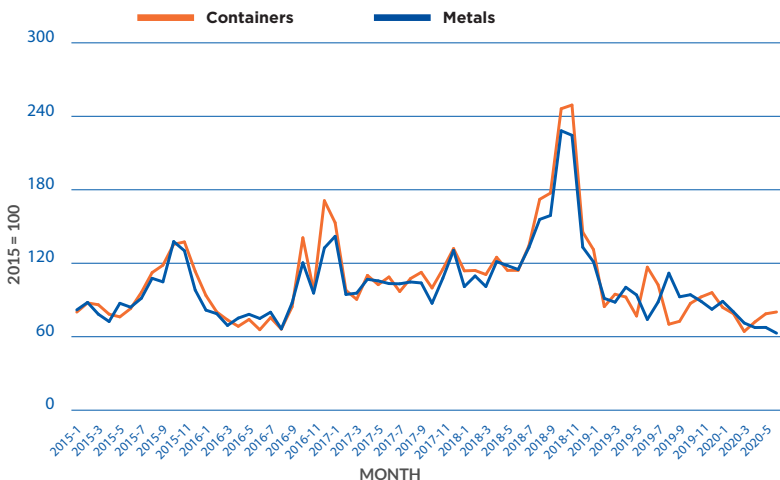
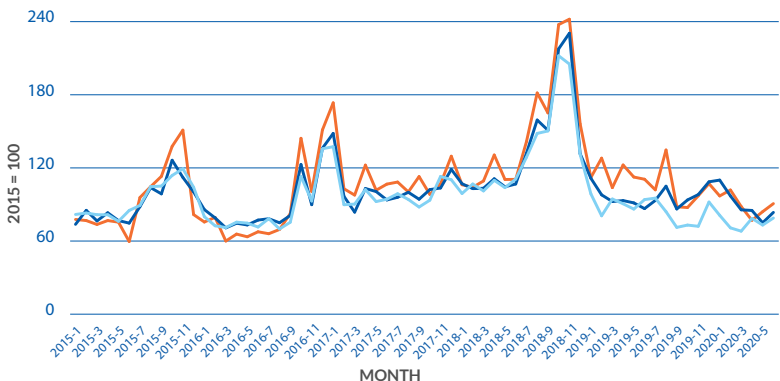


FREIGHT RATES IN THE RHINE AND DANUBE REGIONS

FIGURES 4 AND 5: FREIGHT RATE EVOLUTION FOR DRY CARGO IN THE RHINE REGION (INDEX 2015=100)

Source: Panteia

Coal and iron ore Sands, stones, gravel Agribulk

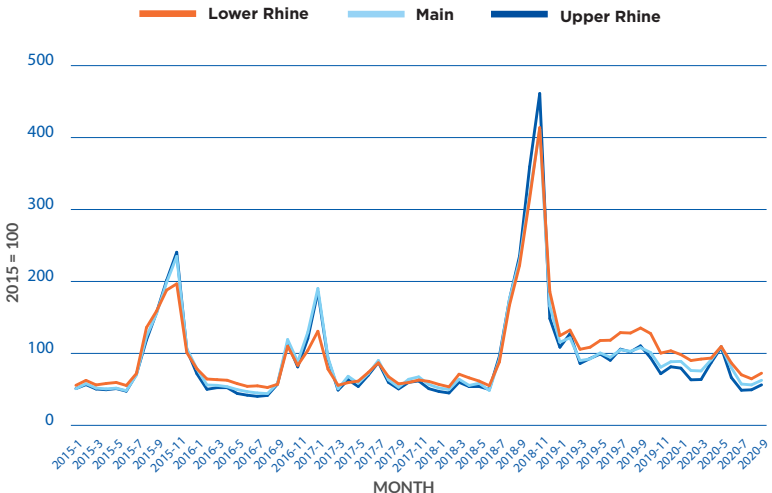


- Dry cargo freight rates (spot market) in the Rhine region came under pressure in the first half of 2020. According to freight rate data collected by Panteia, freight rates for coal, iron ore and metals had the strongest reduction compared to the first half of 2019, with -22% (coal and iron ore) and -21% (metals). The structural decline in coal transport, and the negative effects of Covid-19 on steel production and automobile production can largely explain this trend.
- For sands, stones and gravel as well as agribulk, the decrease in freight rates was somehow smaller (-6% and -17% respectively). Freight rates in container transport (spot market rates) were, in the first half of 2020, 23% lower than in the same period one year earlier. It should be noted that most container ships operate under a time charter agreement. The evolution shown in the graph concerns spot market freight rates and can therefore differ from time charter rates.

FIGURE 6: FREIGHT RATE EVOLUTION FOR GASOIL FROM THE ARA REGION TO RHINE DESTINATIONS (INDEX 2015=100)*

Source: CCNR calculation based on PJK International

* PJK collects freight rates (in Euro per tonne) for ARA-Rhine trade of liquid bulk. The CCNR transforms these values into an index with base year 2015. Lower Rhine: Duisburg, Cologne. Upper Rhine: Karlsruhe, Basel. Main: Frankfurt/M.

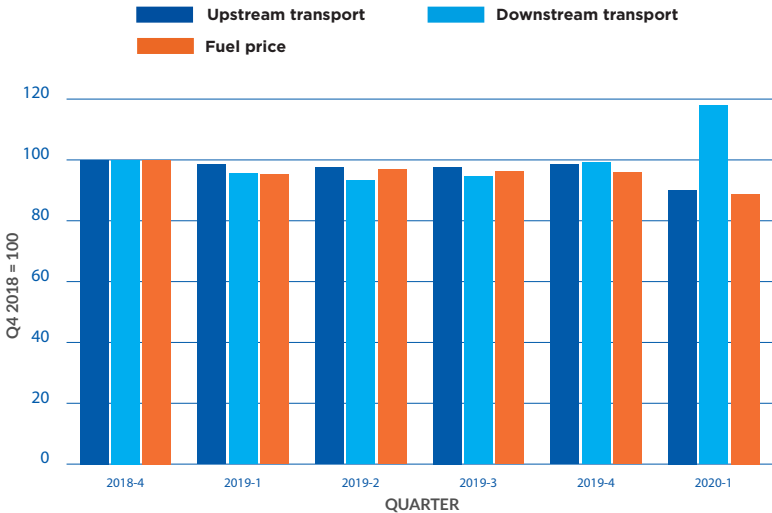


- Factors which supported spot market freight rates for liquid cargo transport on the Rhine in the first half year of 2020 were low oil prices and relatively low water levels (see figures above). Low spot market oil prices, in combination with a 'contango'⁴ situation on future oil markets, meant that importers saw it as profitable to import oil products, store them and get their price risk covered by the future market. At the beginning of May 2020, the restoration of the 24 hours a day operation of Upper Rhine locks brought some temporary extra transport activity, reflected by a sudden upward movement in freight rates.
- This effect subsided in June and in the following months, so that freight rates decreased. In July, August and September 2020, gasoil freight rates were much lower than in the same months one year earlier. For the Lower Rhine, the average difference in Q3 2020 compared to Q3 2019 was -47%, and for the Upper Rhine even -51%, and -57% for the Main. These strong reductions in autumn 2020 can be explained by the fact that the usual replenishment effects for heating oil were barely present in autumn 2020, as depots had already been filled up in the spring when oil prices dropped sharply (see chapter 1).
- In Q1 2020, freight rates in Danube navigation – in downstream transport – were 24% higher than in Q1 2019. It was the increase in downstream transport of grain (see chapter 1), which triggered this uptake. Within upstream transport, freight rates went down (-9%) due to less iron ore transport during the first months of 2020 (see chapter 1). There was also a reduction in fuel prices due to lower oil prices, by -7% compared to 2019.

⁴ Contango is a situation where spot market prices are below prices for a future delivery of oil products.

FIGURE 7: **FREIGHT RATE EVOLUTION IN DANUBE NAVIGATION**
 (INDEX Q4 2018 = 100)

Source: Danube Commission Market Observation report

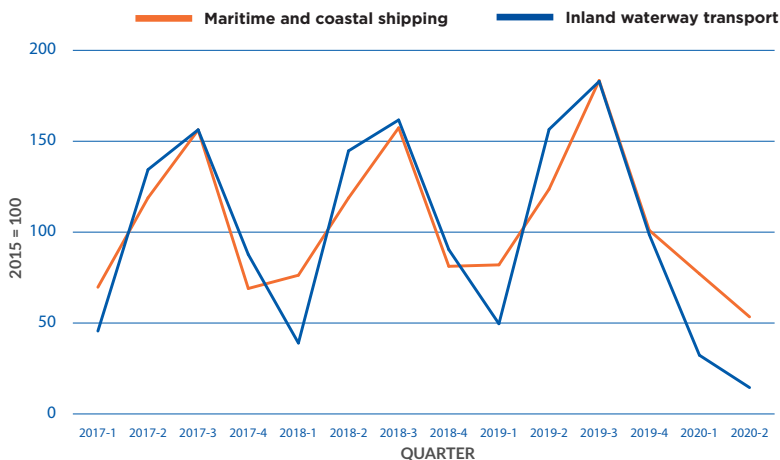


GRAIN IS THE MAJOR DOWNSTREAM CARGO SEGMENT ON THE DANUBE. GRAIN DELIVERIES FROM THE MIDDLE DANUBE TO THE BLACK SEA REGION PICKED UP STRONGLY IN 2020. THIS HAD A POSITIVE EFFECT ON FREIGHT RATES FOR DOWNSTREAM TRANSPORT ON THE DANUBE.

QUARTERLY IWT TURNOVER EVOLUTION PER COUNTRY IN EUROPE

FIGURE 8: TURNOVER EVOLUTION OF FRENCH PASSENGER TRANSPORT COMPANIES (INDEX 2015 = 100)

Source: INSEE - Indice de chiffres d'affaires



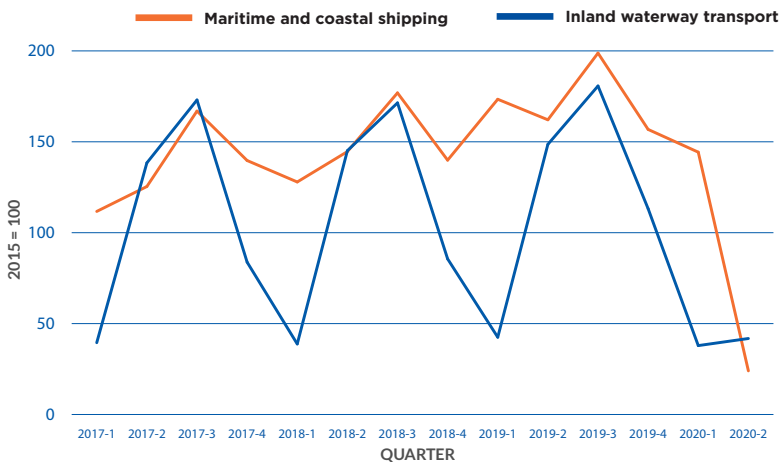
- In Q1 2020, turnover from IWW passenger transport in France was 35% below the Q1 2019 value. In Q2 2020, IWW turnover fell by 91% compared to the same quarter one year earlier.
- By mid-March, the time when the cruise season normally starts, the whole activity of passenger transport (river cruises and day trip excursions) halted completely. It was only at the end of May that some day trip vessels and small cruise vessels took up their activity, although with a rather limited number of passengers. Larger cruise vessels were authorised to sail only from the first half of July onwards.⁵ However, not all large river cruises resumed their operation. For instance, Viking river cruises, a company which proposes river cruises in France, decided to extend the suspension of operations applying to all its river cruises until the end of 2020.

⁵ See the article in the journal NPI « Accompagner les entreprises, une priorité absolue », September 2020

- The harsh reduction in turnover in France can be explained by the almost complete absence of overseas (US-Americans, Canadians, Australians) and British tourists. These source markets play an essential role as clients for passenger shipping in France, in particular within the segment of cruise traffic (both large and small cruise vessels).

FIGURE 9: **TURNOVER EVOLUTION OF GERMAN PASSENGER TRANSPORT COMPANIES** (INDEX 2015 = 100)

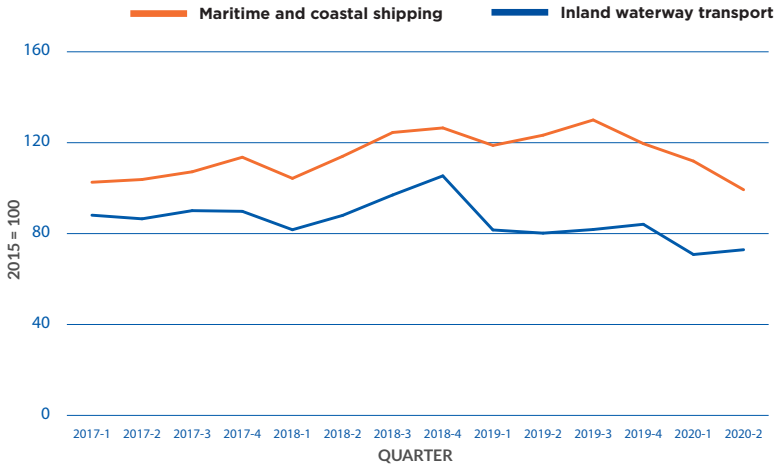
Source: Destatis



- Turnover in German passenger transport dropped by 11% in Q1 2020 compared to Q1 2019. In Q2 2020, due to the cancellations of river cruises and day trip excursions on a large scale, turnover from IWW passenger transport was 72% below the level of Q2 2019. It is noted that this decrease was lower than in France, due to the explained structure of the demand side according to nationalities. In maritime and coastal shipping, the rate of reduction was even higher, at 85%.

FIGURE 10: **TURNOVER EVOLUTION OF GERMAN GOODS TRANSPORT COMPANIES** (INDEX 2015 = 100)

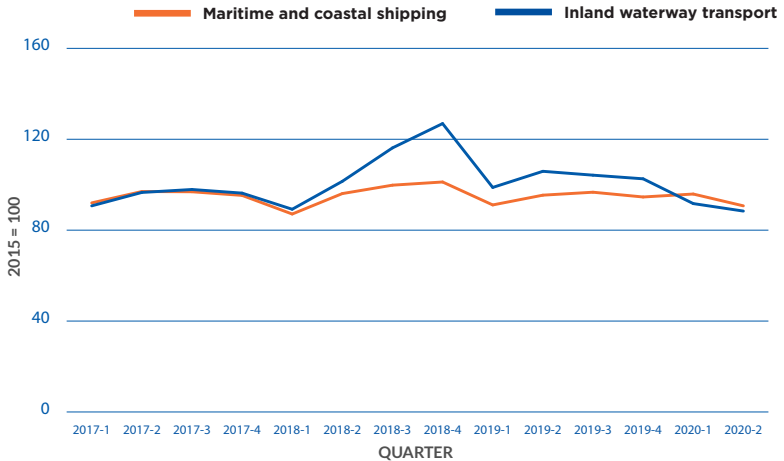
Source: Destatis



- Comparing the evolution in maritime/coastal shipping with inland waterway transport, it can be observed that the reduction of turnover from cargo transport amounted to -9% in Q2 2020 in IWT, compared to -19% in maritime/coastal shipping. In the German cargo sector, the Covid-19 pandemic therefore had a more severe effect on turnover in the maritime segment than in IWT. These figures confirm also that turnover in cargo transport was less effected than turnover in passenger transport.

FIGURE 11: TURNOVER EVOLUTION OF DUTCH TRANSPORT COMPANIES (INDEX 2015 = 100)

Source: CBS



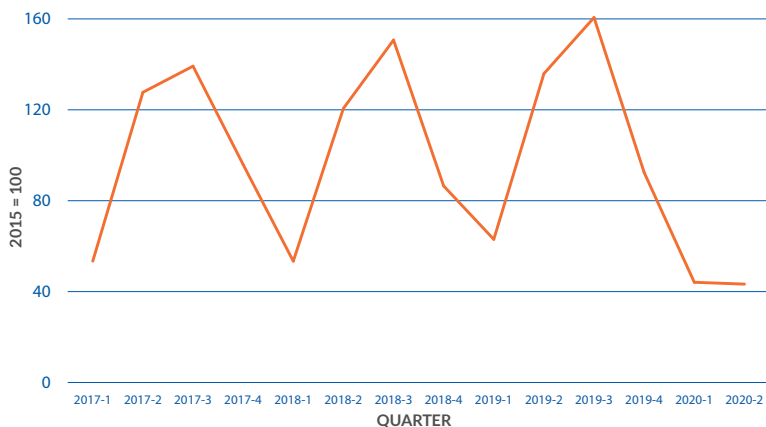
- In the Dutch transport sector, turnover in IWT (freight and passenger transport taken together) is dominated by freight transport (92% of total turnover). Total turnover dropped by 7% in Q1 2020 (compared to the same quarter one year earlier), while there was an increase by 5% in maritime and coastal shipping. In the second quarter of 2020, the quarterly year-on-year reduction in turnover amounted to -17% in IWT, and to -5% in maritime and coastal transport.
- Although separate figures for passenger transport in the Netherlands are not available, some experiences from shipping companies can already shed some light on the effects of the Covid-19 pandemic. An article about a day-trip shipping company, active on the river IJssel, indicates a reduction of turnover by 70% in March and April.⁶ Meanwhile, the activity is recovering, but with a low capacity utilisation. For instance, one of the said company's vessels has a capacity of 250 passengers, but it can only receive 70 passengers at present to comply with the current sanitary requirements.

⁶ See the article "Rederij Celjo signaleert licht herstel rond-en partyvaart", in: *Weekblad Schuttevaer*, 2 September 2020

- Some cases of passenger companies whose turnover was not negatively affected by Covid-19 also exist. For instance, a company with three small historical watertaxis (with a capacity inferior to 10 passengers) in Dordrecht reported that by intensifying its marketing activity in the region, targeting the local population, the reduction in the number of foreign tourists could be compensated.⁷

FIGURE 12: TURNOVER EVOLUTION OF AUSTRIAN IWW TRANSPORT COMPANIES (INDEX 2015 = 100)

Source: Eurostat [sts_setu_q]



- In Austria, total turnover from inland waterway transport is dominated by passenger transport, due to the higher number of companies active in this field.⁸ In Q2 2020, a 68% decrease in total Austrian IWT turnover could be observed compared to Q2 2019, which is very similar to the effect in German passenger transport where the observed drop was 72%.

⁷ See the article in *Weekblad Schuttevaer*: "Rondvaartschip Si Barone beleeft beste seizoen ooit". 7 September 2020

⁸ There are no up-to-date figures for the split of turnover between freight and passenger transport for Austria. The latest figures available are for the year 2014, and they show a share of 56% of passenger transport in total IWW turnover. It can be strongly assumed that this share has risen further in the years 2015-2019, due to the absence of growth in freight transport, and a growing activity in passenger transport.

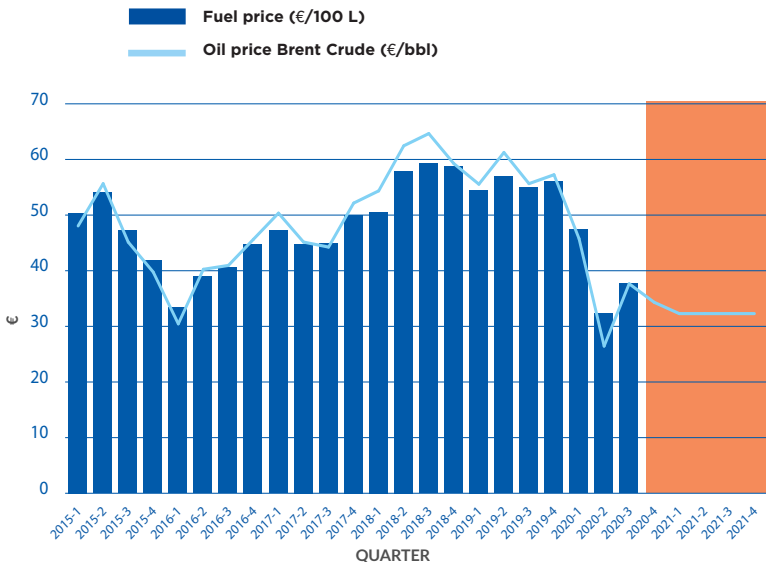
COST EVOLUTION

- Fuel costs are analysed on the basis of gasoil/diesel prices published by the energy price monitoring system of the Belgian Ministry of Economic Affairs. The prices are maximum prices and valid for a purchase volume of at least 2,000 litres of gasoil. As the following figure shows, there is a strong correlation with the evolution of crude oil prices (Brent).

FIGURE 13: AVERAGE FUEL PRICES ACCORDING TO THE BELGIAN MINISTRY OF ECONOMIC AFFAIRS AND BRENT CRUDE OIL PRICES INCLUDING FORECAST*

Sources: ITB and SPF Economie (fuel price), US Energy Information Administration (oil price), Federal Reserve Economic Data (exchange rate US-Dollar/Euro)

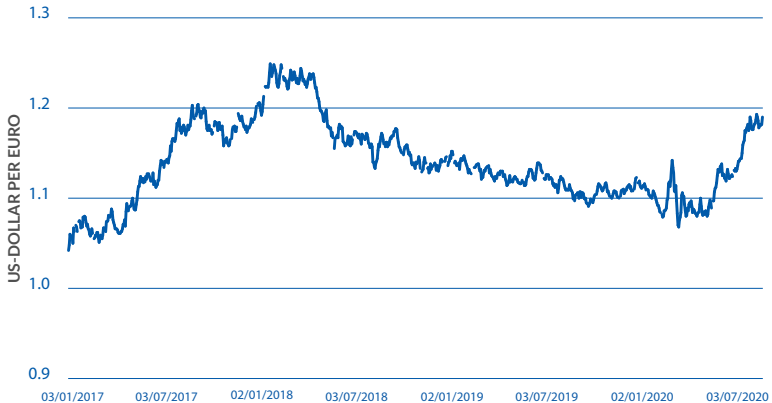
* Oil price forecast from IMF World Economic Outlook, April 2020. This forecast contains the assumption of an appreciation of the Euro (= depreciation of the US-Dollar) from 1.18 US-\$ per Euro in September 2020 up to 1.22 US-\$ per Euro in Q4 2022. 1 barrel (bbl) = 159 Litres.



- With decreasing oil prices in the first half of 2020, fuel prices declined as well and both indicators picked up only slightly in Q3 2020. With declining fuel costs, inland navigation companies, faced with reductions in transport demand, experienced a reduction in their operational costs.
- Fuel prices are expected to remain low in 2021. Next to low oil prices, the depreciation of the US-Dollar towards the Euro plays another role. This trend started in May 2020 and is expected to continue in 2021, due to stronger economic damages in the US in the wake of the Covid-19 crisis compared to Europe.⁹

FIGURE 14: U.S. DOLLAR / EURO FOREIGN EXCHANGE RATE, U.S. DOLLARS TO ONE EURO (DAILY DATA)

Source: Federal Reserve Economic Data (<https://fred.stlouisfed.org>)



⁹ See the article in the "Handelsblatt", 13 August 2020, with an interview with professor of economics, Dr. Bernd Rürup

- A decrease in fuel costs is also expected by Panteia in its cost monitoring, released in February 2020. The reduction in fuel costs is especially relevant for capital intensive new vessels, which have to sail a great number of hours in order to reach the reimbursement of their loans. Next to fuel costs, capital costs are also expected to decrease, as the Covid-19 crisis leads to lower interest rates due to more liquidity flooding the markets and interest rate cuts, in order to stimulate the economy in Europe.





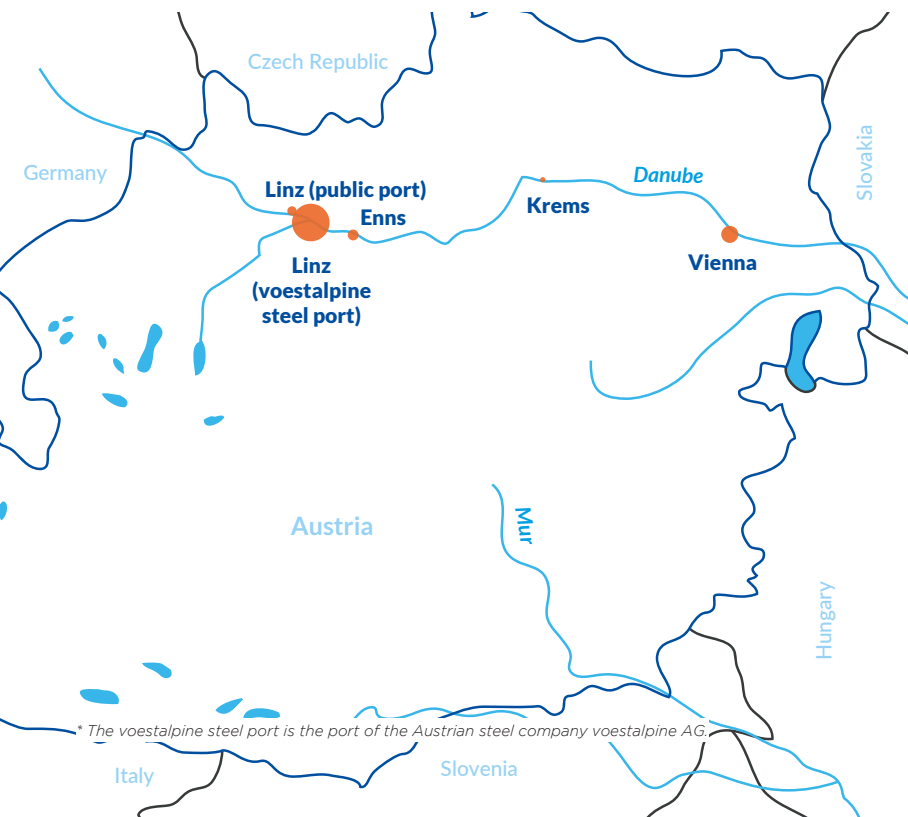
03

FOCUS ON AUSTRIA

- The “Focus on” chapter deals with Austria, where 48% of goods transport on inland waterways was made up of agricultural products, iron ore and scrap metal in 2019. Petroleum products had a share of 17%.
- The modal split share of IWT in the multimodal Danube corridor (road, rail, river) is the highest for imports from Austria’s eastern neighbouring countries. Within this corridor, Danube traffic reaches a modal share of 27% for cross-border import traffic from the east.
- Passenger transport on Austrian inland waterways is composed of cruise traffic, day trip excursions on the Danube and on lakes. Cruise traffic on the Austrian Danube is a fast-growing business, with a cruise trips growth rate of 80% between 2010 and 2019. The day trip excursions growth rate on the Austrian Danube was 9% between 2010 and 2019. Both segments suffered during the first half of 2020, as turnover figures confirm.

AUSTRIAN INLAND PORTS' WATERSIDE TRAFFIC

Port	Waterside traffic 2019 in million tonnes
Linz (voestalpine steel port)*	2.696
Vienna	1.227
Enns	0.779
Linz (public port)	0.665
Krems	0.370

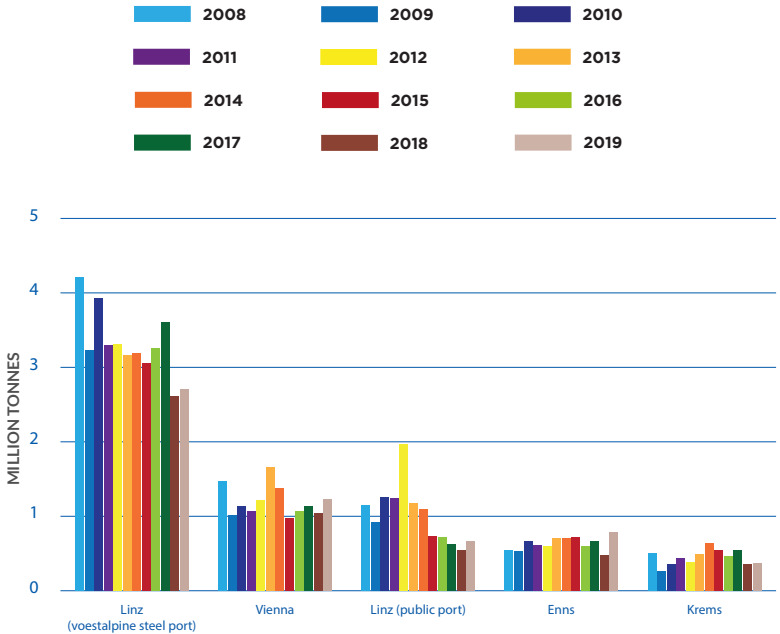


* The voestalpine steel port is the port of the Austrian steel company voestalpine AG.

FIGURE 1: WATERSIDE PORTS TRAFFIC IN THE LARGEST AUSTRIAN INLAND PORTS 2008-2019 (IN MILLION TONNES)*

Source: viadonau

* In 2019 these ports represented 82.4% of all waterside ports traffic in Austria.



THE LARGEST AUSTRIAN INLAND PORT IS LOCATED IN LINZ AND BELONGS TO THE AUSTRIAN STEEL INDUSTRY.

TABLE 1: WATERSIDE PORT THROUGHPUT IN DANUBE COUNTRIES, Q1 2020 COMPARED TO Q1 2019

Source: Danube Commission

German ports are the Danube ports in Germany. For Bulgarian ports, the data are partly missing and are therefore not comparable.

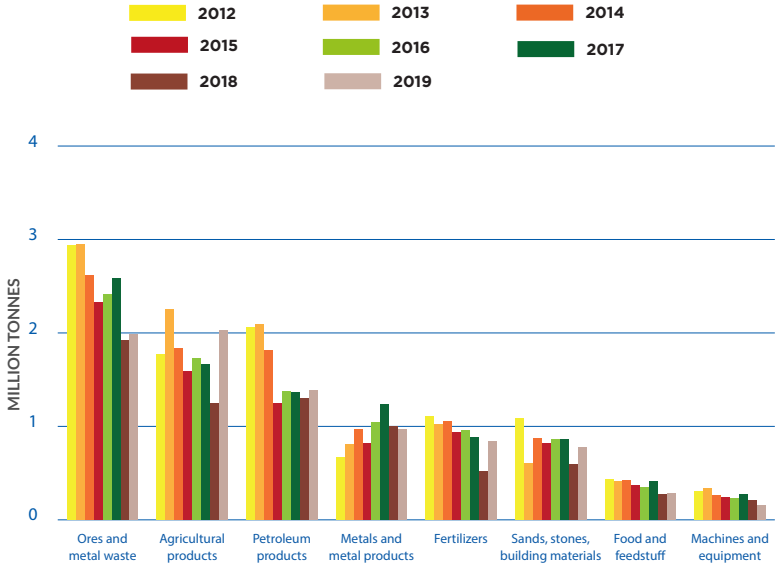
Country	Q1 2019 in million t	Q1 2020 in million t	Rate of change in %
Romanian ports	6.212	6.668	+7.3
Serbian ports	2.662	1.845	-30.7
Austrian ports	2.016	1.709	-15.2
Hungarian ports	1.526	1.597	+4.7
Ukrainian ports	1.569	1.278	-18.5
German ports	0.899	0.765	-14.9
Slovakian ports	0.523	0.390	-25.5
Moldavian ports	0.284	0.296	+4.4
Croatian ports	0.137	0.190	+38.7



FIGURE 2: IWT ON THE AUSTRIAN DANUBE BY GOODS SEGMENT (IN MILLION TONNES), 2012-2019*

Source: *viadonau* (several annual reports)

* Not shown are chemicals and coal due to very low numbers.



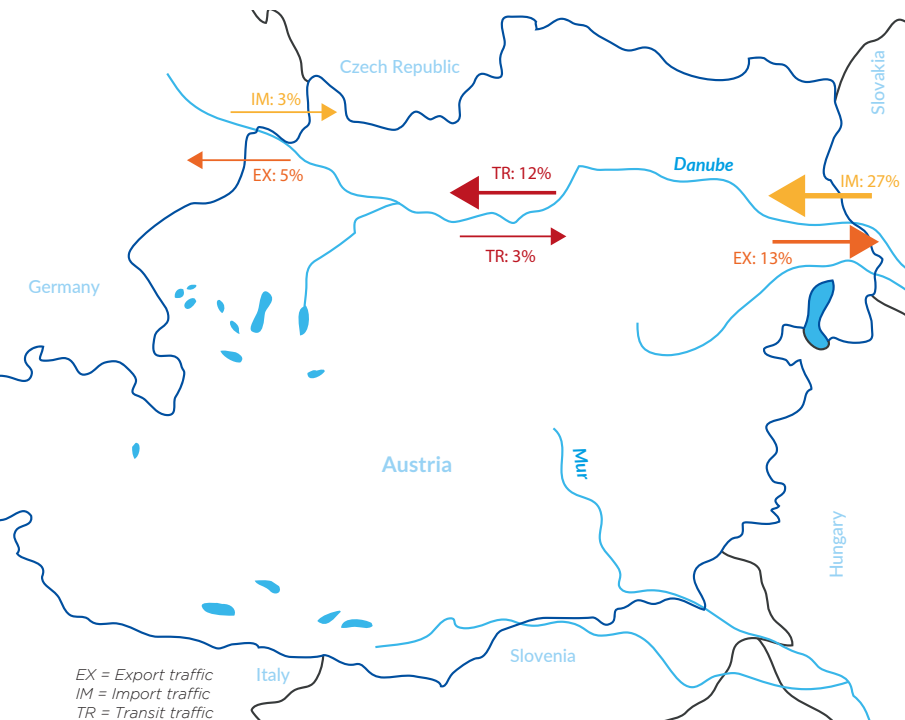
- Import traffic plays an important role for IWT in Austria. While agricultural products are mainly imported into (43%) or transiting (50%) through Austria, iron ore has an import share of almost 100%. It is mainly delivered by upstream transport from the Lower and Middle Danube region, and its destination is the steel industry in Linz (see also ports figures). Within the Danube corridor, the river Danube reaches a modal split share of 27% for cross-border import traffic from the eastern direction (modal share within road, rail and IWT).

- Within transit traffic, the modal split share of the Danube is also higher for upstream traffic (12%) than for downstream traffic (3%). For export traffic, the Danube's share is again higher for the eastern trading route (13%) than for the western route (5%).

MODAL SPLIT SHARE OF IWT WITHIN CROSS-BORDER TRAFFIC IN THE AUSTRIAN DANUBE CORRIDOR (IN % OF ROAD, RAIL AND IWT)*

Sources: Austrian Institute for Regional Studies and viadonau

* Data for 2019





FACT SHEET IWT IN AUSTRIA - ANNUAL FIGURES

ABSOLUTE VALUE¹⁰ FOR AUSTRIA VS SHARE IN EU TOTAL

Notes on the factsheet - See page 54

TRANSPORT PERFORMANCE TOTAL

1,715 million TKM

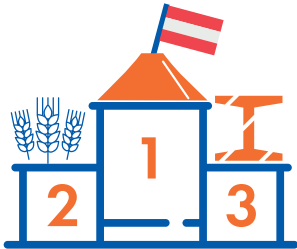
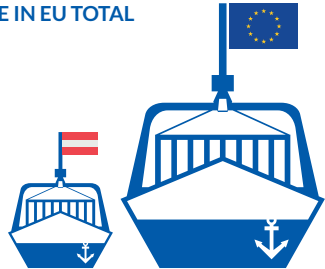
1.2% SHARE IN EU TOTAL

Volume of total goods transport:

8.512 million tonnes (# - See page 54)

Volume of container transport:

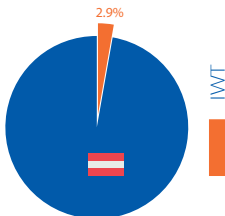
8,000 tonnes (3,967 TEU) (# - See page 54)



GOODS SEGMENTS IN IWT

1. Ores, sands, stones: 565 million TKM
1.6% SHARE IN EU TOTAL
2. Agricultural products: 529 million TKM
3% SHARE IN EU TOTAL
3. Metals and metal products: 201 million TKM
2.3% SHARE IN EU TOTAL

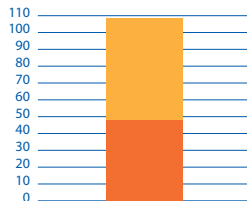
MODAL SPLIT SHARE OF IWT TOTAL TRANSPORT PERFORMANCE



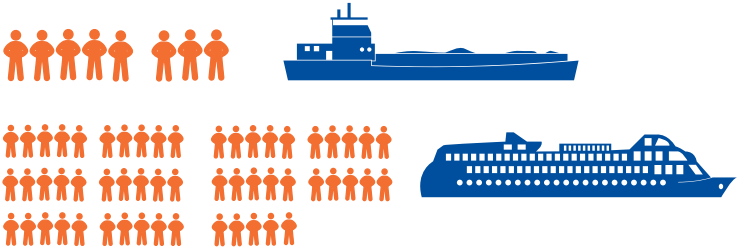
LEVEL OF IWT TURNOVER

108.4 million € **1.4% SHARE IN EU TOTAL**

- Goods transport: 47.6 million € **0.8%**
- Passenger transport: 60.8 million € **2.8%**



¹⁰ Data on transport demand and fleet data are for 2019, the modal split, and data on companies for 2018, and data on employment and turnover for 2014.



PERSONS EMPLOYED IN IWT

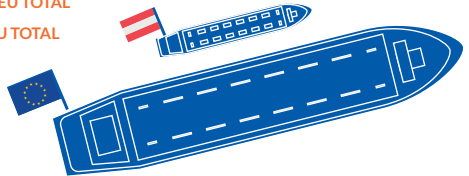
627 **1.5% SHARE IN EU TOTAL**
 Goods transport: 81 **0.4% SHARE IN EU TOTAL**
 Passenger transport: 546 **2.9% SHARE IN EU TOTAL**

NUMBER OF IWT COMPANIES

92
 Goods transport: 11
 Passenger transport: 81

NUMBER OF ACTIVE CARGO VESSELS

Dry cargo: 186 (* - See page 54) **1.6% SHARE IN EU TOTAL**
 Liquid cargo: 19 **1.1% SHARE IN EU TOTAL**
 Push & tug: 16 **0.7% SHARE IN EU TOTAL**



TONNAGE OF ACTIVE CARGO VESSELS

Dry cargo: 0.184 million tonnes
1.3% SHARE IN EU TOTAL
 Liquid cargo: 0.022 million tonnes
0.7% SHARE IN EU TOTAL

Source: CCNR analysis based on Eurostat data [sbs_na_1a_se_r2], [iww_go_atygo], [iww_go_actygo], [tran_hv_frm], [iww_eq_loadcap], [iww_eq_age], viadonau (fleet data)

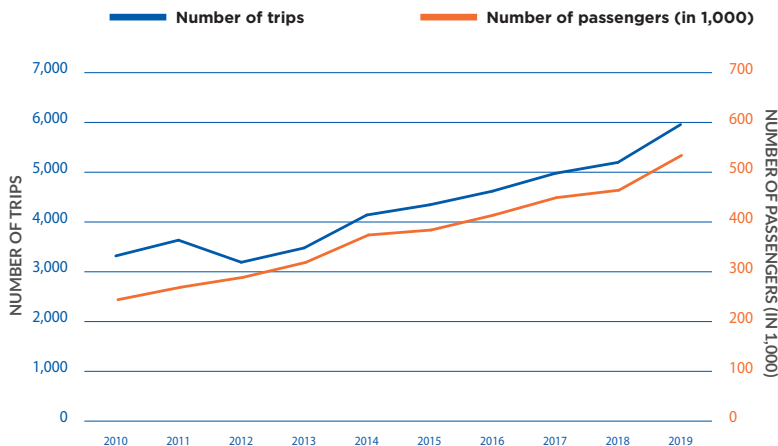
PASSENGER TRANSPORT ON THE AUSTRIAN DANUBE

- The number of river cruise trips in Austria is measured on the basis of data collected at the lock of Aschach near Linz and at the lock of Vienna-Freudenau. While the number of trips represent 'hard data', the passenger numbers are partly estimated by viadonau based on an assumed average capacity utilisation of the vessels of 75%. According to these figures, the number of river cruise trips on the Austrian Danube increased by 80% between 2010 and 2019. Due to the Covid-19 crisis, the figures for 2020 can be expected to be much lower than in previous years.

FIGURE 3: NUMBER OF RIVER CRUISE TRIPS AND NUMBER OF CRUISE PASSENGERS ON THE AUSTRIAN DANUBE*

Sources: viadonau, several annual reports

* Number of passengers is an estimation by viadonau.

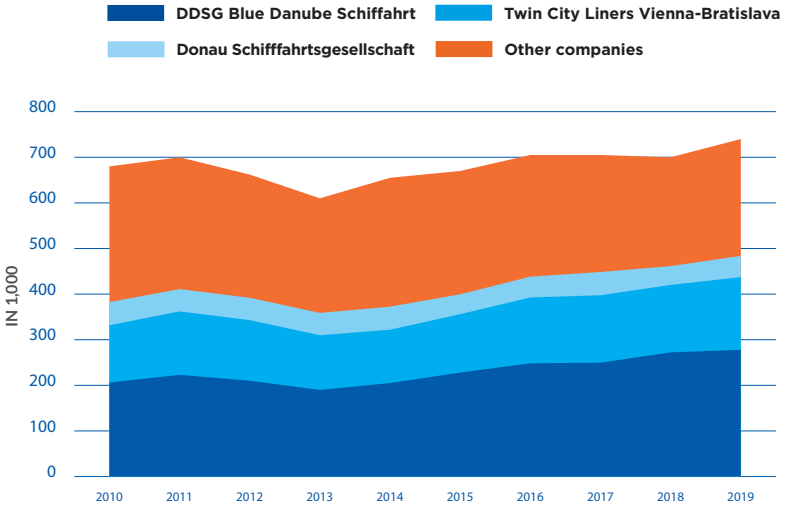


- Not only river cruise vessels, but also day trip vessels (liner services and non-scheduled services) are important on the Austrian Danube. Due to the absence of official figures, viadonau collects passenger numbers from companies. There are several companies active in liner services (including ferry services on the Danube) and in non-scheduled services (charter trips, thematic trips).

FIGURE 4: NUMBER OF PASSENGERS IN LINER SERVICES ON THE AUSTRIAN DANUBE (IN 1,000)*

Sources: viadonau, several annual reports

* Figures include ferry services.



■ GLOSSARY

20XX-1/20XX-Q1: first quarter

20XX-2/20XX-Q2: second quarter

20XX-3/20XX-Q3: third quarter

ACTUAL DRAUGHT OF A VESSEL: vertical difference between the waterline at which the ship is sailing, and the keel of a ship

ARA REGION: Amsterdam-Rotterdam-Antwerp

AVAILABLE OR POSSIBLE DRAUGHT OF A VESSEL: minimum navigation channel depth + (actual water level – equivalent water level) – under keel clearance

BN: billion

CONTANGO: a situation where spot market prices are below prices for a future delivery of oil products.

DANUBE COUNTRIES: Austria, Bulgaria, Croatia, Hungary, Romania, Serbia, Slovakia

EQUIVALENT WATER LEVEL: refers to a low water level under which, on a 30-year average, the water levels do not fall below more than 20 ice free days per year.

EU: European Union

EUROPE: European inland navigation in this report includes two countries that are not members of the European Union, Switzerland and Serbia.

FREIGHT RATE: price at which a cargo is delivered from one point to another.

INLAND FREIGHT TRANSPORT MODES: these include road, rail and inland waterways.

IWT: inland waterway transport

IWW: inland waterway

MIO: million

MODAL SPLIT INDICATOR: the percentage of inland waterway transport in total inland freight transport performance (road, rail, IWT) measured in tonne-kilometres.

OECD: Organisation for Economic Co-operation and Development

RHINE COUNTRIES: Belgium, France, Germany, Luxembourg, the Netherlands, Switzerland

TEU: twenty-foot equivalent unit

TKM: tonne-kilometre (unit for transport performance which represents volume of goods transported multiplied by transport distance).

TRADITIONAL RHINE: Rhine from Basel to the border between the Netherlands and Germany

TURNOVER: sales volume net of sales taxes

UNDER-KEEL CLEARANCE: the distance between the lowest point on the ship's keel (or hull) and the highest point on the channel bottom beneath the ship. This is so to say the "security margin" under the keel.

WATERSIDE PORTS TRAFFIC: the volume of transshipment, measured in tonnes, of the following transshipment activities: transshipment 'vessel - vessel', 'vessel - road vehicle', 'vessel - freight wagon', 'vessel - quay'.

NATIONAL STATISTICS OFFICES

Acronym	Original Name	English Name	Country
CBS	Centraal Bureau voor de Statistiek	Statistics Netherlands	The Netherlands
Destatis	Statistisches Bundesamt	Federal Statistical Office	Germany
INSEE	Institut national de la statistique et des études économiques	National Institute of Statistics and Economic Studies	France
INSSE	Institutul National de Statistică	National Institute of Statistics	Romania
P3C	Републички завод за статистику Србије	Statistical Office of the Republic of Serbia	Serbia
Statbel	Office Belge de Statistique	Statistics Belgium	Belgium

OTHER SOURCES

Original Name	English Name	Country
Bundesanstalt für Gewässerkunde	German Federal Institute of Hydrology	Germany
CCNR/ZKR/CCR	CCNR	Europe
Danube Commission	Danube Commission	Europe
De Vlaamse Waterweg	The Flemish Waterways	Belgium
EUROSTAT	EUROSTAT	EU
Federal Reserve Economic Data	Federal Reserve Economic Data	USA
Institut pour le Transport par Batellerie (ITB)	Institute for Inland Waterway Transport	Belgium
Land Niederösterreich	Federal State of Lower Austria	Austria
OECD	OECD	World
Österreichisches Institut für Raumplanung	Austrian Institute for Regional Studies	Austria
Panteia	Panteia	The Netherlands
PJK International	PJK International	The Netherlands
Ports mentioned in the report	Ports mentioned in the report	Europe

Original Name	English Name	Country
SPF Economie	Federal Public Service Economy	Belgium
SPW Service Public de Wallonie	Public Service of Wallonia	Belgium
US Energy Information Administration	US Energy Information Administration	USA
viadonau	viadonau	Austria
Voies Navigables de France (VNF)	Navigable Waterways of France	France
Wasserstraßen- und Schifffahrtsverwaltung des Bundes	Federal Waterways and Shipping Administration	Germany

BOOKS, JOURNAL ARTICLES AND STUDIES

Original Name	Country
« Accompanyer les entreprises, une priorité absolue », NPI, September 2020	France
2020 Danube Commission market observation report	Europe
Effect of low water on loading capacity of inland ships, Van Dorsser, C. et al., European Journal of Transport and Infrastructure Research, v. 20, n. 3, p. 47-70, September 2020. ISSN 1567-7141. Available at: https://journals.open.tudelft.nl/ejtir/article/view/3981	The Netherlands
Interview with Economics Prof. Dr. Bernd Rürup, Handelsblatt, 13th August 2020	Germany
"Rederij Celjo signaleert licht herstel rond-en partyvaart", Weekblad Schuttevaer, 2 September 2020	The Netherlands
"Rondvaartschip Si Barone beleeft beste seizoen ooit", Weekblad Schuttevaer, 7 September 2020	The Netherlands
Schweizerische Vereinigung für Schifffahrt und Hafenwirtschaft, SVS Aktuell, December 2018/January 2019, pages 7 and 8. Available at: http://www.svs-ch.ch/sites/default/files/svs-aktuell/winter_2018.pdf	Switzerland
viadonau annual reports (various years)	Austria
"Wasserstände und Abflüsse fallen weiter", Bundesanstalt für Gewässerkunde, November 2015. Available at: https://www.bafg.de/DE/07_Nachrichten/Archiv/2015/20151111_nw_download.pdf?__blob=publicationFile#page=3	Germany

■ NOTES ON THE FACTSHEET

“Share in EU total” contains figures for the EU plus Switzerland and Serbia.

#) *In contrast to transport performance, for transport volume, a country-specific share cannot be calculated.*

*) *The number of dry cargo vessels includes work vehicles and RoRo ships (source: viadonau).*

The modal split indicator is defined as the percentage of inland waterway transport in total freight transport performance measured in tonne-kilometres. Inland freight transport modes include road, rail and inland waterways. Road transport takes into account the TKM made by trucks registered in foreign countries on Austrian territory, according to the new Eurostat methodology in the series [tran_hv_fmod].

■ METHODOLOGY

Freight traffic on inland waterways and in ports

Europe as defined in chapter 1 is taking into account all European countries providing quarterly data on inland waterway transport. All these countries are listed on the Transport Performance in Europe map (page with map in chapter 1).

When discrepancies on total transport performance are observed between Eurostat and National Statistics data, the information is notified to Eurostat and National Statistics Office data is taken into account.

When available, NST product classification is used in order to split transport performance on following transport segments: dry cargo, liquid cargo, containers.

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**The Market Insight of European inland navigation
is a common project of the CCNR and the European Commission**

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