INLAND NAVIGATION IN EUROPE

Market Observation 2013

Central Commission for the Navigation of the Rhine

European Commission

Panteia

MARKET OBSERVATION REPORT N°17

The Inland Navigation Market in 2012

Liability disclaimer

September 2013

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Foreword

The persistent weak economic situation in Europe also affects the inland navigation sector and provides a manifold picture. In the restrained transport market for commodities and raw materials, water transport has generally managed to maintain its position and market share. A concern however is the situation of the dry cargo segment on the international market, such as navigation on the Rhine, where many ship owners are confronted with insufficient returns and an extremely weak financial situation. It is the private shipowners in particular, that in recent years have invested in new and large ships, whose continued operations are under pressure. Due to the overcapacity that resulted from the stream of new buildings and the reduction in the demand for transport, this part of the sector is confronted with continued fierce internal competition and, consequentially, low transport prices and a negative return on investment. This sector seems to have inadequate financial might to enable investments in essential fields such as the greening of the fleet.

Although the situation in tanker transport cannot be considered as satisfactory, it does however seem that despite the existence of overcapacity, the continuity of the companies in this market segment is less threatened. . The completion of the reorganisation of the fleet in the form of phasing out the single hulled tankers may well take a few more years, but there are adequate signs of a stable, even slight increase in demand on the one hand and also caution in allowing supply to grow any further on the other hand. Much will depend on the relationship between the further inflow of new double hulled ships and the outflow of the single hulled ships.

The general trend of a weak business climate and a difficult macroeconomic situation are reflected in all geographical sub-markets in inland navigation, taking a few marginal differences into consideration. An important exception is the passenger transport sector, and in particular river cruises. Partly as a consequence of the strong differentiations in supply (regarding geography, regarding the nature) this sector appears to have great resilience and the fleet continues to grow gradually. These activities are further characterised by their clear European dimension.

This edition of the market observation on European inland navigation also endeavours to identify the cyclical and structural tendencies and to present and comment on their effect on the market of water transport at a European level. As such, partly in the context of the crisis situation, extensive attention has been given to capacity utilisation, the developments in freight rates and cost developments. As well as considering the market demand and supply in inland navigation transport, in this report we will further address the problems on the labour market, we will discuss the sub-segment of river-sea transport, and passenger transport occupies a solid position in the considerations.

The Inland Navigation Market in 2012

Part 1:

Overall Economic Framework Conditions and Transport Volumes

1.1 Macroeconomic Framework Conditions

The overall economic framework conditions have had problematic effects on European internal shipping in 2012. Due to the fall in price-adjusted GDP of more than 0.5 % in 2012 and 2013, the Eurozone has been in recession for two years. The causes lie above all in the continuing Eurozone debt crisis, which has impaired consumer confidence, limited fiscal stimuli, and not least stifled demand for investment from companies. In addition, there has also been a slowdown in world trade, as the most important trade partners in Asia are also reporting lower growth rates.

With the exception of Switzerland, the Rhine area countries are members of the Eurozone. The recession scenario referred to above therefore affects them. The Danube countries are largely not (yet) members of the Eurozone. Although they have also been affected by the economic and financial crisis, the growth prospects for the next two years are somewhat better here (see tables).

Slightly different trends are in operation in the individual countries of the Rhine area. Although Germany and Switzerland may still report positive growth, the economy in France is stagnating whilst the Netherlands and Belgium are shrinking[1].

1 Source: IMF (2013) World Economic Outlook April 2013. Hopes, Realities, Risks, and update from July 2013.

Table 1: Real economic growth in the Rhine area including forecasts

	Year							
Real GDP / rate of change	2007	2008	2009	2010	2011	2012	2013	2014
Euro zone	3,0	0,4	-4,4	2,0	1,4	-0,6	-0,6	0,9
Germany	3,4	0,8	-5,1	4,0	3,1	0,9	0,6	1,5
France	2,3	-0,1	-3,1	1,7	1,7	0,0	-0,1	0,9
Netherlands	3,9	1,8	-3,7	1,6	1,0	-0,9	-0,5	1,1
Belgium	2,9	1,0	-2,8	2,4	1,8	-0,2	0,2	1,2
Switzerland	3,8	2,2	-1,9	3,0	1,9	1,0	1,3	1,8

Quelle: International Monetary Fund.

Table 2: Real economic growth in the Danube area including forecasts

	Year							
Real GDP / rate of change	2007	2008	2009	2010	2011	2012	2013	2014
Central and Eastern Europe	5,4	3,1	-3,6	4,6	5,2	1,6	2,2	2,8
Austria	3,7	1,4	-3,8	2,1	2,7	0,8	0,8	1,6
Hungary	0,1	0,7	-6,7	1,2	1,7	-1,7	0,0	1,2
Slovakia	10,5	5,8	3,7	1,4	3,2	2,0	1,4	2,7
Croatia	5,1	2,1	0,1	0,7	0,0	-2,0	-0,2	1,5
Serbia	5,4	3,8	-3,5	1,0	1,6	-1,8	2,0	2,0
Romania	6,3	7,3	-6,6	-1,1	2,2	0,3	1,6	2,0

Source: International Monetary Fund.

The weakening of European economic growth which will be noted – reported *inter alia* in the monthly bulletins of the European Central Bank and IMF publications – has also resulted in a suppression of demand in the transport sector. Inland shipping, as a mode of transport that is directly dependent upon world trade, container traffic and industrial production, is directly affected by this.

1.2 Total Transport Volumes on European Waterways

1.2.1 The Rhine

The industrial sectors of relevance for inland shipping include above all the steel industry, which is suffering from the economic crisis. The receding demand for steel is holding back growth in shipping volumes on the Rhine, as it has negative effects on the quantitatively significant segments of ores, scrap metals, metals and metal goods.

In view of the macro-economic framework conditions referred to above, it can be appreciated that overall traffic in goods on the traditional Rhine only grew by just under 1 % in 2012 compared to the previous year. The quantities transported between Rheinfelden and the German-Dutch border increased from 187 million tonnes to 188.7 million tonnes. The change compared to the previous year was not negative, but rather still slightly positive, above all thanks to the robust growth in the transport of chemicals.

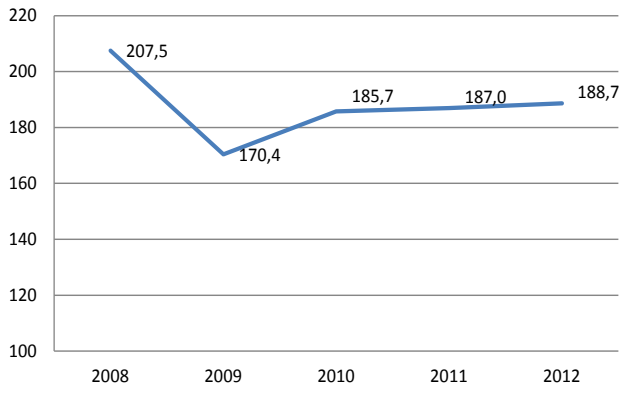
The results were as follows for the individual Rhine segments[1]:

- Lower Rhine: 174,4 million tonnes (+ 1 % compared to 2011)
- Middle Rhine [Mannheim to Bingen]: 63,5 million tonnes (+13 % compared to 2011)
- Middle Rhine [Bingen to Cologne] 75,0 million tonnes (+10 % compared to 2011)
- Upper Rhine: 52,9 million tonnes (+12 % compared to 2011)

According to current estimates, the volume of other land-based modes of transport fell slightly (in Germany) in 2012. A small increase is expected in 2013 (between 1 % and 2 %), followed by a somewhat stronger rise in 2014 and 2015 (2 % and 4 % respectively)[2].

On a positive note, it may be pointed out that Rhine traffic has grown in every year since 2009. However, growth in 2010, 2011 and 2012 was relatively restrained. In any case, it was not sufficient to return to 2008 levels. In this year transport on the Rhine was still 207.5 million tonnes. This means that the figure of 188.7 million tonnes in 2012 is 10 % lower than the 2008 figure.

Figure 1: Transportation of freight on the (traditional) Rhine 2008 – 2012 (in millions of tonnes)*



Sources : Destatis; calculation by the CCNR Secretariat.

* *vfrom Rheinfelden near Basel to the German-Dutch border*

1 Source: destatis (2013), Freight traffic statistics for inland shipping, series 8, volume 4 – 2012.

2 See: BAG / Ratzenberger / Intraplan (2013), Gleitende Mittelfristprognose für den Güter- und Personenverkehr / Mittelfristprognose Winter 2012/2013 [Sliding medium-term forecast for freight and passenger transport / medium term forecast winter 2012/2013], p. 1.

Between 2000 and 2008, the average figure for traditional Rhine transportation was around 200 million tonnes; the figure for 2012 is still 6 % lower than this average.

1.2.2 The Main, Moselle and Saar

The Main flows through large parts of northern Bavaria, and is used above all in order to transport agricultural produce including foodstuffs and fodder. The Hessian part of the Main later joins the Rhine, which is also of significance for the transportation of chemical products and mineral oil products (chemicals region around Frankfurt am Main). In 2012 16.7 million tonnes were transported along the Main, which was 8 % higher than in 2011.

The Moselle is used above all to transport ores and metals, coal and agricultural produce. However, the steel segment shank significantly in 2012. This was initially apparent in the quantities of goods passing through the locks at Coblenz and Apach (on the Franco-German border).

Much less ore, scrap metal and steel products were registered in Coblenz and in Apach than in the previous year. The fall in ores and scrap metal was even higher than 40 %. An explanation for this significant fall lies in the structural crisis in the French steel industry: several steelworks in Lorraine were closed.

12.7 million tonnes were transported along the German part of the Moselle in 2012. This quantity was roughly equivalent to the previous year's figure. According to quantities registered in Apach, traffic along the French part of the Moselle was around 7.5 million tonnes. There was only a small fall of 5 %, because the falls in ores and scrap metals were offset by the strong growth in solid fuels.

The Saar, which is significantly smaller than the Moselle, is also an important transport route for ores and coal. These raw materials are transported along the Saar for delivery to the steel industry in the Saarland. In both of the last two years, volumes along the Saar have increased from 3.5 million tonnes (2011) to 4.2 million tonnes. This rise may be regarded as an indication of the buoyant economic situation in the Saar steel industry. The reason for this lies in a consistent focus in the past on innovation and investment in environmental protection and quality[1].

1.2.3 The Elbe

Compared to its past considerable significance for freight transport, the Elbe, which flows through northern and eastern Germany and the Czech Republic, is now a little used inland waterway. 100 years ago, the Elbe was still the most heavily used inland waterway in Europe[2].

1 Between 2002 and 2011, Saar steel industry companies spent more than EUR 3.8 billion in investments and maintenance. See: Isoplan Marktforschung (2012), Die regionalwirtschaftliche Bedeutung der Stahlindustrie für das Saarland [The regional significance of the steel industry for the Saarland].

2 Source: Elbe River Association [http://www.elbstromverein.de/]

Overall, 16.3 million tonnes of freight were transported on the Elbe in 2012, roughly the same as the previous year. The further upstream one moves, the smaller the quantities transported on each river segment become.

The segment between Hamburg and the sea boundary with the North Sea, also known as the lower Elbe, has by far the highest freight transport levels out of all Elbe segments. 11.6 million tonnes were transported here in 2012, representing a slight increase compared to the 11.3 million tonnes in 2011.

If the hinterland of the seaport of Hamburg is considered, then the direct hinterland traffic along the segment between Hamburg and Schnackenburg (140 km upstream from Hamburg) may be determined. A volume of 9.3 million tonnes was transported on this segment of the Elbe in 2012. Compared to the previous year, the quantities have hardly changed here.

According to the Hamburg Port Authority, container hinterland traffic by inland ship in the seaport of Hamburg has increased significantly in the last few years. However, it must not be disregarded that, despite the impressive percentage increase, absolute quantities are still low compared to hinterland traffic at the seaports of Rotterdam and Antwerp: Inland ship container transport in 2000: 27,000 TEU; in 2008: 119,000 TEU; in 2010: 95,000 TEU.

Transport volume on the upper and middle Elbe in Germany is around 3 million tonnes per year. On the Czech segment of the Elbe, freight transport has remained relatively constant over the last few years. In the years after 2005, between 1.5 million tonnes and 2 million tonnes of freight were transported each year[1]. Now as before, these quantities are somewhat lower than on the German segment of the upper Elbe. In the Czech Republic[2], there are plans to build a dam near to Decin. However, due to the related effects on the environment, this project is in dispute.

1.2.4 North, West, East Germany and Poland

In view of the high transport figures, the West German canal system (which surrounds the Ruhr) should be mentioned. Despite de-industrialisation in the Ruhr, significant freight volumes are still transported along rivers and canals. Volumes transported in 2012 amounted to 30.2 million tonnes. However, this represented a significant fall compared to 2011 (31.8 million tonnes). In 2012, a lower quantity of freight was transported on the Dortmund-Ems canal and the Ems compared to the previous year (18.5 million tonnes, compared to 19.5 million tonnes in 2011).

The Mittelland Canal is an artificial waterway in northern Germany providing an East-West connection between the area around the Dutch border and the Berlin area. This canal is used intensively for freight transportation. Most goods which are transported here are sand and gravel, agricultural products, mineral oil products and coal. Freight traffic in 2011 amounted to 21.3 million tonnes, against 20.5 million tonnes in 2012.

1 Source: Czech Ministry of Transport (2012), Transport Yearbook 2011

2 The source for all transport quantities on German rivers and canals is the German Federal Office for Statistics [Deutsche Statistische Bundesamt] (destatis).

Slightly less than 9 million tonnes were transported on the Weser in 2012; out of this figure, 7.4 million tonnes alone related to the segment between Bremen and the North Sea. In the previous year, the quantity transported on the entire Weser amounted to 9.1 million tonnes, of which in turn 7.4 million tonnes related to the lower Weser between Bremen and the North Sea.

The Berlin waterway area includes a variety of natural and artificial waterways, such as the Havel and Spree, as well as a range of canals. 4.2 million tonnes were transported in the Berlin area in 2012, as against 4.5 million tonnes in the previous year. The Brandenburg waterway network (which includes the Oder) transported 3.5 million tonnes, compared to 4 million tonnes in the previous year.

In Poland inland shipping is a mode of transport with a contribution to traffic volumes that is far below the potential which would be possible given the large Polish waterway network. Figures have declined over the last ten years, whilst other modes of transport such as road and rail have reported significant growth. In 2011, around 5 million tonnes of freight were transported on Polish inland waterways. In 2000 the figure was more than 10 million tonnes, with 9.6 million tonnes in 2005[1]. Pushed barge and tugboat shipping is very significant in Poland, as it also is in the Danube area.

1.2.5 North-South-Corridor

The transport of goods by IWT on the North-South corridor decreased in 2012 compared to 2011.

The IWT volumes transported in the Netherlands showed a decreasing trend in 2012 compared to 2011[2]. This decrease can be seen in the transport of ore and building materials. The decrease in the transport of building materials was mainly due to the economic situation in the construction sector and has especially a significant impact on the domestic IWT transport sector.

The total loaded and unloaded cargo transported by vessels on waterways in Belgium decreased with 2.6% in 2012 compared to 2011. Petroleum products, chemicals, building materials and other type of products are the four main categories of goods and represent more than 75% of total goods loaded and 70% of the total goods unloaded[3]. The strongest increase in 2012 belongs to the transport of agricultural products (+7.9%), petroleum products (+6.1%) and solid fuels (+4.4%).

A sharp decline has been seen in the transport of ore (-13.2%), foodstuffs (-11.9%), metal products (-9.1%) and building materials (-7.7%), loaded and unloaded on Belgian waterways compared to 2011.

1 Source: Central Statistical Office of Poland

2 The specific transport data for the IWT sector in the Netherlands is still under evaluation.

3 Source: ITB, Information letter, number 78 (1st quarter 2013).

The total tonnage transported by IWT in France was 58 million tons in 2012. The total volumes decreased with 0.9% in 2012 compared to 2011. The highest increase was seen on the Nord Pas de Calais (+2.3%), followed by the Seine (+0.6%). On the other hand, lower transport volumes have been reported on the Moselle (-6.4%) and the Rhône-Saône (-8.4%).

Container transport on French inland waterways amounted to 563.500 TEU in 2012, which represented an increase by 6 %. The Nord Pas de Calais Region and the Rhone Saone region showed the strongest increase of all French regions in container transport (7 % and 11 % respectively). However, the largest volumes of container transport can still be found on the Rhine and on the Seine.

The future Seine-Nord Europe Canal in France should facilitate the inland waterway transport of freight cargo and passengers on the North-South corridor.

Construction was originally planned to start in 2012, with the canal coming into operation in 2016. However, the situation has now changed. It was necessary to review the original estimate of construction costs of EUR 4.2 billion; the new estimate amounts to more than EUR 7 billion. Due to this development, a reconfiguration of the project is now being discussed. In concrete terms this means that a smaller canal size including related infrastructure (number of multi-modal platforms, width and depth of the canal, etc.) is being considered.

In the first half of 2014, the new concept for the canal is due to be presented to the French Ministry of Transport. In addition, a broader basis is to be provided for financing; in this regard the fact that the European Union infrastructure fund for the transport sector has recently been increased significantly may be beneficial, with the result that a newly configured canal may be financed more easily and at lower cost, at the same time with an increased borrowed capital element[1].

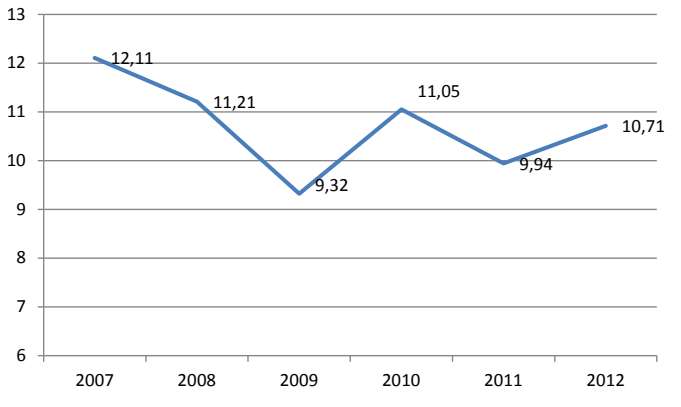
1.2.6 The Danube Area

The Upper Danube Area:

The upper Danube area includes Austria and the Danube segment in Germany. 6.5 million tonnes were transported on the German segment of the Danube in 2012. This represented 8 % growth compared to the previous year.

On the Main-Danube Canal, more than 4,500 freight ships passed through the Kelheim lock (at the eastern end of the Main-Danube Canal) in 2012. The tonnage which passed amounted to 4.9 million tonnes, i.e. 18.9 % up on 2011: of

Figure 2: Freight transport on the Danube in Austria 2007 – 2012 (millions of tonnes)



Source: Statistik Austria [Austrian Statistics Office]

1 See: L'Aisne Nouvelle, Le Canal Seine Nord Europe refait surface [The Sein North Europe Canal Resurfaces], article of 9 April 2013.

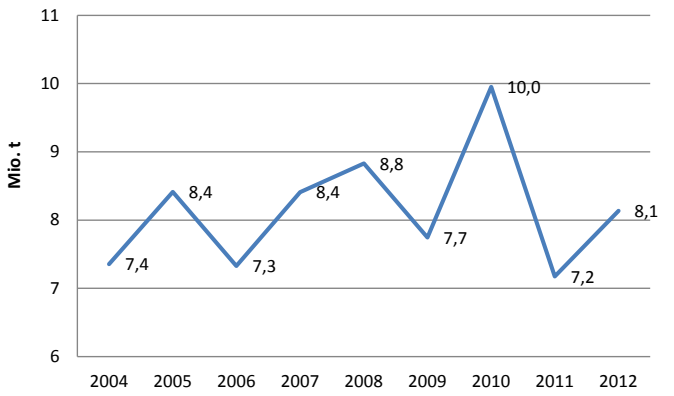
this figure, 2.36 million tonnes travelled downstream to the Danube, with 2.55 million tonnes coming upstream from the Danube, thus resulting in a balanced ratio[1].

Transport along the Austrian Danube increased by 8 % in 2012, from just under 10 million tonnes in 2011 to 10.7 million tonnes in 2012. There has been an upward trend in Austria since the crisis year in 2009. However, in spite of the consistent small increases, pre-crisis levels have not yet been reached (see graph).

Middle Danube Area:

Hungary, which alongside Slovakia, Croatia and Serbia constitutes the middle Danube area[2], is the most significant country in the middle Danube area with freight transport of 8.1 million tonnes. The years 2006 to 2010 shows a growth trend in transport volumes. However, in 2011 and 2012, volumes fell back to the level predominant during the 2004-2009 period.

Figure 3: Freight transport on inland waterways in Hungary 2004 – 2012 (millions of tonnes)



Source: Eurostat

The freight shipping statistics of the Hungarian Ministry of National Development show that a range of European countries are freight dispatching and freight receiving countries. Taking account of the quantity of freight transported, Romania, Austria, Germany, the Netherlands and Serbia play the most prominent roles.

For these countries the following international transport volumes were recorded in 2012[3]:

- 1.8 million tonnes between Hungary and Romania (most of which were exports from Hungary to Romania)
- 1 million tonnes between Hungary and Austria (here too exports outweighed imports))
- 0.8 million tonnes between Hungary and Germany (almost all of which were Hungarian exports)
- 0.7 million tonnes between Hungary and the Netherlands (almost 0.6 million tonnes of which were exports to the Netherlands)
- 0.4 million tonnes between Hungary and Serbia (almost all of which were exports to Serbia)

The above figures confirm the picture painted in the CCNR Market Observation Report 2010-2 that exports play a far greater role in Hungarian inland shipping than imports[4]. Other countries identified as countries of origin or destination for transports to or from Hungary have a relatively low quantitative significance.

1 Source: Danube Commission (2013)

2 In strictly geographical terms, a small part of Hungary belongs to the upper Danube area. However, most of the country belongs to the middle Danube area.

3 Source: Ministry of National Development Hungary

4 See figure 23 in the Market Observation Report 2010-2 (CCNR).

In Hungary, as in the entire Danube area, push barge shipping is widespread. In 2012 push barge freight transit in Mohács, on the southern border with Serbia, accounted for 75 % of overall freight quantities registered there. An average of 35–40 pushed barge convoys pass through the registration point at Mohács every month in both directions.

Convoys comprised of dry goods barges include 4–6 units. The «heaviest» barges travelled in April (up to 1,600 tonnes per barge), and the «lightest» in August (up to 1,200 tonnes per barge). The largest quantities in Mohács were achieved in May, whilst in the following months quantities fell relatively steadily.

At Mohács, 10.3 thousand tonnes were transported upstream in convoys of tanker barges, whilst 74 thousand tonnes were transported downstream[1].

In Slovakia 8.2 million tonnes were transported in 2011. The previous year 2010 saw an extraordinarily good result with a volume of 10.1 million tonnes. No figures are available yet for 2012 from the Slovakian Statistics Office.

However, the structural breakdown according to type of traffic on the Slovakian Danube is contained in data from the registration point at the Gabčikovo dam. This site is located roughly halfway between Bratislava and the port of Komarno.

According to Danube Commission figures, 6 million tons of freight were transported through the Gabčikovo dam in 2012, with 4.4 million tons or 72.5 % of overall freight traffic amounting to transit traffic. In 2011 total traffic was slightly lower at 5.6 million tonnes, of which 4.5 million tonnes related to transit traffic. These figures coincide with those of the Slovakian Statistics Office, which reveal a high share of transit traffic out of total transport volumes on Slovakian waterways.

In 2012, 3.2 million tonnes of freight, thus slightly more than one half of transport volumes, were transported by ship through the lock at Gabčikovo. 2.4 million tonnes of this amount related to upstream traffic. In stable shipping conditions, an average of 70–71 push barge convoys pass through the Gabčikovo dam each month, representing one half of the number of motor ships involved in freight transit. Dry goods convoys were comprised of 4–5 barges, with the «heaviest» convoys being registered in April (with up to 1,600 tonnes per barge), and the «lightest» in March (with up to 1,400 tonnes per barge).

Transport volumes in Croatia in the last few years have been around 6 million tonnes per year. The figure for 2012 was 5.9 million tonnes. There have been hardly any changes since 2007. The official figures for Serbia indicate a significant fall in transport volumes over the last few years. For the year 2011, the Serbian Statistical Office reports a level of 2.1 million tonnes, compared to more than 5 million tonnes in 2007 and 2008[2]. Production in Serbian steelworks has stopped in the last few years, which explains the fall.

1 Source: Donaukommission (2013), Marktbeobachtung in der Donauschifffahrt – 2012 [Market Observation of Danube Shipping – 2012]

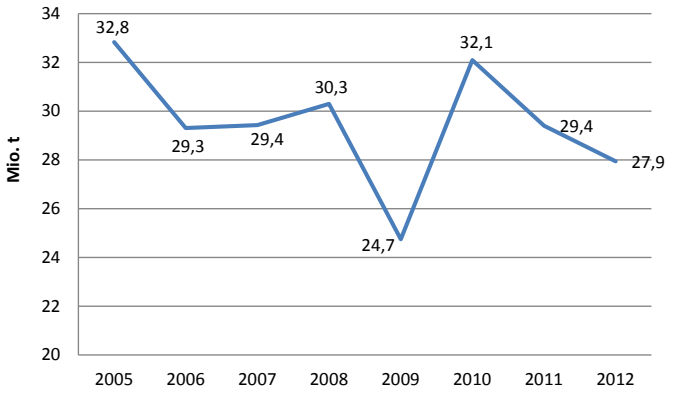
2 In view of the significantly higher volume in neighbouring countries to Serbia (Croatia and Hungary), these figures do not appear to be plausible. Eurostat does not issue any figures for Serbia.

Lower Danube Area:

According to Eurostat figures, just under 28 million tonnes of freight were transported along inland waterways in Romania in 2012. Romania is therefore the country with the highest transport volumes in the Danube area. In geographical terms, the lower Danube area includes Bulgaria and Moldova in addition to Romania.

Eurostat reports transport volumes of 16.4 million tonnes for Bulgaria. There has been a positive trend over the past ten years.

Figure 4: Freight transport on inland waterways in Romania 2005 – 2012 (millions of tonnes)

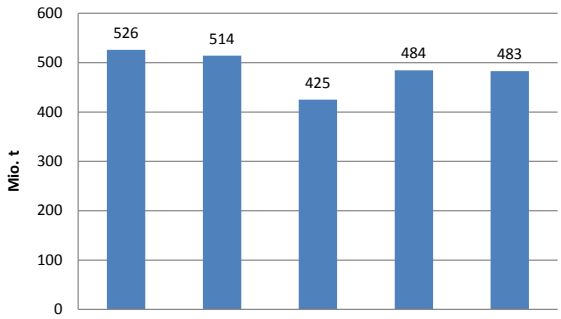


Source: Eurostat

Summary

In the 28 EU Member States, a total of 483 million tonnes were transported on inland waterways in 2011[1]. Transport performance during this year amounted to around 135 billion kilometre tonnes (see graph below).

Figure 5: Transport volumes and performance for inland shipping in the 28 EU Member States



Source: Eurostat; for 2010 and 2011 partly based on estimations of PANTEIA

Transport volumes in 2011 were still below pre-crisis levels. Transport performance in 2011 fell considerably compared to the previous year, due to a resurgence of the Euro crisis and special effects (Waldhof accident). 2012 figures were not yet available at the time the report was completed.

The growth rate for the Rhine is similar to levels from previous years (+1.5 %). However, transport volumes on the Rhine are still lower than the average level for the period 2000 – 2008.
During this period an average of around 200 million tonnes per year were transported. In 2012 the quantity

1 Statistics for 2012 were not available yet, when the report was written.

transported on the traditional Rhine was just under 189 million tonnes, thus 6 % lower than the average value for the period 2000-2008. This period may thus be used for comparison since alongside an economic boom period (2005 to 2008) it also included a recession (2001 – 2004)[1].

Areas in which slightly stronger growth rates occurred were the upper Danube area (+8 %), the river Main and the Main-Danube Canal (+ 8 % and +17 % respectively), the middle Danube area (Hungary + 12.5 %) and parts of the lower Danube (Bulgaria + 13 %).

Areas experiencing a fall in demand for transportation were Belgium (- 5 % in both Flanders and Wallonia), the Moselle and Rhone in France (- 7 % and - 9 % respectively), Luxembourg (- 5 %), and northern and north-western German area (Ruhr – 5 %, Mittelland Canal - 3 %). Demand for transportation stagnated on the Elbe and Moselle in Germany and on the Seine in France.

Against the backdrop of cyclical economic forecasts and after weighting tendencies for individual goods, for the year 2013 as a whole, stagnation is expected not only for the dry bulk cargo segment but also for containers. A small increase (1 to 2 %) is expected in 2014.

The transportation of chemical products is currently growing very well. A process of stagnation is expected to take root for mineral oil products, in view of the reduced oil price, but also a further structural reduction in quantities used. Overall - thanks to chemical products - an increase in transport volumes (of around 2 % up to a maximum of 5 %) is expected in the tanker shipping sector in 2014.

Table 3: Transport volumes (tonnes) and transport performance (kilometre tonnes) in Europe *

River / Area	*Transport volumes 2012 (millions of t)*	*Change in volume 2012/2011 in %*	*2012 transport performance in million tkm*
Rhine area			
Rhine	188,7 Mio. t	+ 1,5 %	46.548
Main	16,7 Mio. t	+ 8 %	2.910
Moselle in Germany	12,7 Mio. t	+ / - 0 %	2.799
Saar	4,2 Mio. t	+20 %	255
Ruhr	30,2 Mio. t	- 5 %	1.533
Netherlands (#)	303 Mio. t	+/- 0 %	41.073

1 This means that it is possible to establish a mean value for use as a reference.

River / Area	*Transport volumes 2012 (millions of t)*	*Change in volume 2012/2011 in %*	*2012 transport performance in million tkm*
Ems and Dortmund-Ems Canal	18,5 Mio. t	- 5 %	1.850
Mittelland Canal (East-West traffic)	20,5 Mio. t	- 3 %	2.872
Weser	8,9 Mio. t	- 2 %	789
Elbe (Germany)	16,3 Mio. t	+/ 0 %	2.000
Elbe (Czech Republic)	2 Mio. t	+/ 0 %	38
Poland	5,1 Mio. t	k.A.	131
Belgium			
Flanders	69,3 Mio. t	- 4,5 %	4.200
Wallonia	42,0 Mio. t	- 5,4 %	1.790
France	58,1 Mio. t	- 0,9 %	7.738
Seine	23,2 Mio. t	+0,6 %	4.230
Rhone-Saone	5,7 Mio. t	- 9,2 %	1.254
Moselle in France	8,5 Mio. t	- 6,8 %	580
North-Pas-de-Calais	9,3 Mio. t	+2,3 %	879
Luxembourg	8,5 Mio. t	- 5 %	290
UK	3,0 Mio. t	+ / - 0 %	144
Upper Danube			
in Germany	6,5 Mio. t	+ 8 %	1.050
in Austria	10,7 Mio. t	+ 8 %	2.191
Main-Danube Canal	5,8 Mio. t	+17 %	895

River / Area	Transport volumes 2012 (millions of t)	Change in volume 2012/2011 in %	2012 transport performance in million tkm
Middle Danube			
Hungary	8,1	+12,5 %	1.982
Slovakia	8,2 **	k.A.	986
Croatia	5,9	+/- 0 %	772
Lower Danube			
Romania	27,9	- 5 %	12.520
Bulgaria	16,4	+13,3 %	5.349

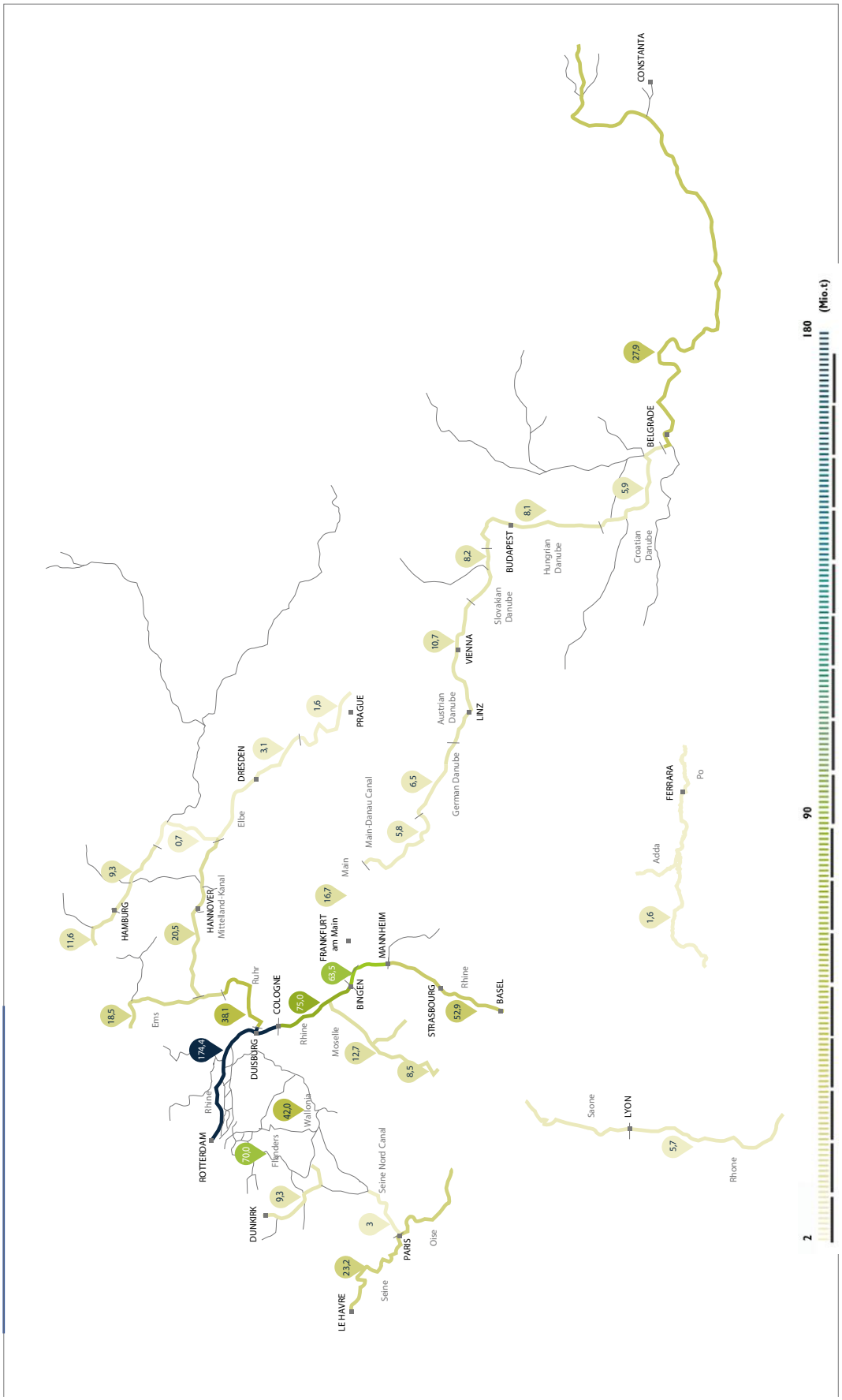
Source: Eurostat; national statistics authorities; VNF, Elbe River Association.

** the figures for transport performance relate to the transport performance achieved in the relevant country.*

*** 2011. Not available = no figures.*

(#) The data for the Netherlands have been estimated by PANTEIA on the basis of short-term freight transport forecasts (PANTEIA 2013).

The figures for the Netherlands reported by Eurostat on the basis of the Centraal Bureau voor de Statistiek (CBS) appear to be implausible, as they are too high.



Map 1: Transport volumes (Mio. t)

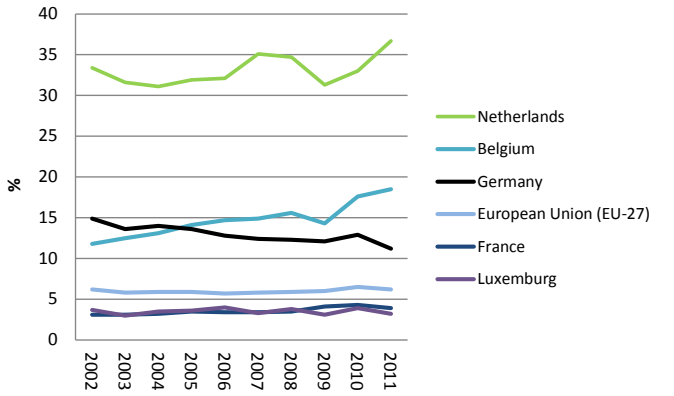
Sources: Eurostat, nationale Statistikbehörden; VNF, Elbstromverein.

1.3 Modal Split Position of Inland Navigation

Measuring the transport performance in inland shipping as a proportion of overall transport performance of all land-based modes of transport, the modal split share in Western Europe has changed to some extent in recent years.

The Netherlands, as the country with the second highest transport performance in Europe after Germany, have been able to retain their relatively high share of more than 30 %. Germany on the other hand has seen a fall. The modal split share of inland shipping in Germany (11.2 %) and in the Netherlands (36.7 %) is significantly higher than the average for the 27 EU Member States of 6.2 % in 2011[1].

*Figure 6: Modal split share of inland shipping in the Rhine area and in the 27 EU Member States **



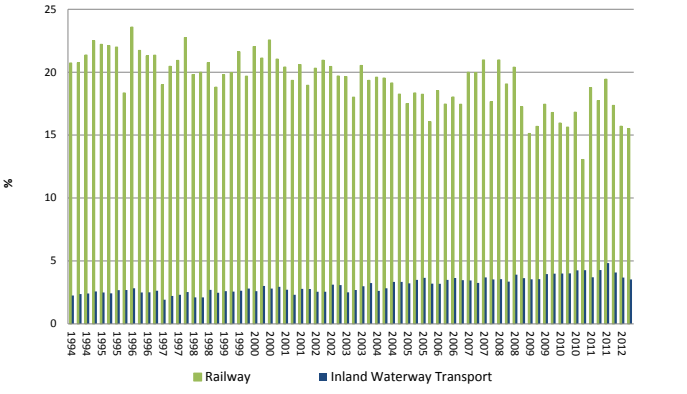
Source: Eurostat

** based on transport performance (tkm)*

Belgium has achieved significant growth which, when considered in greater detail, may also be attributed to measures to support the transport industry, such as the quay wall programme. This public-private partnership was able to cover a major share of the construction costs of waterway infrastructure for loading and unloading freight where a company undertook to load and unload a minimum portion of its transshipment cargo over the following years by water[2]. This enabled the state to take on up to 80 % of a significant entry barrier for a modal shift, namely the initial investment in infrastructure.

The modal split of waterways has also grown in France; the share of inland shipping in transport performance grew slowly but constantly from 2.25 % (1994) to around 4 % (2011). At the same time, the share of the railways in French transport performance fell over this period. Road haulage further expanded its share over this period, reaching just under 80 % of transport performance in 2011.

*Figure 7: Development of the modal split share of rail and inland waterways in France **



Source: ITF, calculation of the CCNR Secretariat

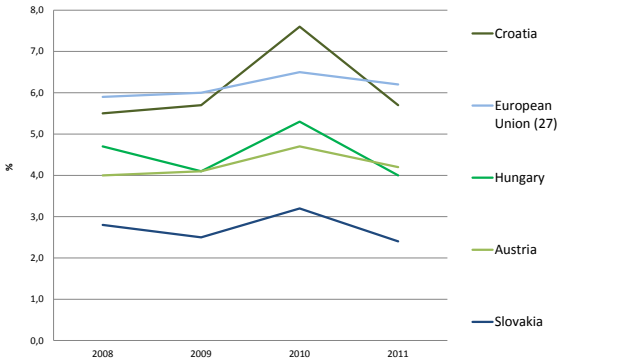
** based on the transport performance of land-based modes of transport*

1 However, this average value for the 27 EU Member States also includes EU Member States in which there are no navigable rivers, which alone results in a downward distorting effect on the pan-European modal split figure.

2 The regional government of Flanders [launched] this programme in 1998 under the name «Quay Wall Programme» (in Dutch: «stimuleringsprogramma voor de bouw van kademuren»).

In order to explain the backward trend in Germany, the German Federal Office of Transport has carried out a comprehensive study[1]. It is concluded that structural changes from the freight industry (fall in the share of bulk goods out of overall transport), the liberalisation of rail freight and the still insufficient incorporation of inland shipping into logistical chains (above all in view of heavy increases in container traffic) account for most of the loss of market share of inland shipping in Germany[2].

Figure 8: Modal split share of inland shipping in the Danube area and in the 27 EU Member States ∗



Source: Eurostat

∗ based on transport performance (tkm)

Considered with reference to individual freight segments, German waterways have lost ground to the railways in relation to mineral oil production and ores and scrap metals. Most other freight segments have been able to retain their market share. However, its share in the transportation of machinery and equipment, and hence goods amenable to container shipment, is only around 3 %. Yet this freight segment has shown the most significant growth rates, in which inland shipping has only been able to participate on a minor scale. This last point thus concerns structural changes in the freight industry, i.e. changes in the share of individual freight segments out of overall volumes.

In recent years the Danube countries have seen hardly any change in the modal split share for inland shipping. Due to statistical and methodological problems, pre-2008 values for most Danube countries are not comparable with post-2008 values. For Romania, the modal split share was more than 20 %[3].

1 Federal Office of Transport [BAG] (2012), Market Observation for Freight Traffic – Development of the modal split on the German freight traffic market with particular focus on inland shipping.

2 See also: CCNR (2013), Analysis and assessment of structural trends in the inland shipping market – special report of the economic committee of the CCNR], June 2013.

3 Due to methodology problems, the precise value for Romania is not very significant at present.

Part 2:

Transportation according to individual goods segments

2.1 The Rhine

2.1.1 Agricultural products

Grain accounts for 60 % of total volume in this segment. Compared to the previous year, the quantity delivered along the traditional Rhine rose by 1.5 million tonnes to 12.5 million tonnes, corresponding to a rate of growth of 13 %. Transportation grew at similar rates along all German waterways (by 9.4%)[1]. As with foodstuffs and fodders, the agricultural products sector is a growth segment for inland shipping. Due to the increasing role played by renewable energies, and specifically biomass, there is growth potential for this sector.

2.1.2 Foodstuffs and fodders

With around 7 million tonnes of foodstuffs and fodders, volumes transported increased from 2011 by around 300,000 tonnes (+ 4 %). Most of this transport (60 %) is comprised of plant oils and fats, followed by fodder with 22 %.

1 Source: destatis

2.1.3 Ores and steel

The steel industry as a whole has emerged from the financial crisis in a weaker state[1]. The most important problems are currently:

- weak demand for steel from the French, Italian and Spanish car industries due to the Eurozone crisis;
- a fall in demand for steel in the construction sector;
- the downward pressure on world steel prices caused by increases in quantities produced in China. This has worsened the competitive environment for the European steel industry.

Steel production in the 27 EU Member States fell by 5 % in 2012 compared to 2011. A fall in traffic in ores has already been noted in transshipment figures in the port of Rotterdam. Traffic in ores in the Rhine fell by 6 %. Around 23.25 million tonnes of iron ore and non-iron ores were transported[2].

The transportation of metals and metal products amounted to 10.7 million tonnes. This was also down (- 4%). In view of the heavy concentration of the German steel industry on the Rhine area, the transportation of metals and metal products on German waterways fell by a very similar amount, specifically around 5 %.

The European Steel Association EUROFER expects demand for steel to fall by 3 % in 2013[3]. Against this backdrop, transportation of ores and metals should also fall slightly once again in 2013, on a similar scale to the 2012 fall (thus around 5 %).

2.1.4 Coal

There was a slight rise in the transportation of solid fuels (overwhelmingly hard coal). The additional demand for coal originating from the energy sector more than offset the fall in demand from the steel industry. Accordingly, quantities of solid fuels transported along the Rhine increased by around 2 % to 29.7 million tonnes.

Despite the flagging steel industry, quantities of coal transported therefore grew for the third year running. This undisputed positive development in quantities transported is associated with developments on world energy markets.

1 http://www.stahl-online.de/Deutsch/Linke_Navigation/MedienLounge/_Dokumente/130408_PK_Hannover_Messe_Charts.pdf

2 96 % of ore transport related to iron ore. In 2011, traffic in ores in the Rhine still accounted for 24.5 million tonnes.

3 Source: Eurofer (2013), Economic and Steel Market Outlook 2013-2014 of 19 July 2013.

- These include on the one hand extraction of unconventional gas in the USA. Since the USA are extracting large quantities of natural gas (in a manner which is unconventional and highly controversial on ecological grounds[1]), much more US coal is being brought to world markets. Therefore, coal prices are falling whilst the price of natural gas in Germany is increasing further. This has led to a situation in which European demand for coal as a source of energy has risen in recent months.

- On the other hand, it is important to mention the construction or expansion of coal-fired power stations in Germany, which is being driven forward by energy concerns due to cheap coal prices, abundant worldwide reserves of coal, and a regionally well-diversified coal supply structure[2]. An example is the new power plant block in Karlsruhe, which will be considered in greater detail below in the section on ports.

The prospects for the coming years continue to be positive. Accordingly, growth of between 3 and 5 % is expected in 2014. Several factors point towards growth in the coal market on the Rhine. These include first and foremost investments in new power station capacity, such as that in Karlsruhe referred to above. (An additional 1 million tonnes of coal should be delivered by ship to the new EnBW heating block in the Port of Karlsruhe alone[3]).

Secondly, whilst energy supply in Europe is increasingly focused on renewable energy, renewables will by no means be able to replace these conventional energy sources in the near future; even were there to be a significant increase in the share of wind and solar energy, these energy sources would in any case need to be supplemented by others, such as coal, which are constantly available. Thirdly, coal prices are currently relatively low, and are likely to remain so in the near future, due to the abundant supply of coal on the world market.

2.1.5 Containers

Imports (above all of consumer goods) from the Far East occupy a predominant position in the container segment. Contains boxes are then often transported back to seaports empty. This accounts for the imbalance between upstream and downstream traffic. Measured against the TEU transported, this imbalance ratio is 52 to 48 percent (share of North-South traffic to share of South-North traffic in %). The same ratio is obtained if container numbers are considered.

The imbalance in favour of North-South traffic becomes unequivocally tangible if the calculation is based on the weight of the freight transported: this results in a North-South share in traffic of 66 %, against 33 % in the opposite direction.
The overall quantity of TEU along the traditional Rhine in 2012 was just under 2 million TEU (1.98 million). This value means more or less stagnation compared to the previous year, in which 1.97 million TEU were transported.

1 See the following article in the Frankfurter Allgemeinen Sonntagszeitung on 26 May 2013: «Fracking – müssen wir da mitmachen?» [«Fracking – do we have to join in?»]

2 Coal is extracted by a variety of countries, most of which may be regarded as politically reliable.

3 Source: Binnenschifffahrt July 2013, Article: Rheinhäfen Karlsruhe planen ihre Zukunft [The Rhine Port of Karlsruhe plans its future].

The total freight weight of the containers in 2012 amounted to 14.7 million tonnes.

*Table 4: Container traffic along the traditional Rhine throughout 2012 **

Number of containers		TEU		Weight of freight in containers (tonnes)	
Empty	Loaded	Empty	Loaded	Empty	Loaded
420.036	872.496	648.260	1.331.964	0	14.709.070
Total number = 1.292.532 containers		Total quantity = 1.980.223 TEU		Total weight of freight in containers = 14.709.070 tonnes	

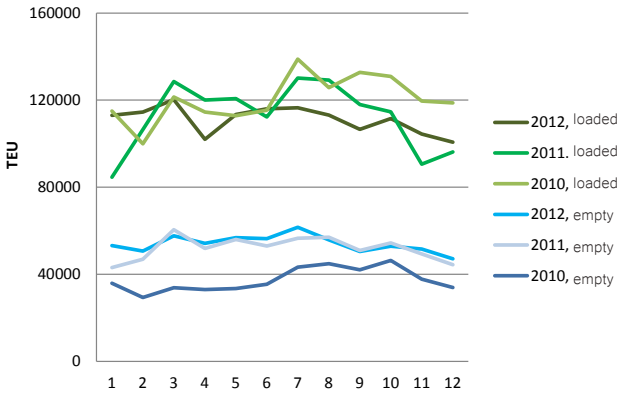
Source: destatis; CCNR calculations

** Rheinfelden to the Dutch-German border*

The number of empty containers in 2012 was higher than the previous year's level. The quantity of 0.65 million TEU resulted in an increase of 4 %. This involved a continuation of the trend from recent years. By contrast, no growth was reported for full containers. The TEU quantity of 1.33 million TEU remained slightly under the previous year's level (– 1.4 %).

Container traffic is a growth segment within inland shipping. In 2000-2011, container transportation on the Rhine, measured in TEU, grew by 95 %, and thus almost doubled[1]. The basic orientation of this positive structural trend will continue, although the rate of growth is expected to slow.

Figure 9: Container transport per month (empty versus loaded) on the traditional Rhine 2010 – 2012



Source: destatis

2.1.6 Sand, gravel, stone, soils and construction materials

23.4 million tonnes were transported on the Rhine in 2012, most of which (91 %) related to sand, soil, gravel and stones. The remaining 9 % was accounted for by cement, chalk, gypsum and other building materials. Overall, there was a 3 % fall compared to the previous year. The crisis in the building trade had a detrimental impact. Quantities are expected to remain constant in 2014 (see Annex 1 to this report).

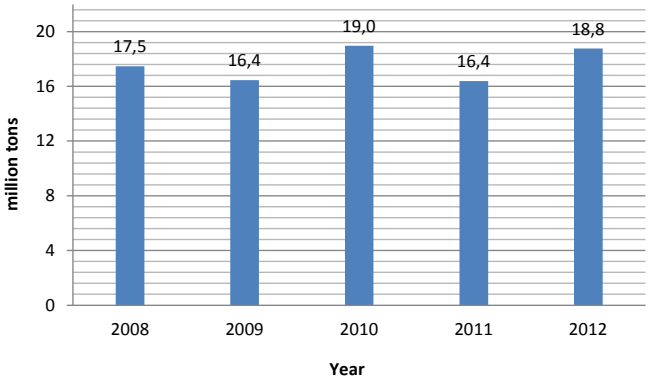
2.1.7 Chemical products

Following an analysis of the figures, it has been shown once again that the chemical industry (in the Rhine area) is a prospering segment.

1 See CCNR (2013), Analysis and Assessment of Structural Trends in the Inland Shipping Market, June 2013

A reason for this may be high safety and quality standards applicable both within the manufacturing chemical industry and well as the dedicated logistical services, i.e. tanker shipping.
In this way, a symbiotic relationship is created between cargo shippers and the carrying business, which promises large growth potential in both sectors (industry and transport providers).

Figure 10: Annual transportation of chemical products along the traditional Rhine



Source: destatis; calculation by the CCNR.

There was a noticeable increase in transport from 16.4 million tonnes in 2011 to 18.8 million tonnes in 2012. This entailed an increase of more than 14 %. Accordingly, the 2008 figure (17.5 million tonnes) was overtaken and the 2010 figure was largely matched. In 2014 the Chemical Industry Association in Germany is expecting a 2 percent rise in the production of chemicals. The transportation of chemical products along the Rhine is expected to grow at a higher rate, probably around 5 %.

2.1.8 Mineral oil products

In 2012 the consumption of mineral oil products in Germany was more or less stagnant. A very slight fall of 0.4 % was determined. Existing trends for individual products are essentially continuing. Accordingly, there was a fall for petrol fuel (– 4.7 %), whilst sales of diesel increased by 1 %. Sales in aircraft fuel increased by 7 %[1]. Heating oil sales remained roughly at the previous year's levels.

Refinery production slightly increased by 1.4 %. This indicator also provides a partial indication of the demand for tanker shipping transport. This is because the refineries located in the Rhine area (Cologne-Wesseling, Karlsruhe, Gelsenkirchen, etc.) predominantly deliver their products by inland shipping.

Against this backdrop, transportation volumes in Rhine shipping remained largely stable. 24.2 million tonnes of fluid mineral oil products were transported, compared to 24.5 million tonnes in 2011. This represents a small fall of 1.2 %.

Future prospects for demand for transportation are essentially determined by structural trends in per capital energy consumption, changes in the oil price and winter weather. The slight fall in consumption of mineral oil products will continue, which in general terms will result in a fall in transportation of mineral oil. According to World Bank forecasts (from July 2013), the oil price will move in a sideways direction in 2014 and 2015[2]. Winter weather is not predictable.

Overall, these framework conditions suggest that demand for transportation in 2014 will follow a very similar trend to 2013. There is thus expected to be a slight fall or at best no change in quantities transported.

1 Applies to Germany

2 Worldbank (2013), Commodity Price Forecast Update – Released: 8th July 2013

2.2 North-South Corridor

Out of the 58.1 million tonnes transported in France in 2012, ¾ relate to the following freight segments:

- sand, soil and construction materials with 23.2 million tonnes
- agricultural produce with 9.9 million tonnes
- petroleum products with 4.9 million tonnes
- machines and vehicles with 4.9 million tonnes

It may thus be concluded that 43 million tonnes out of the total quantity of 58.1 million tonnes relate to these four segments. This corresponds to a share of 74 %, or approximately ¾.

The highest increase, based on tonnes transported, are for the transport of:

- chemicals (+17.8%), which benefitted all the major waterways in France (Seine +54.9%, Moselle +24.7% and the Rhône +21.2% in tkm performance);
- fertilizers (+5.8);
- other type of products (+5.1%), mainly the result of an increase of 22% in tkm performance of containerised cargo on the Rhone;
- solid fuels (+3.4%), especially having a positive impact on the IWT transport on the Moselle and the Nord-Pas de Calais.

The transport of building materials remained relatively stable (+0.5%) compared to the previous year. On the other hand, the transport of foodstuffs (-4.9%) and petroleum products (-11.2%) decreased in 2012. The transport of petroleum products decreased mainly due to a lower consumption of heating oil and non-road diesel. The transport of metal products (-7.5%) and ores (-19.5%) also decreased sharply, affecting mainly the transport on the Moselle and Nord-Pas de Calais waterways.

2.3 The Danube Area

Most of the freight transport on the upper Danube relates, upstream, to foodstuffs, iron ores and petroleum products and, downstream, to natural and artificial fertiliser and petroleum products. Motorised cargo vessels on the Upper Danube have the most stable freight base, and may hence travel laden in both directions (upstream and downstream traffic).

Most upstream freight transport on the Middle Danube relates to iron ore and solid mineral fuels, as against grain (these shipments are distinctly seasonally dependent), fodders and fertilisers downstream.

Around two thirds of shipments on the Austrian Danube are comprised of iron ore and steel products, petroleum products along with agricultural produce and fodder.

The following quantities were transported on the Danube in Austria in 2012:

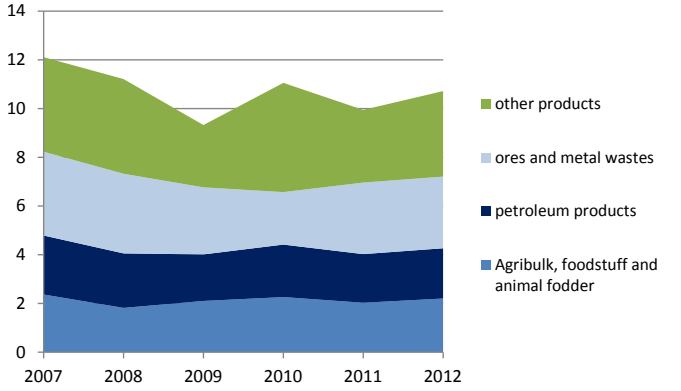
- ore and scrap metal (2.9 million tonnes),
- mineral oil products (2.1 million tonnes),
- agricultural and forestry products and live animals (1.8 million tonnes)
- fertilisers (1.1 million tonnes).

Inland shipping has increased sharply in recent years. Transit traffic and outgoing freight have also increased. Only incoming freight has registered a small decline.

Foodstuffs and fodders have increased by 12 %, as have agricultural and forestry products (+8 %). A further 80.3% increase was observed for solid mineral fuels (coal), which reached 0.3 million tonnes.

The by far highest increase of 175.0% (+0.7 million tonnes) occurred for stones and soil and construction materials, which reached 1.1 million tonnes. 2/3 of this amount was transported internally. The extraordinary increase is due to a special effect: large quantities of gravel and sand (more than 650,000 tonnes) were required for the partial silting of docks at the port of Linz. The sand and gravel was conveyed from Bagheria an der Donau, close to Linz[1].

Figure 11: Freight transportation on the Austrian Danube according to the most important freight segments (million tonnes)



Source: Statistik Austria

On the other hand, significant falls were posted for freight from the steel sector, almost all of which is exported by the steel industry in Linz. Amounts for iron, steel and non-ferrous metals fell back to 23.5% of previous levels (to a quantity of 0.7 million tonnes).

In the tanker shipping segment, mineral oil products increased slightly (+3 % to around 2.1 million tonnes), whilst chemical products fell by 80 %. However, in view of the almost negligible small amounts in this segment (around 7,000 tonnes of chemical products were transported in 2012 on the Austrian Danube), as a whole this fall is not very significant.

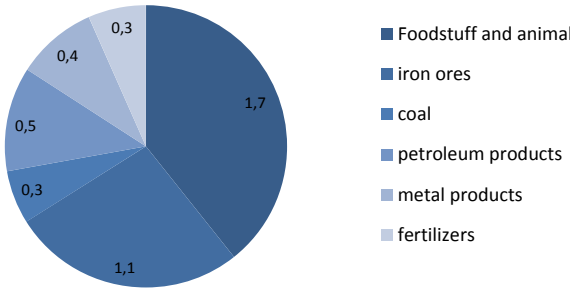
For the Slovakian Danube, the breakdown according to freight segments for the year 2012[2] is contained in the traffic data from the Gabcikovo dam. Gabcikovo is located almost at the centre of the Slovakian Danube segment, i.e. halfway between the Slovak capital of Bratislava and the Slovak port of Komarno.
According to Danube Commission figures, 6.0 million tonnes of freight was transported through the Gabcikovo dam

1 Source: Via Donau (2013), Donauschifffahrt in Österreich, Jahresbericht 2012 [Danube Shipping in Austria, Annual Report 2012]

2 No official data for 2012 from the Statistics Office or the Ministry were yet available at the time the report was completed.

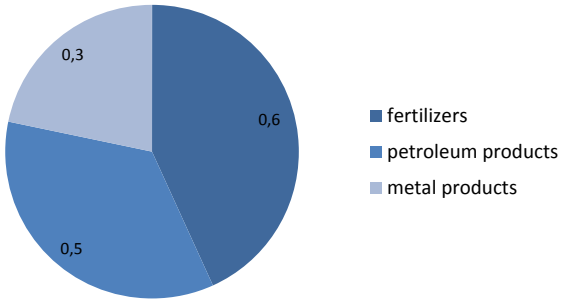
in 2012. Most of the volume of freight handled travelled upstream (4.2 million tonnes), with 1.3 million tonnes travelling downstream. The most important types of goods were foodstuffs and fodder (38 % of total transport volumes) and iron ore (26 % of total transport volumes):

Figure 12: Upstream transport in Gabcikovo/Slovakia according to freight type (millions of tonnes):



Source: Danube Commission

Figure 13: Downstream transport in Gabcikovo/Slovakia according to freight type (millions of tonnes):



Source: Danube Commission

The quantitative fall in downstream traffic related to fertilisers, petroleum products and metals.

If statistics for flags are considered, it is clear that these are closely related to the types of goods transported. Thus, the Ukrainian flag is represented for iron ore and coal, whilst Austrian and German flats dominate for liquid freight. 35 % of iron ore transport was conveyed under a Ukrainian flag, a further 28 % under a German flag, 20 % under a Hungarian flag and 11 % under an Austrian flag. 38 % of coal was transported by Ukrainian ships, 28 % by Slovak ships, 21 % by Bulgarian ships and 10 % by Romanian ships.

The important role played by Ukrainian ships in the transportation of ores and coal is probably attributable to the origin of iron ore from western Ukraine. Iron ore deposits from western Ukraine are transported by rail to the Danube and reloaded there onto ships or railway carriages. Ukrainian ships are hardly represented for freight types other than coal and ores.

Foodstuffs and fodder are mainly transported by ships flying German and Hungarian flags. A significant share of the fleet also flies flags from countries that are not members of the Danube Commission.
For liquid freight (petroleum products) the Austrian flag plays a predominant role in both upstream and downstream traffic with 37 % and 21 % respectively. The operations of Austrian mineral oil companies in the Danube area should be noted in this respect. Ships flying German flags, with 34 % (upstream) and 38 % (downstream)

are also of major significance. Slovakian flags have a share of 19 % (upstream) and 40 % (downstream).

Freight traffic for 2012 on the Hungarian Danube may be approximately ascertained at the locality of Mohács, the southern border cityen[1]. Tonnage passing through the Mohács registration point amounted to around 5.6 million tonnes in 2012, of which 2.9 million tonnes, i.e. 51 %, was travelling upstream. The largest freight volumes were registered in April with 606.5 thousand tonnes.
The most significant freight streams in Mohács are iron ore upstream (around one half of freight volumes) and grain downstream (between one half and two thirds of freight volumes).

In 2012 more than 1.3 million tonnes of iron ore was registered upstream, which was transported in ships flying German (35.3 %), Ukrainian (27.4 %) and Bulgarian (7.7 %) flags. In addition, 636,000 tonnes of solid fuels were transported upstream by Romanian (46 %), Slovakian (13 %), Bulgarian (12 %) and Ukrainian (7 %) ships. Alongside 247,000 tonnes of fertilisers, upstream traffic also included small quantities of metal products along with foodstuffs and fodders.

Downstream traffic from Mohács in a southerly direction, i.e. towards Croatia and Serbia, included 1.1 million tonnes of grain, 354,000 tonnes of foodstuffs and fodders, petroleum products (354 thousand tonnes), and semi-finished metal products (275 thousand tonnes).

In percentage terms, the most significant freight volumes in downstream traffic through the southern Hungarian Mohács may be broken down as follows: grain: 41 %; foodstuffs and fodders:13.8 %; petroleum products: 12.3 %; semi-finished metal products: 10.7 %.

Flags flying Romanian and German flags carried around 20 % each of transports of grain. Romanian ships were most heavily involved in foodstuffs and fodders (35 %). 2/3 of petroleum products were transported by ships flying Serbian flags. Ukrainian ships had a share of 40 % of metal product shipments

Summary

Development according to freight segments has weakened in the steel sector on the traditional Rhine, due to the cyclical and structural crisis in the steel industry. Quantities of ores and metals transported fell in 2012. There was also a fall in steel products on the Danube in Austria and in other Danube countries.

The following goods segments reported increases in quantities transported both on the Rhine and on the Danube:

- agricultural products
- foodstuffs and fodder
- solid fuels (coal)

Trends in the following segments differed between the Rhine and the Danube:

1 Source: Danube Commission. 2012 figures from the Hungarian ministry or Statistics Office were not yet available at the time the report was completed.

- chemical products (two-figure growth on the Rhine, larger fall on the Austrian Danube, and in any case lower in absolute terms)
- mineral oil products (stagnation on the Rhine, as against a slight rise on the Danube)
- sand, soil and construction materials (slight fall on the Rhine, whilst the Austrian Danube saw a clear increase, albeit due to a special effect)

With regard to North-South transport, the following freight segments reported positive development in France:

- Chemical products
- solid fuels (coal)

There were barely any changes in absolute terms for sand, soil and construction materials. There were falls for:

- fodders and foodstuffs
- petroleum products
- steel products
- ore

In Belgium increases were reported in the following freight segments:

- agricultural products
- oil products
- solid mineral fuels

There were falls for:

- ore
- steel products
- sand, soils and construction material.

Part 3:

Transshipment Trends in Ports

3.1 Seaports

The following two tables show transshipment volumes at the most important seaports of Hamburg-Le Havre-Range for the years 2011 and 2012.

Table 5: Transshipment quantities in the seaports of Hamburg-Le Havre-Range for 2012 (millions of tonnes)

	Rotterdam	Antwerp	Amsterdam	Hamburg	Le Havre
Dry bulk cargo	78,1	19,1	41,9	25,3	2,6
Liquid bulk cargo	214,2	45,3	43,2	14,1	36,7
Containers	125,4	104,1	0,8	89,4	22,7
General cargo *	23,8	15,7	8,2	2,1	1,4
Total transshipment	441,5	184,1	94,3	130,9	63,5

Source: Port of Rotterdam.

** general cargo not loaded into containers*

Table 6: Transshipment quantities in the seaports of Hamburg-Le Havre-Range for 2011 (millions of tonnes)

	Rotterdam	Antwerp	Amsterdam	Hamburg	Le Havre
Dry bulk cargo	87,3	19,1	46,6	25,6	3,0
Liquid bulk cargo	198,5	46,0	39,4	14,0	41,4
Containers	123,6	105,1	0,6	90,1	21,6
General cargo *	25,1	16,9	6,4	2,4	1,4
Total transshipment	434,5	187,1	93,0	132,1	67,4

Sources: Port of Rotterdam, Port of Hamburg, Port of Antwerp, Port of Amsterdam, Port du Havre.

** general cargo not loaded into containers*

The ports which are most important for hinterland traffic on inland waterways are Rotterdam, Amsterdam and Antwerp. In Rotterdam and Amsterdam there was an increase or between 1 and 2 %, compared to a slight fall in Antwerp of 1.6 %. These three ports are focused on different freight segments.

Amsterdam is a port of major significance for dry bulk cargo, in particular in the unprocessed foodstuffs sector. Liquid bulk is very important in Antwerp, along with container traffic. On the other hand, Rotterdam may be regarded as a universal port focusing on all segments.
Hamburg occupies third position in the marine container sector just behind Antwerp. There has been a growth trend since 2000 in hinterland traffic on the Elbe around Hamburg[1].

Liquid bulk cargo developed overall better from 2011 to 2012 than dry bulk cargo. Accordingly, with the exception of Antwerp where quantities have remained constant, transshipped quantities of dry bulk cargo have fallen in all ports compared to 2011. By contrast, in the liquid freight segment there was an increase in Rotterdam, Hamburg and Amsterdam, with falls only in Antwerp and Le Havre.

The development of container traffic was relatively restrained, whilst in the ports mentioned above (with the exception of Rotterdam) there were slight falls.

3.2 Inland ports

3.2.1 The Rhine

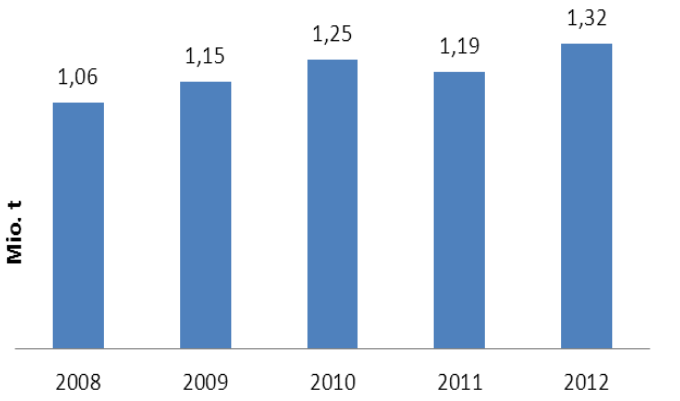
Agricultural products

In the port of Strasbourg, the most important Rhine port for agricultural produce, there was an increase of 10 % river-borne transshipment of cereals in 2012 compared to 2011. 1.3 million tonnes were transshipped. Over the last several years, there has been a welcome increase of grain shipments in Strasbourg (see graph).

328,000 tonnes of agricultural products were handled at the Port of Neuss-Düsseldorf, and 318,000 tonnes in Basel.

Sources: ports specified

Figure 14: Grain shipments in the Port of Strasbourg



Source: Port of Strasbourg

1 Container hinterland traffic by inland ship in the seaport of Hamburg: 2000: 27,000 TEU; 2008: 119,000 TEU; 2010: 95,000 TEU. Source: Hamburg Port Authority

Foodstuffs and fodder

Due to a special effect, namely the return into operation of an oil mill in the Port of Mannheim, there was an extraordinary increase in this segment[1]. Accordingly, the volume handled in Mannheim increased from 400,000 tonnes to a little less than 1.6 million tonnes, effectively quadrupling.

In Neuss-Düsseldorf the quantities of foodstuffs and fodders handled increased only slightly from 2.6 million tonnes to 2.7 million tonnes. In Basel more than 500,000 tonnes were registered, which is roughly in line with the average for the last few years.

Sources: ports specified

Ores and scrap metals

With around 1.4 million tonnes, the quantities of ores and scrap metals handled in Neuss-Düsseldorf increased slightly for the second year running. 1.3 million tonnes were handled the previous year, compared to 1.2 million tonnes in 2010. In Mannheim 0.58 million tonnes were registered, compared to 0.52 million tonnes the previous year. No figures have been provided for Duisburg, a centre for ore and coal transshipment.

Sources: ports specified

Iron and steel products

Basel is a transit port and a transshipment centre for steel goods which are transported up the Rhine to Basel and then loaded onto railway wagons for Italy. 2011 saw falls of 30 %, above all due to the recession in Italy. The quantities for that year amounted to 0.4 million tonnes. In 2012 there was a slight increase to around 0.5 million tonnes.

Sources: Port of Basel

Coal

In Mannheim the quantity of coal handled increased slightly from 2.1 million tonnes to 2.2. million tonnes. There was a significant increase in Karlsruhe: there quantities of coal increased from 880,000 tonnes to 1.2 million tonnes, thus by around 40 %! According to the port authorities, this was due to three factors. First, the placing into service of an additional power plant block alongside the existing EnBW coal-fired power station in Karlsruhe increased the quantities of coal handled.

Secondly, the Waldhof accident in the first quarter of 2011 caused interruptions in transshipment operations which were made up in 2012 (basis effect 2012/2011). Thirdly, the insolvency at the end of 2011 of the Petroplus refinery in Bavarian Ingolstadt resulted in a temporary transfer to coal by the handling company in the Port of Karlsruhe. (In the meantime, mineral oil products are once again being delivered from Ingolstadt to Karlsruhe by rail, where they are transferred onto ships.)

Sources: ports specified

1 A few years ago the oil mill was shut down, following which the quantities handled in this freight segment fell drastically. In 2012 the mill was placed back into service.

Stone, soils and building materials

Due to the natural availability of this raw material, the Upper Rhine area is a regional centre for this freight segment: this area contains gravel deposits dating back to the glacier movements towards the end of the last Ice Age. Today, this gravel plays an important role in supplying the construction industry throughout the entire Rhine basin (Germany, France, the Netherlands, Switzerland, Belgium).

Gravel and sand make up a significant portion of transshipment volumes at the loading points for gravel and sand in inland ports. This is the case for example for the Port of Breisach on the German upper Rhine. 60 % of the annual volumes transshipped of 0.8 – 1.2 million tonnes is made up of gravel, sand and chippings.

The Port of Strasbourg plays a more important role in absolute terms. In 2012 almost 3 million tonnes of sand and gravel were transshipped there (+ 8 % compared to 2011). The vast majority of this amount was for export.

In Basel the one-million mark in the transshipment of stones, soil and construction materials was reached in 2012 (1.06 million tonnes). This result marked a considerable increase compared to the previous year.

Sources: ports specified

Mineral oil products

Karlsruhe, which hosts the Mineralölraffinerie Oberrhein [Upper Rhine Mineral Oil Refinery], is an important production location for mineral oil products. Shipping volumes in 2012 amounted to around 4.2 million tonnes compared to 3.6 million tonnes during the previous year. This accordingly represented an increase of 16 %.

The vast majority of freight was comprised of fuels and light heating oil. The waterway's market share for the dispatch of petroleum products is around 20 %. This figure applied both in 2012 as well as for the long-term average over the period 2002-2012.

Due to a special effect, there was an enormous increase in Basel. The special effect was caused by the breakdown of both Swiss refineries in Colombier and Cressier. Both refineries are located a long distance from waterways, with the result that refinery production at these facilities, and the dispatch of its products, is not linked with Rhine shipping.

However, since the refineries suffered a (temporary) breakdown in 2012, a replacement supply of mineral oil products to Switzerland was delivered largely along the Rhine. This meant that incoming petroleum products at the Port of Basel increased by 55 % in 2012, reaching an extraordinarily high figure of 3.6 million tonnes.

Sources: ports specified

Chemical products

Mannheim was able to maintain the previous year's transshipment level for chemical products of around 1.2 million tonnes. There was only a very slight fall of 1.3 %. In Karlsruhe just under 600,000 tonnes were handled in 2012. Compared to the previous year (2011: 550,000 t), this amounted to an increase of 8 %.

Sources: ports specified

Containers

Container traffic along the Rhine increased at the Port of Strasbourg by around 120,000 TEU. This corresponded to an approximately 15 % rise compared to 2011. The number of loaded containers increased more than the number of empty containers. This shows that, following the low water levels of 2011, Rhine shipping is once again achieving growth in the economically profitable segment of loaded containers.

In Strasbourg roughly the same number of loaded containers were transshipped by Rhine shipping as by rail (around 67,000 TEU each). Accordingly, these modes of transport were able to achieve a similarly high rate of growth compared to the previous year (see table):

Table 7: Loaded containers in the Port of Strasbourg

Mode of transport	TEU quantity 2011	TEU quantity 2012	Change in %
Rhine shipping	54.214	66.507	+22,7 %
Railway	54.376	66.916	+23,1 %
Road	97.391	104.821	+7,6 %

Source : Port of Strasbourg

There were also increases in water-borne container traffic in the ports of Basel and Mannheim.

Both Basel and Mannheim broke through the 100,000 TEU mark: volumes handled in the German port increased from 99,088 TEU (2011) to 117,409 TEU (2012). This amounted to growth of 18 %. In the Swiss port, container traffic on the Rhine increased from 93,400 TEU (2011) to 102,240 TEU (2012). There was a 9.5 % rise.

Sources: ports specified

According to VNF figures, 12.2 million tonnes were transshipped in French Rhine ports, representing an increase of 1.5 % compared to 2011.

3.2.2 Inland ports in Belgium and France

Lüttich

The third-largest (pure) European inland port transshipped 13.3 million tonnes of water-borne freight in 2012, compared to 13.9 million tonnes during the previous year (- 4 %). Rail transport was able to report a slight increase of 5 % to 1.6 million tonnes, whilst road haulage fell by 6 % to 3.7 million tonnes. Although the closure of parts of the Lüttich steel manufacturing industry had an effect on the result, alternative freight streams have been developing for some time, thereby preventing a severe fall in overall volumes handled.

Brussels

With water-borne transshipment volumes of 4.7 million tonnes (2012), Brussels is an important port for Belgian inland shipping, focusing on the segments of sand and construction materials and petroleum products. Quantities of water-borne freight loaded and unloaded fell overall by 5 % in 2012.

In 2012, construction materials accounted for 57 %, whilst petroleum products for 26 % of the total volumes transshipped. 2.7 million tonnes of construction materials and 1.2 million tonnes of petroleum products were transshipped. The volumes from the previous year were slightly higher for construction materials, whilst the figures for petroleum products were slightly lower compared to 2012. The figures for containers were as follows: 16,000 TEU in 2012, accordingly 14 % more than in 2011. However, TEU quantities have been stagnating since 2007.

60 % of the quantities handled in Brussels relates to the Netherlands (place of origin or destination for goods loaded or unloaded), and 28 % to Belgium. Sand and construction materials originate principally from Dordrecht (NL) and Breskens (NL), whilst petroleum products originate from Antwerp (BE).

Ghent

Ghent is a combined river-sea port. With a volume of inland shipping handled of around 23.2 million tonnes, the result for Ghent increased by around 1 % in 2012. (The volume transshipped by the seaport was 26 million tonnes.) There were some parallels between the volumes transshipped by the seaport and the inland port as regards the development of freight transport according to freight segment. Accordingly, the agricultural products segment grew most both for marine transshipment and for inland transshipment: the quantities for inland transshipment increased by 311,000 tonnes, or 27.5 %. There was also strong growth for inland transshipment in the «fertilisers» segment (+ 389,000 tonnes or +38 %). The freight segments of «construction materials» and «petroleum products» fell in both areas.

Paris

River traffic in the second-largest pure inland port in Europe increased from 20.6 million tonnes in 2010 to 22 million tonnes in 2011 (+7 %). In 2011 construction materials accounted for by far the largest part of the entire water-borne traffic with 16.6 million tonnes. Further freight segments of significance are agricultural goods (1.9 million tonnes) and machines and vehicles (1.2 million tonnes). Container traffic in 2011 amounted to 150,000 TEU, which meant a marked rise compared to 2010 (when 127,000 TEU were registered). 2012 figures were not yet available at the time the report was completed.

Rouen

The Port of Rouen on the Seine is a combined inland and seaport. River traffic in 2011 amounted to 6 million tonnes (+ 6 % compared to 2010) and seaport transshipment to 25.4 million tonnes. Alongside fluid goods, above all grain and other agricultural products were significant in Rouen. 2012 figures were not yet available at the time the report was completed.

Lyon

1.5 million tonnes were loaded onto and unloaded from ships in 2012. This represented a 6 % increase over 2011. The contribution of rail to transshipment was 0.5 million tonnes, with the result that the largest part of overall transshipment (considering all modes of transport together, the port handled 11.4 million tonnes) related to road freight haulage. Water-borne container traffic increased by 17 % to 69,619 TEU. In Lyon, the Rhone

has a share of around 31 % of overall container traffic for the port (221,982 TEU). The growth rate for water-borne container traffic was roughly at the level of the growth rate ascertained for rail and road.

Sources: ports specified

3.2.2 Inland ports in the Danube area

Regensburg

Freight shipped through the largest Bavarian inland port was just under 1.6 million tonnes in 2012, thus accounting for a modal split share of 20.5 % out of the port's overall traffic. The two most important freight segments for shipping are agricultural products and foodstuffs and fodders.

Table 8: Shares of different modes of transport out of freight transshipped in the Port of Regensburg

Year	Freight transshipped in millions of tonnes		
	Vessel	Rail	Truck
2002	2,4	0,6	2,8
2006	2,4	1,1	3,3
2008	2,5	1,8	3,4
2011	1,5	2,2	3,9
2012	1,6	2,0	4,1

Source: Port of Regensburg

Water-borne transshipment has increased in Regensburg in the years since the financial crisis. A reason for this is the Danube area steel industry, which was affected by the crisis. Due to the partial closure of steel works (as in Smederovo, Serbia), there was a loss of long-range ship-borne transportation of steel and ores. There were also changes to industry-wide ordering procedures: due to uncertainty regarding future cyclical performance, small shipments are currently preferred, above all in the steel industry, which from a logistical perspective is much more suited to rail.

Linz

Linz hosts in the first place the river terminal of the voestalpine steel works, the port with the largest shipping traffic in Austria. Shipping traffic in 2012 amounted to 3.3 million tonnes, thus almost exactly the same amount as the previous year.

Alongside this river terminal there is also Hafen Linz AG. Here, liquid and dry bulk cargo in addition to containers are transshipped. In 2012, tanker port transshipment increased by 16.9 % to more than 600 thousand tonnes. Since there was a fall for fertilisers, overall water-borne transshipment only grew by 4 %, reaching a volume of 1.17 million tonnes. There was also a 4.1 % rise in the number of ships arriving in port (1,167 ships in 2012).

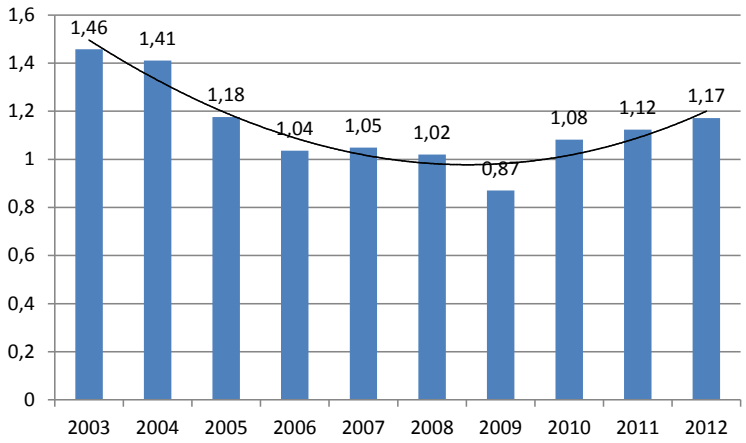
Table 9: Transshipment figures for Hafen Linz AG

	2011	2012	Change 2012/2011
Water-borne transshipment / commercial port	601.818 t	562.427 t	- 6,5 %
Water-borne transshipment / tanker port	521.227 t	609.218 t	+ 16,9 %
Overall water-borne transshipment	1.123.045 t	1.171.645 t	+ 4,3 %
Water-based and land-based transshipment	2.999.011 t	3.150.974 t	+ 5,1 %
Share of shipping transshipment out of overall transshipment (%)	37 %	37 %	+/- 0 %

Source : Hafen Linz AG, calculation CCNR

In Hafen Linz AG there was a falling trend in water-borne transshipment between 2003 and 2009, although subsequently a growth trend has been observed.

*Figure 15: Development of water-borne port transshipment of Hafen Linz AG (millions of tonnes) **



Source: Hafen Linz AG
** without the Port of Voestalpine*

Vienna

The inland port in Austria's capital city specialises in liquid freight. Around 1 million tonnes of mineral oil products were transshipped on water in 2012, corresponding to 86 % of overall shipping freight transshipment in the Port of Vienna. In 2012, the overall transshipment volume increased to 1.2 million tonnes, and was thus 14 % higher than in 2011.

The volume shares out of overall water-borne transshipment at Austrian Danube ports and transshipment sites are as follows: 34.7 % river terminal of voestalpine in Linz, 20.6 % Hafen Linz AG, 12.8 % Port of Vienna, 21.7

% other ports and transshipment sites, 6.2 % Ennshafen and 4.0 % Krems[1].

Budapest

811 thousand tonnes of shipping traffic were loaded and unloaded at the Port of Budapest in 2011. Iron and steel goods and agricultural products are the most important freight segments.

Dunaújváros

This location handles the largest quantities in the whole country. Most of the freight transshipped is coal and coke. Freight volumes in 2011 amounted to 1.1 million tonnes, thus roughly the same as in 2009.

Baja

Baja is the third-largest Hungarian port, which is located in the far south in the vicinity of Mohács. This port handles almost exclusively agricultural products and fodders. In 2011 the freight volumes in Baja amounted to 461,000 tonnes.

Constanza

Marine and inland traffic volumes have developed according to a similar trend in this combined river-sea port which is of equal interest for European inland and marine shipping. Generally speaking, marine traffic in Constanza is around five times as high as river traffic. 2012 figures were not yet available at the time the report was completed. Development over the years after 2006 has shown a stronger fall for marine shipping than for the river sector. In addition, the growth which started in 2010 has operated more quickly in the river segment than for marine traffic.

In 2011 river traffic amounted to 8.7 million tonnes, against 10.6 million tonnes in 2010. The figures were slightly higher in the pre-crisis years: accordingly, 12 million tonnes were registered in 2006, followed by 10.8 million tonnes in 2007.

Sources: ports specified , Statistik Austria [Austrian Statistics Office], Via Donau, Hungarian Ministry for Development.

Summary

Seaport transshipment in the most important ports of Hamburg-Le Havre-Range was characterised in 2012 by a two-speed trend in terms of volume growth: whilst there was growth in the liquid bulk cargo segment, there were slight falls for dry bulk cargo and containers.

Increases in water-borne traffic were achieved in the inland ports on the Rhine. Special effects also contributed to this. This was the case for Basel (mineral oil products), Karlsruhe (coal) and Mannheim (foodstuffs and fodders). In all three cases, these special effects had a positive effect on the transshipment result. Two of these special effects were associated with the provision of energy: first, Rhine shipping was reinforced due to the breakdowns at two refineries and the associated stoppage in the pipeline supplying fuel and heating oil to

1 Source: Via Donau

Switzerland. Secondly, the placing into service of an additional coal-fired power plant block in Karlsruhe led to a strong rise in coal transshipment.

Inland ports in Belgium registered slight falls in 2012 in Brussels (– 5 %) and Lüttich (– 4 %), whilst there was a slight increase of 1 % in Ghent. This fall at the second-largest inland port in Europe, Lüttich, may be attributed above all to the crisis in the Lüttich steel industry. The fall at the Port of Brussels may rather be explained with reference to sand, soils and construction materials.

With the exception of Lyon which saw a 6 % increase, the figures for 2012 are not yet available.

As a rule, the inland ports in the upper Danube area reported an increase in water-borne transshipment in 2012. The 3.3 million tonnes of ore traffic in the Port of Linz remained constant compared to 2011 which, in view of the crisis within the steel industry, may in itself be regarded as a success. More robust growth may be discerned for liquid freight than for dry cargo (see the ports of Linz and Vienna). This corresponds to the results for seaport transshipment.

Part 4:

4. Development of Transport Capacity

4.1 Dry Cargo Shipping

9 motorised cargo vessels, 8 pushed barges, 1 push boats, 4 tugs, 2 pontoons, 1 motorised ferry and 7 additional ships not specifiable in closer detail were placed into service in Western Europe in 2012. The average tonnage for the 9 motorised cargo vessels was around 2,700 tonnes.

The new push boat was added to the fleet of the shipping company Thyssen Krupp Veerhaven B.V. It is accordingly used as a feeder vessel for transporting ores between the seaports and the Duisburg steel industry[1].

The figures for 2012 indicate overall a very marked fall in the construction rate of new vessels for dry cargo shipping. Whilst the 2012 statistics recorded by 3 May are partially incomplete, a very significant fall in new vessels is nonetheless apparent (see table).

*Table 10: New ship building volumes for dry cargo shipping**

Year	Newly built tonnage (tonnes)
2008	432.000
2009	480.000
2010	135.700
2011	100.600
2012	** 57.414

Source: IVR

** Figures for Belgium, Germany, the Netherlands, France and Switzerland.*

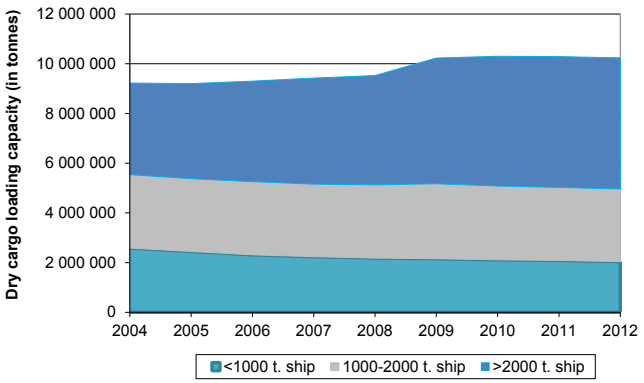
*** Some figures are incomplete*

1 The push boat, which is equipped with three engines, pushes between 4 and 6 push barges laden with ore and coal, and thus transports between 60,000 and 80,000 tonnes of dry cargo (ore & coal) per day.

Between 2000 and 2012 a total of around 1,000 new dry cargo ships were brought onto the western European market, mostly in the Netherlands.

The development of the total loading capacity in the dry cargo sector in Western Europe is presented in the following figure. It shows how, on the one hand, the dry cargo fleet increased strongly due to new buildings (especially in the time period 2008/2009). This is mainly the case for vessels in the largest categories (>2000 tonnes). On the other hand, the total scrapped tonnage and/ or decrease in the loading capacity due to vessels sold to other countries outside Western Europe has been rather limited. This can especially be seen in the gradual decrease of the total loading capacity of smaller vessels.

Figure 16: Development of the available loading capacity of the Western European dry cargo fleet



Source: PANTEIA

4.2 Tanker Shipping

According to IVR figures, there was a marked fall in the rate of construction of new tanker ships in 2011 and 2012. According to the latest IVR figures, 39 new tanker ships came onto the market in 2012, compared to 86 during the previous year.

The tonnage of new ships totals around 117,000 tonnes. The figure in 2011 was around 185,300 tonnes. The average capacity of the newly built ships in 2012 was around 3,000 tonnes. Thus, compared to the previous years 2009, 2010 and 2011 a further fall in investment may be discerned.

*Table 11: New ship building volumes for tanker shipping **

Year	Newly built tonnage (tonnes)
2008	144.580
2009	391.000
2010	339.000
2011	185.000
2012	117.000

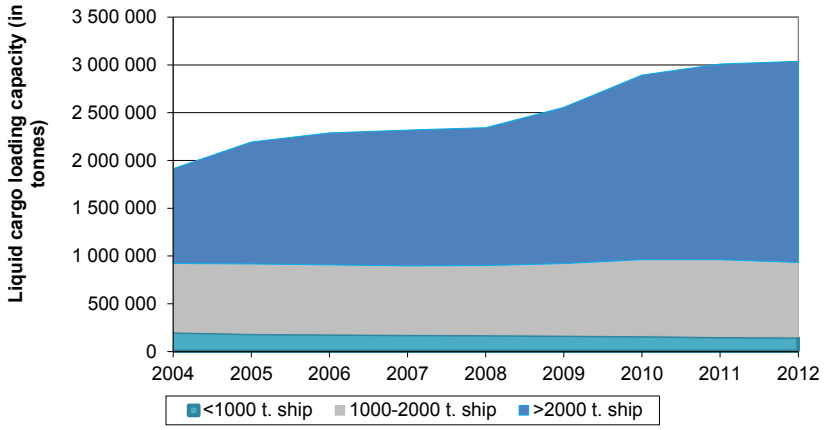
Source: IVR

** Figures for Belgium, Germany, the Netherlands, France and Switzerland.*

The percentage fall in newly built tonnage in 2012 compared to the previous year is 37 %. The weakening is thus lower than that which occurred between 2010 and 2011, when newly built tonnage halved.

The development of the total loading capacity in the liquid cargo sector in Western Europe is presented in the following graph. A strong increase can be observed in the total capacity of the tanker fleet, mainly due to new buildings in the largest vessel categories. The strong increase is related to the replacement process of single-hull tankers by double hull vessels. This transition period should be completed by the end of 2018.

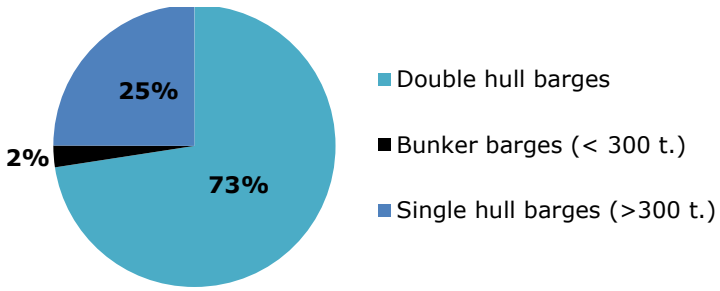
Figure 17: Development of the available loading capacity of the Western European liquid cargo fleet



Source: PANTEIA

The graph also shows that the total scrapped tonnage is not relevant in comparison with the total tonnage of new buildings. For example, in Germany a total of 12 self-propelled tankers (total loading capacity: 15,638 tonnes) and 3 tanker barges (total loading capacity: 4,611 tonnes) have been scrapped between 2003 and 2012[1].

*Figure 18: Estimation of the Western European tanker fleet based on the share of EBIS-inspected barges in 2012**



Source: EBIS

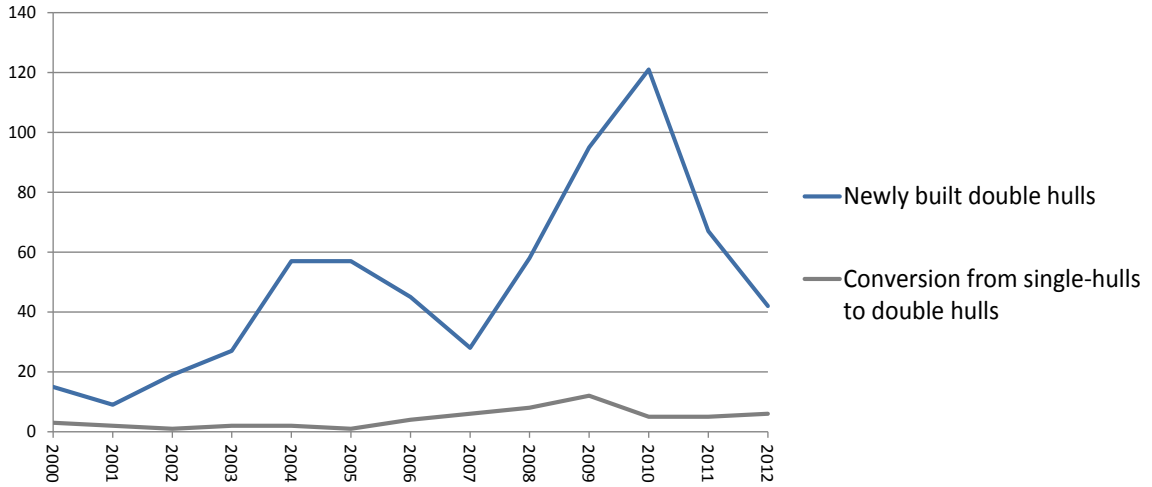
** The total number of tankers inspected by the EBIS is roughly comparable to the size of the Western European fleet of tankers (source: CCNR).*

1 The remaining vessels taken out of the German fleet have been sold to other countries, which was a total of 142 self-propelled tankers (total loading capacity: 242,948 tonnes) and 9 tanker barges (total loading capacity: 16,617 tonnes) between 2003 and 2012. Source: ELWIS

In the Netherlands, a total of 12 scrapped tankers (total loading capacity: 11,889 tonnes) have been reported between 2009 and 2012[1].

The large majority of the Western European tanker fleet is already estimated to be double hull vessels (see figure below).

Figure 19 : Development of the European double hull tankers fleet (2000-2012)



Source: EBIS

The development of the European double hull tanker fleet (2000-2012) is also presented. The growth is based on information obtained from the EBIS organization, which monitors the operational safety of tankers on inland waterways. The figure shows the sharp decrease of newly built tankers in the last two years. The number of single hull vessels being converted into double hull vessels is very limited and has been rather stable in the last three years.

4.3 Passenger Shipping

4.3.1 River-cruise shipping

The figures for newly built river cruise ships have grown almost continuously since 2007. The construction rate for new ships in 2007 was still very low (only 5 new ships). The rate of construction increased almost continuously over the years after 2007. In 2012 a figure of 23 ships was achieved[2]. Ships were brought into service in 2012 in four countries:

1 Source: Binnenvaart publications 2010 until 2013 by W. van Heck – A.M. van Zanten.

2 Source: IVR

- 16 ships fly a Swiss flag
- 4 ships fly a Dutch flag
- 2 ships fly a Czech flag
- 1 ship flies a German flag

The order books for 2013 indicate a new-build rate of 22 units, and 25 units in 2014[1].

In 2012, 900 cabin ships passed through the Main-Danube Canal (+14 % compared to 2011) – the highest ever rate. The Main-Danube Canal is an artificial link between the Rhine area and the Danube area. For instance if a classic river cruise is undertaken from Amsterdam to Passau, Vienna or Budapest, the ships pass through the Main-Danube Canal, thus overcoming a difference in height of 243 metres.

However, despite the growth rates which continue to hold up, there are certain bottlenecks in the commercial sector:

- the landing places in ports; infrastructure occasionally falls short of shipping companies' requirements. Landing places are required for ships, whilst electricity supply and ecological concerns must also be guaranteed. Due to the cruise shipping boom, individual municipalities such as for example Nuremberg are significantly expanding their landing places for cabin ships[2]. However, some municipalities adopt a critical stance towards river cruise shipping.
- The customer segment with the highest growth – namely passengers from the USA, Canada and Australia – expect highly luxurious ships, which can only be achieved with high electricity consumption. It is important to create the appropriate infrastructure framework conditions (land-based electricity supply connection points).
- Competition from marine cruises, especially as regards the luxury aspect, is extremely high.

The providers of river cruises are heavily expanding their marketing activities in English-speaking countries (USA, Australia, Canada and New Zealand). There are substantial potential customers in these countries who, for various reasons, would like to go on a European river cruise. Factors such as the enduring pronounced cultural affinity between US citizens and Europe also play a role.

4.3.2 Day-trip vessels

A few new tourist ships have come onto the market. Two of these were placed into service by Stern und Kreisschifffahrt GmbH, the market leader for tourist navigation in Berlin. A ferry has also recently been placed into service, which travels upstream along the Elbe from Hamburg.

1 Quelle: Hader & Hader (2013), The River Cruise Fleet Handbook 2013

2 See further: Straubinger Tagblatt, article: Flusskreuzfahrt-Boom halt an [River cruise shipping boom holds steady], of 24 May 2013.

Part 5:

Transport capacity utilisation in Western Europe

5.1 Dry cargo transport capacity

The following figure presents the development of the demand and supply of IWT transport capacity in the dry cargo sector[1]. Until 2008 the development of the available and the required dry cargo fleet remained more or less stable. However, in 2009 the situation changed drastically as the required fleet capacity dropped due to the decline of freight flows while the fleet was expanded (see section 4.1). The result: a strong overcapacity in the dry cargo sector.

In the year 2010, the freight volumes recovered somewhat. Nevertheless, the fleet was still increasing as a result of new vessels that were ordered in the years 2007 and 2008.

In 2011, there appeared to be some temporary reduction of the overcapacity in the market when water levels were periodically extremely low and the Rhine market was blocked for 33 days (due to an accident with a tanker vessel). This resulted in a higher capacity utilisation compared to 2010. However, this reduction was purely incidental and was not the result of structural, persistent developments in the market.

In 2012, the water levels normalised again, slightly more capacity was added to the market and the volumes transported remained more or less the same as in 2011. This resulted in a decrease of the capacity utilisation levels compared to 2011. The year 2012 showed similar overcapacity levels as in 2010. (on average around 28%).

It is important to point out that a (theoretical) capacity usage rate of 100 % is not necessary in order to establish an economically healthy market situation. This is because a particular reserve capacity is always required in order to make up for (1) seasonal variations and (2) low water periods.

This reserve capacity is calculated from parts of Table 12 (specifically, from each part in which the difference

1 For more information on the methodology behind the model of the capacity utilisation in Western Europe, see Annex 1 and Annex 2 of the report "Monitoring the capacity utilisation level of the Western European fleet, Results: 2010 and 2011" by PANTEIA. Available upon request via the Central Commission for the Navigation of the Rhine (CCNR).

between available and required transport capacity is reported for the years 2004 to 2008).

- vessels < 1,000 tonnes: 0.32 mil tonnes (2004-2008 average)
- vessels between 1,000 - 2,000 tonnes: 0.33 mil tonnes (2004-2008 average)
- vessels > 2,000 tonnes: 0.53 mil tonnes (2004-2008 average)

When the reserve capacity is compared with the difference between demand for transportation and supply in 2012, it is clear that the problem of overcapacity arises above all in fleet segments with ships of more than 2,000 tonnes.

Due to a fall in the demand for transportation and a strong increase in newly built large ships (>2,000 tonnes), there is currently (in 2012) overcapacity of 1.21 million tonnes. This is calculated by taking the figure of 1.74 million tonnes (= difference between available loading tonnage and demand in 2012) less the reserve capacity for ships with more than 2.000 loading capacity, thus less 0.53 million tonnes.

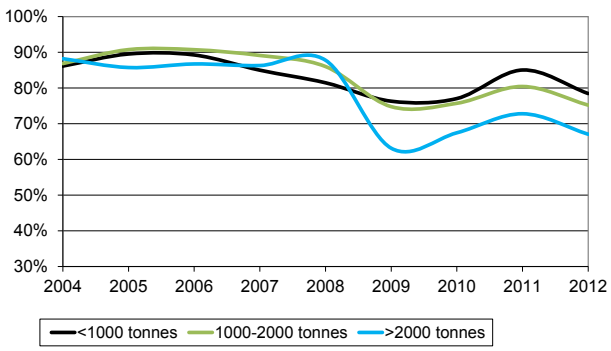
Assuming an average loading capacity per ship of around 2,900 tonnes in 2012, the total overcapacity may be estimated at 400 ships (including pushed barges). As the forecasts for the evolution of the transport demand in inland shipping are highly uncertain, this overcapacity cannot be split up into the two components of cyclical and structural overcapacity.

There is hardly any overcapacity in the smallest shipping category (< 1,000 tonnes).

In the category of ships between 1,000 and 2,000 tonnes, due to changes in demand for transportation, there were fluctuations in overcapacity, whilst the supply remained relatively stable. Assuming an average tonnage per ships of 1,370 tonnes in 2012 in this segment, and a smaller overcapacity of 0.39 million tonnes (after deducting reserve capacity) current overcapacity in this segment is around 286 ships (including pushed barges).

The problem of overcapacity in the dry cargo sector has resulted in lower freight rates (see section 7.1) and less efficiency. Larger vessels are also used for the transport of volumes that are normally carried out by smaller vessels. This has resulted in lower loading capacity rates of vessels[1].

Figure 20: Transport utilisation rate of the fleet in the dry cargo sector in Western Europe ∗



Source: PANTEIA

∗ The figures presented here can differ from figures presented in previous years. In 2013, the capacity monitoring model has been updated based on new statistical information.

1 Source: ING Economisch Bureau, May2013.

Table 12: Total required and available tonnage in the dry cargo sector in Western Europe (in million tonnes)

Demand and supply in the dry cargo sector in Western Europe	2004	2005	2006	2007	2008	2009	2010	2011	2012
Required tonnage									
- Vessels <1000 tonnes	2.23	2.19	2.07	1.90	1.78	1.65	1.63	1.78	1.60
- Vessels between 1000-2000 tonnes	2.57	2.66	2.67	2.60	2.54	2.26	2.25	2.36	2.20
- Vessels >2000 tonnes	3.25	3.28	3.51	3.68	3.86	3.19	3.52	3.83	3.54
Total required tonnage	8.04	8.13	8.24	8.19	8.17	7.10	7.40	7.97	7.33
Available loading tonnage									
- Vessels <1000 tonnes	2.58	2.45	2.31	2.24	2.18	2.16	2.11	2.09	2.04
- Vessels between 1000-2000 tonnes	2.95	2.93	2.94	2.92	2.95	3.02	2.97	2.94	2.92
- Vessels >2000 tonnes	3.68	3.82	4.04	4.27	4.40	5.06	5.22	5.26	5.28
Total available loading tonnage	9.22	9.20	9.30	9.42	9.53	10.23	10.30	10.29	10.24
Difference between available and required loading capacity (tonnage)									
- Schiffe < 1.000 Tonnen	0.36	0.26	0.25	0.34	0.40	0.51	0.48	0.31	0.44
- Schiffe zwischen 1.000 - 2.000 Tonnen	0.39	0.27	0.27	0.32	0.41	0.76	0.72	0.57	0.72
- Schiffe > 2.000 Tonnen	0.43	0.55	0.54	0.58	0.54	1.86	1.70	1.43	1.74
Insgesamt	1.18	1.07	1.06	1.24	1.35	3.13	2.90	2.32	2.90
Average transport capacity utilisation rate (in %)	87 %	88 %	89 %	87 %	86 %	69 %	72 %	77 %	72 %

Source: PANTEIA

5.2 Liquid cargo transport capacity

The transport capacity utilisation levels in the liquid cargo sector also decreased in 2012, due to the reasons mentioned above. The additional capacity added in the liquid cargo sector was much higher than for dry cargo. (see point 5.3).

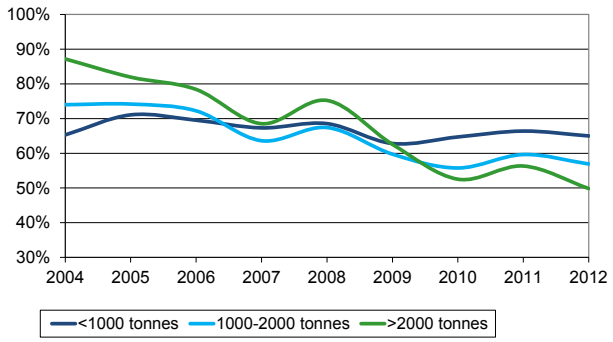
Due to the replacement process of single-hull tankers, a “double” tanker fleet can be observed. The average transport utilization rate in the tanker shipping sector was in 2012 approximately 52%. Especially for vessels in the largest categories (>2000 tonnes) there is a substantial overcapacity.

The overcapacity in the liquid cargo sector is considered to be temporary; it should be solved by 2019.

Nevertheless, the phasing out process of single-hull tankers is going slower than expected, causing a period of significant overcapacity over a number of years. In this respect, scenarios indicate that – based on a realistic assumption of new construction activity and the phasing out from the market of single-hulled vessels – a certain overcapacity in the tanker shipping market seems to be realistic until the start of 2019[1].

It is, however, important to note that a share of the unused capacity is not considered as overcapacity, because it is used as 'floating stock' for mineral oil products.

Figure 21: Transport utilisation rate of the fleet in the liquid cargo sector in Western Europe∗



Source: PANTEIA

∗ The figures presented here can differ from figures presented in previous years. The capacity monitoring model has been updated in the year 2013 based on new statistical information regarding vessels used for bunkering activities.

1 See further: Fact sheet on "Re-structuring of the Tanker Shipping Fleet by 2019" in CCNR Market Observation Report 2012-2.

Part 6:

Water Levels

Water levels in 2012 in the Rhine area were characterised by significantly higher gauge figures. By contrast, in April, May and June, as well as October, November and December 2011, particularly low water levels were achieved.

Moreover, according to the data, the middle Rhine segment was most strongly affected by the lower water in 2011. At least the differences in gauge figures here between 2011 and 2012 were the largest here. The second-highest difference was on the lower Rhine, whilst the lowest was on the Upper Rhine[1].

- Maxau on the Upper Rhine: Here the average water level in April, May and June 2012 was roughly one third more than the corresponding average value from the equivalent period in the previous year. There was a similar difference for the autumn and winter months of October, November and December.
- Kaub on the middle Rhine: There were highly significant differences in Kaub between 2011 and 2012. In spring 2012, gauge figures were almost twice as high as the equivalent period in the previous year. The picture was similar for the autumn and winter months.
- Ruhrort on the lower Rhine: In April, May and June, gauge values were on average 50 % higher than in 2011. The same was the case for October, November and December.

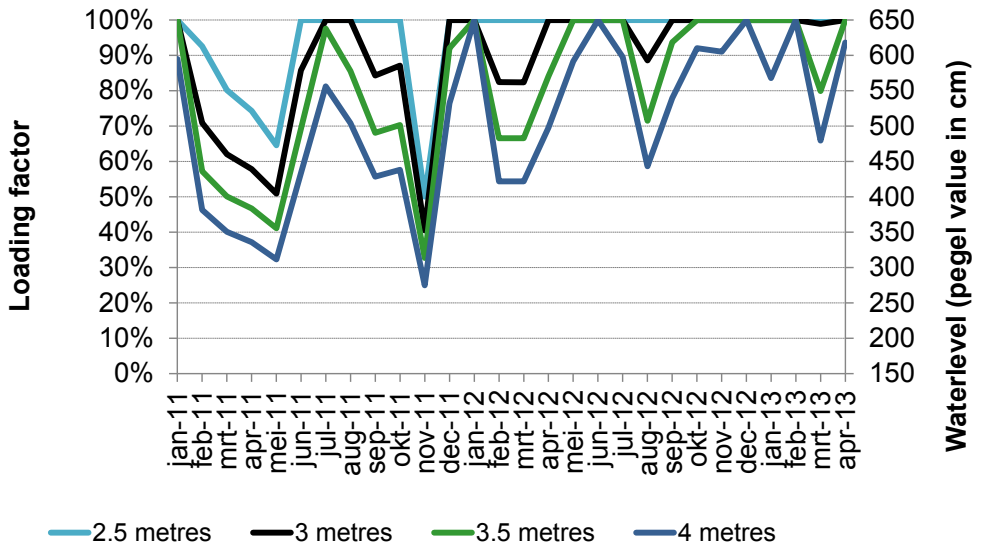
Average water values in the Danube area in March/April 2012 along the entire Danube remained at the level of long-term average values. In July there was a sudden fall in water levels along the entire Danube, whilst on the lower Danube water levels in August fell relatively sharply. Overall, 2012 water levels only achieved the values for 2011 and 2003, the critical year for low water, on a few occasions. In view of the interruption to shipping at the start of the year and the abrupt fall in water levels in June, August and September, nautical conditions for 2012 as a whole are considered to have been unfavourable[2].

1 CCNR Secretariat calculations, based on the data source: Federal Waterway and Shipping Administration, prepared by the Federal Institute for Hydrology.

2 Source: Danube Commission

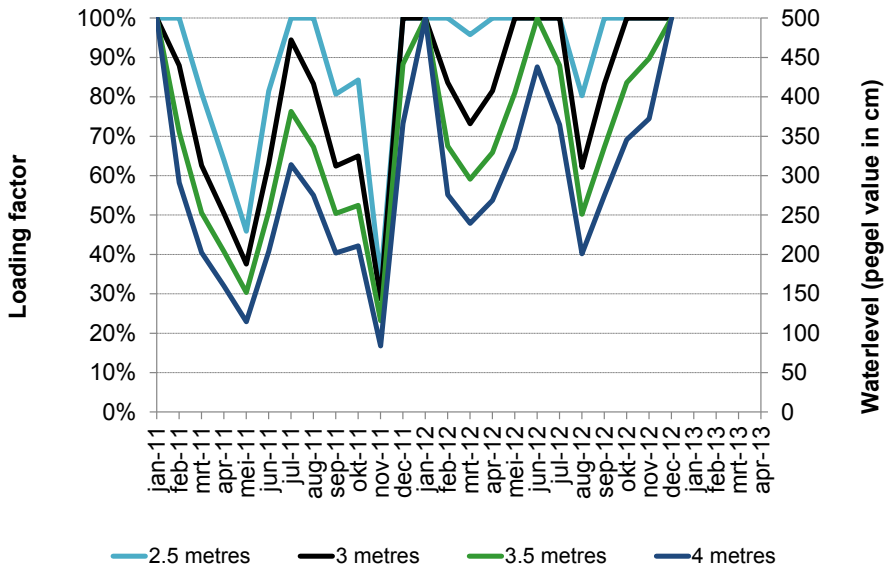
Figures 22 to 27 presents the impacts of the water levels on the maximum possible loading factor of different vessels categories in 2011 and 2012 at the Rhine[1], Elbe and a section of the Danube. The average yearly loading factors that were feasible at the water level conditions per vessels category is also presented in table 13. As mentioned before, it shows that in 2011 the low water levels had a significant impact on the loading factors that could be reached.

Figure 22: Impact of the average water levels on the loading factor of different vessel categories (from 2.5 to 4 metres draught) at Maxau



Source: PANTEIA

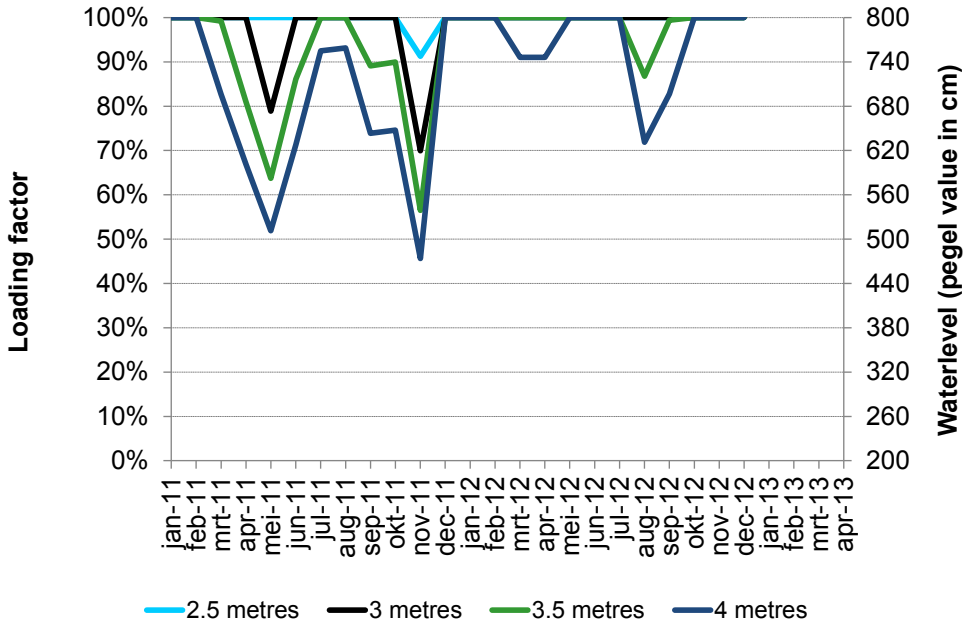
Figure 23: Impact of the average water levels on the loading factor of different vessel categories (from 2.5 to 4 metres draught) at Kaub



Source: PANTEIA

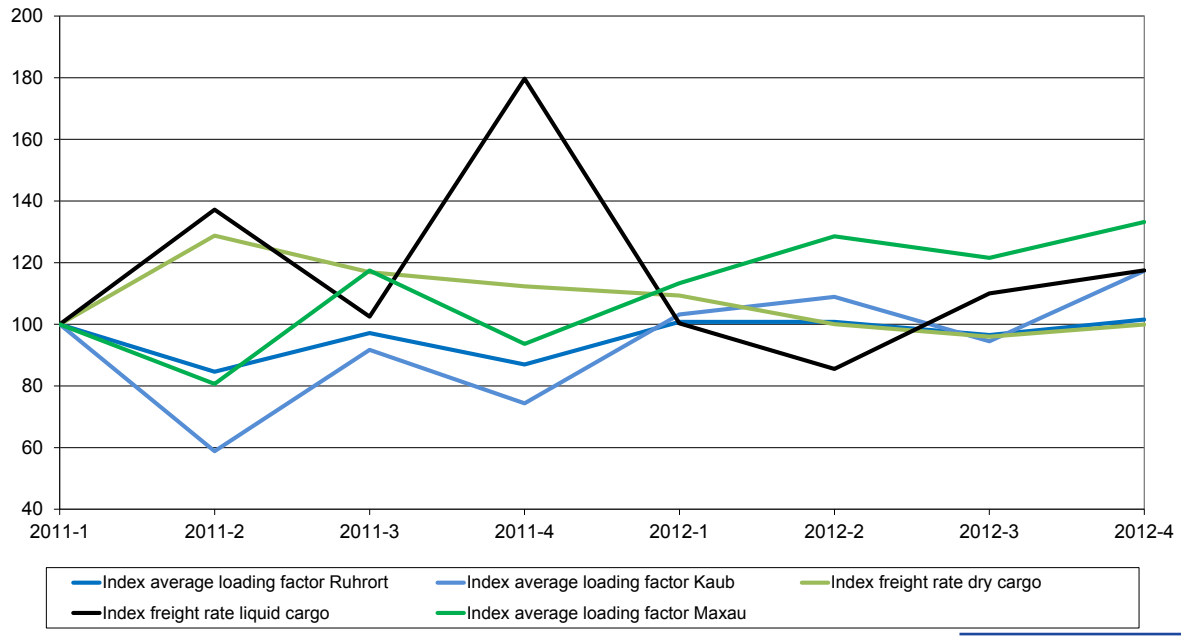
1 The analysis has taken into consideration the keel clearance

Figure 24: Impact of the average water levels on the loading factor of different vessel categories (from 2.5 to 4 metres draught) at Ruhrort



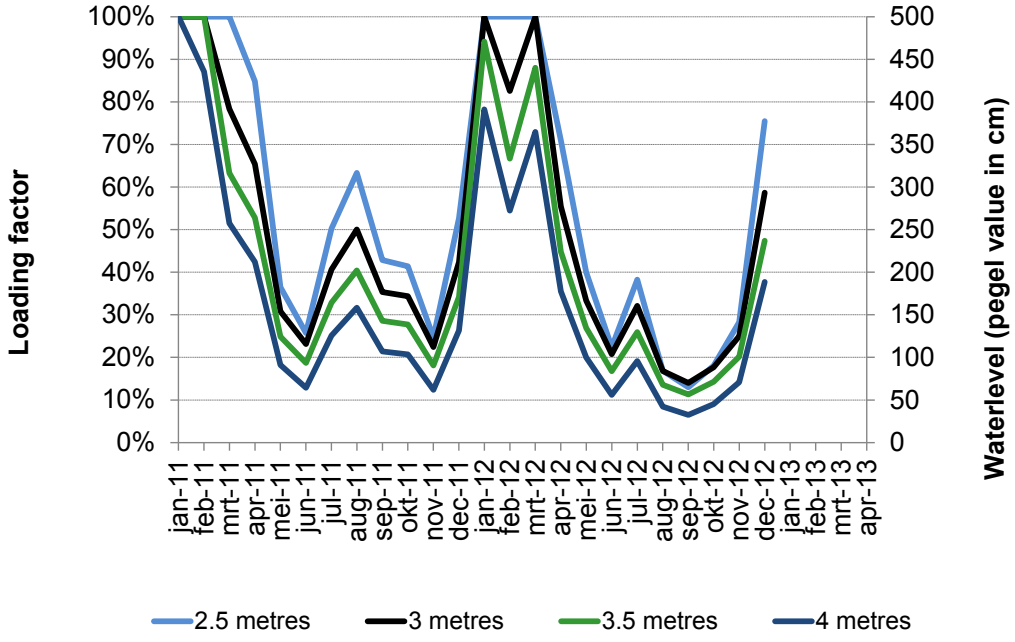
Source: PANTEIA

Figure 25: Impact of the average loading factor at the Rhine on the freight rates of the Rhine (2011-1=100)



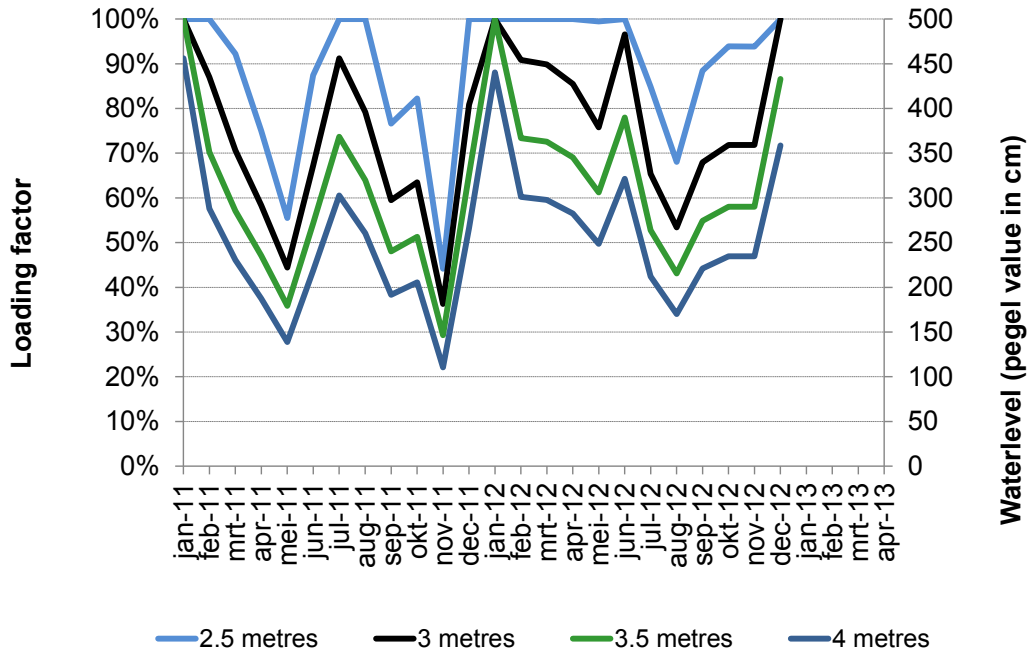
Source: PANTEIA

Figure 26: Impact of the average water levels on the loading factor of different type of vessels for the Elbe (Magdeburg)



Source: PANTEIA

Figure 27: Impact of the average water levels on the loading factor of different type of vessels for the German part of the Danube (Hofkirchen)



Source: PANTEIA

The extreme low water conditions in 2011 had the biggest impact for the Middle Rhine at Kaub, especially in May and November 2011. Even the smaller ship categories (vessel draught of 2.5 metres) reached average loading factors of 34%.

The waterlevels at Ruhrort had less severe impacts on the loading factor of most vessels. The waterlevels at Ruhrort are always higher than at Kaub[1]. This can also be seen on the impact of the loading factor of the different draught of vessels.

The impact of the waterlevels on the average freight rates on the Rhine can also be seen in figure 25. In general, as the waterlevels and the possible loading factor decreases, the freight rates increase due to a temporarily reduction of the transport capacity. The dry cargo sector did not always follow this pattern in 2011 and 2012 (see 2011-4 and 2012-3).

The waterlevels on Hofkirchen (Danube)[2] had in 2011 similar impacts on the loading factors as on the Maxau (upper Rhine). The water conditions improved in 2012 making it possible to sail more efficiently on this stretch.

The Elbe is characterised by long periods of low water, making navigation upstream from Magdeburg uncertain. This can also be seen from figure 26. It shows how the water levels reached on this waterway in 2011 and 2012 has prevented different categories of vessels from making this crossing.

The extreme water levels in 2013 interrupted inland navigation on the Rhine and on other rivers like the Danube for a certain period of time. For the German-French section of the Rhine between Basel and Karlsruhe, this interruption lasted between the 1st of June and the 4th of June 2013, and a few days longer on the middle Rhine.

Table 13: Average yearly loading factor per vessel category per waterway

Waterway	Vessel draught			
	2,5 metres	3 metres	3,5 metres	4 metres
Rhine (Maxau)				
- 2011	88 %	78 %	68 %	56 %
- 2012	100 %	96 %	90 %	81 %
Rhine (Kaub)				
- 2011	81 %	70 %	58 %	49 %

1 Source: ECCONET, Deliverable 2.1.4.

2 Please note that this part of the analysis is based on the waterlevels recorded at Hofkirchen on the Danube. The situation can be different on other parts of the Danube (e.g. in Romania).

Waterway	Vessel draught			
	2,5 metres	3 metres	3,5 metres	4 metres
– 2012	98 %	90 %	79 %	69 %
Rhine (Ruhrort)				
– 2011	99 %	96 %	89 %	79 %
– 2012	100 %	100 %	99 %	95 %
Danube (Hofkirchen)				
– 2011	84 %	70 %	58 %	48 %
– 2012	94 %	81 %	67 %	55 %
Elbe (Magdeburg)				
– 2011	60 %	52 %	45 %	37 %
– 2012	52 %	46 %	39 %	31 %

Source: PANTEIA

Part 7:

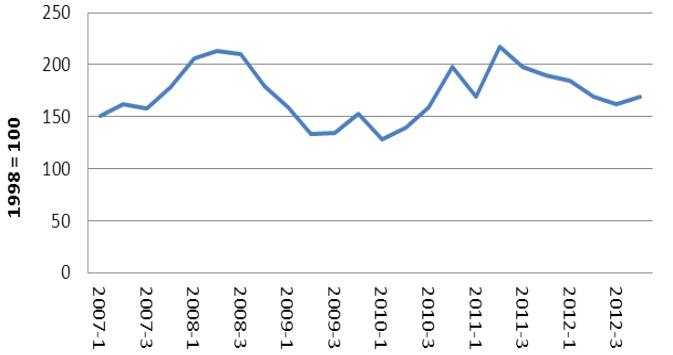
Freight Rates, Costs and Operating conditions in 2012

7.1 Dry Cargo shipping

The water levels in 2012 normalised again, resulting in lower freight rates compared to 2011. This was especially the case in the dry cargo sector.

The main reason for low freight levels in dry cargo shipping is the pronounced excess capacity on the market, in particular for the largest categories of vessels (>2,000 tonnes). This is because hardly any positive impetus came from transport demand, whilst supply is inelastic, i.e. cannot be altered in the short term. Nevertheless, the situation brightened somewhat in the fourth quarter of 2012, during which there was a slight rise in freight rates. However, this rise was so low that it was incapable of causing any decisive improvement in the situation.

Figure 28: Freight Rates Index in the Dry Cargo Shipping Sector on the Rhine



Source: Panteia

A further reason lies in the failure to create a market niche within the dry bulk cargo segment. Where homogeneous goods or homogeneous transport services are offered, the market does not allow any increase in freight rates on quality grounds.
This is a differentiating feature between dry cargo shipping and tanker shipping, in which the price of standardised

transport services may be increased on quality grounds (double-hull tankers, certification according to the EBIS system, etc.).

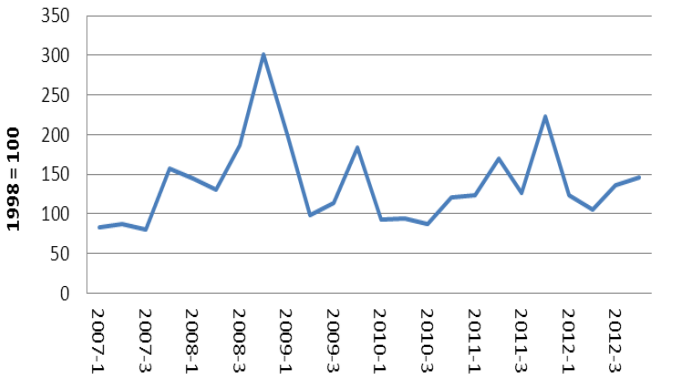
Companies which invested in large new ships shortly before the crisis have been particularly severely affected by the low freight rates. This is because these companies still have to cover significant financing costs. In view of this structurally unbalanced market situation, freight was also carried at rates that did not cover costs in 2012.

7.2 Tanker shipping

Operating conditions in the tanker shipping sector have been influenced by the new construction of double-hull tankers over the previous years. Accordingly, those firms which have made high investments also bear high financing costs.

Nevertheless, tanker shipping freight rates followed a slightly upward trend in 2012. However, the seasonal highpoint in late spring, which is associated with the delivery of heating oil to tank storage facilities, was very weak in this year. This was due to the higher water gauge figures in 2012.

Figure 29: Freight rates index for tanker shipping on the Rhine



Source: PANTEIA

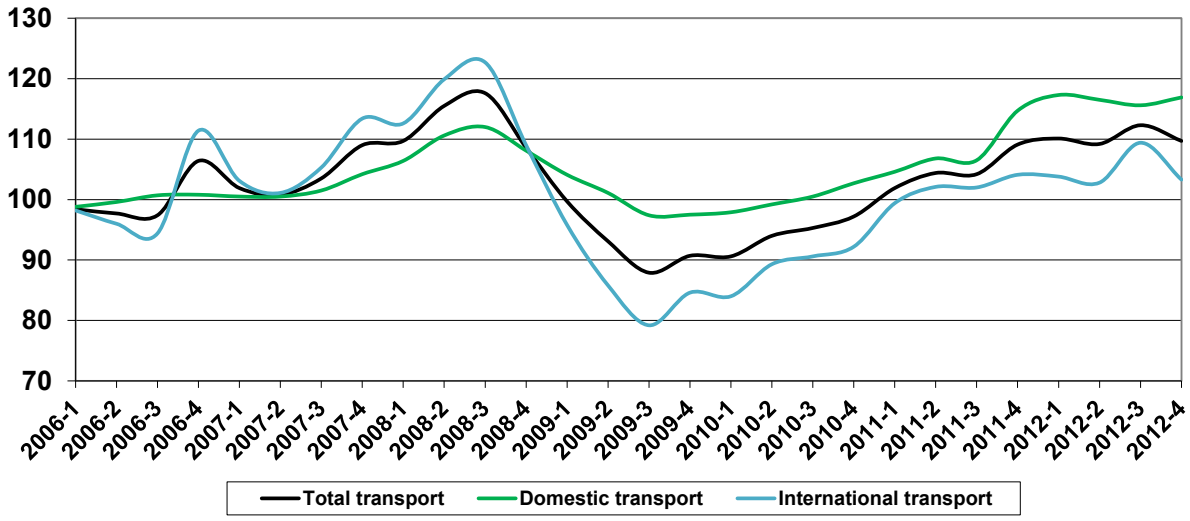
Overall, the slightly rising trend in freight is indicative of the fact that, in contrast to dry bulk cargo shipping, tanker shipping has been more able to establish a market niche. It is precisely the high quality and safety standards which appear to establish this niche.

7.3 Freight rates on the North-South corridor

The freight rates on the North-South corridor have started an increasing pattern since 2010. The following figure shows the development of the domestic, international and total average freight rates for the transport of goods from and to France. In 2009, a sharp decline could be seen due to the financial and economic crisis. Since 2010, the average freight rates in France started increasing gradually.

Nevertheless, the freight rates in the international transport have seen a slower recovery. The freight rates for the total transport increased on average with 5.2% compared to 2011 (average between inland transport in France and international transport between France and other countries). This increase is mainly the result of higher freight rates in the domestic market (+7.8% compared to 2011). The freight rates in the international transport market (between France and Belgium or the Netherlands) increased with 2.9% compared to a year before.

Figure 30 : Freight rate developments in the North-South market in France (2006=100)



Source: French Ministry of Transport / Commissariat general au développement durable, Chiffres & statistiques n° 401 – mars 2013

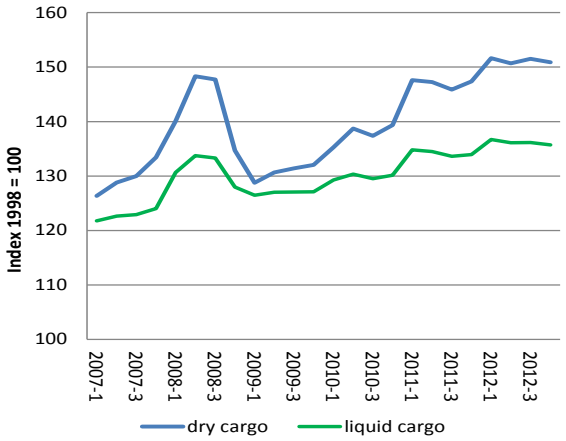
7.4 Cost Development

There have been differences in cost trends between the two main segments. Thus, according to the Panteia index, there have been significantly lower cost increases in the tanker shipping sector than in the dry bulk cargo shipping sector since 1998. This is mainly due to the sharp increase of the fuel costs in the last years, which has had a bigger impact on the overall transport costs in the dry cargo sector compared to the liquid cargo market.

Also, the average capital costs have been decreasing in the last years. This has had a dampening effect in the overall costs for the tanker shipping sector, which is characterised by a high share of capital costs.

The following subsections provide an overview of the development of the different cost components in IWT operations. The figures presented here are based on the cost developments seen in the Netherlands. Experts from different IWT association have indicated that, besides labour and social security cost, the cost developments seen in the Netherlands give a representative impression of the trends seen in other European countries.

Figure 31: Cost development in the tanker shipping sector and in the dry bulk cargo shipping sector



Source: PANTEIA

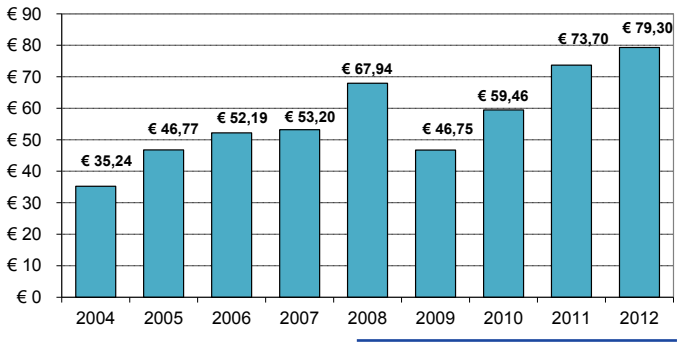
This is especially the case given the international character of the IWT sector and the relative high share of Dutch inland shipping companies. For the labour and social security cost, an additional analysis has been carried out.

7.4.1 Fuel costs

The following figure presents the development of the fuel prices in the IWT sector since 2004 (excluding all taxes and disposal charges). The average fuel costs in 2012 were 7.6% higher than a year before. This increase is less strong than the relative growth of the fuel prices seen in the last three years.

Nevertheless, the average fuel price in 2012 reached the highest average recorded so far.

Figure 32 : Development of the fuel prices per 100 litre in the IWT sector (excluding VAT, excise duty and CDNI disposal charges)



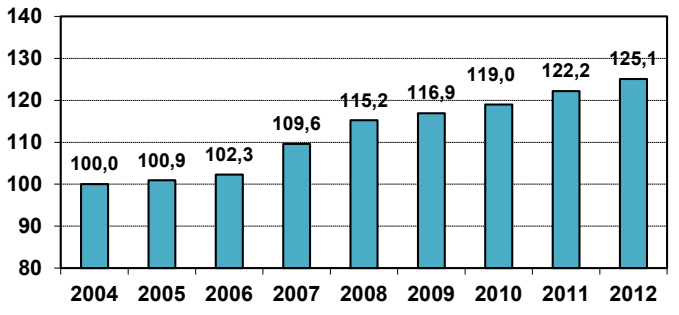
Source: CBRB Gasoliecirculaire

7.4.2 Labour costs

The following figure presents the development of the labour costs in the Dutch dry cargo sector since 2004. The labour cost index in the Dutch liquid cargo sector was 122.8 in 2011 and 125.3 in 2012 (2004=100). The labour costs in the German IWT sector showed a similar increasing trend as in the Netherlands[1]. On 1 January 2012, the labour costs increased with 2,6% compared to a year before and on 1 January 2013 with 2.2 %[2].

As mentioned before, the labour and social security costs is different per country. Figure 57 shows these differences. The total labour costs for the IWT employers (i.e. including social security costs) in Germany is almost as high as in the Netherlands. The highest costs are seen in Belgium. The total labour costs in Luxembourg are the lowest compared to the other countries, which is mainly a consequence of the low level of social security contributions in that country. Many inland navigation companies have been shifting their offices to foreign countries such as Luxembourg and have benefitted from lower social security costs.

Figure 33: Development of the labour costs in the Dutch IWT dry cargo sector (2004=100)



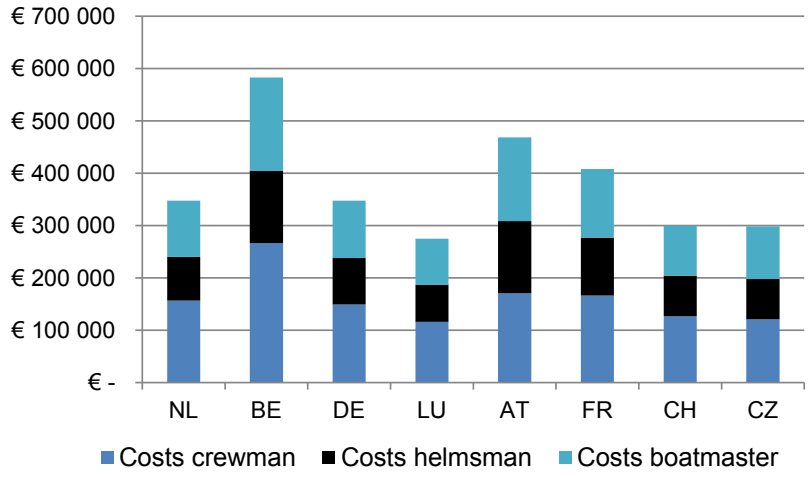
Source: PANTEIA

1 Source: BAG – Market Observation of Freight Transport, Autumn 2012 Report.

2 Source: BAG – Market Observation of Freight Transport, 2012 Annual Report.

7.4.3 Capital costs

Figure 34: Total labour costs (including social security costs) in different countries for a >86 metres vessel with semi-continuous sailing operations∗



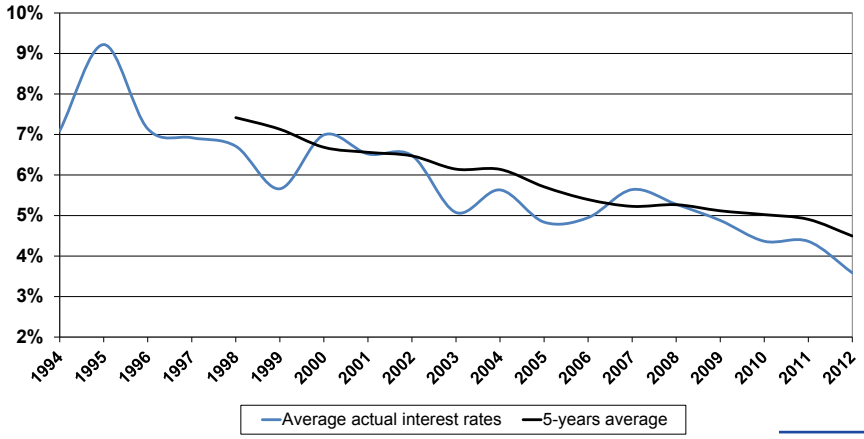
Source: PANTEIA

∗ *The total labour and social security costs presented here have been calculated for a vessel of 86 metres or longer an using an A2 operation mode. These numbers are based on the most recent data on labour and social security costs in the IWT sector for beginning of 2013.*

The development of the capital costs depends on the evolution of the depreciation and on the interest costs of loans and equity[1]. Besides, also risk premiums play a role. They are calculated by the banks on the basis of an individual risk assessment, and can increase the level of the interest rate significantly. So the financial costs of the companies are not determined by the falling interest rate level alone.

The depreciation remained, on average, stable in 2012 (index= 100.0). On the other hand, the average 5-years interest level decreased again in 2012 (see following figure). This resulted in lower capital costs (-7.2%) compared to 2011.

Figure 35: Development of the capital costs in the Dutch IWT dry and liquid cargo sector



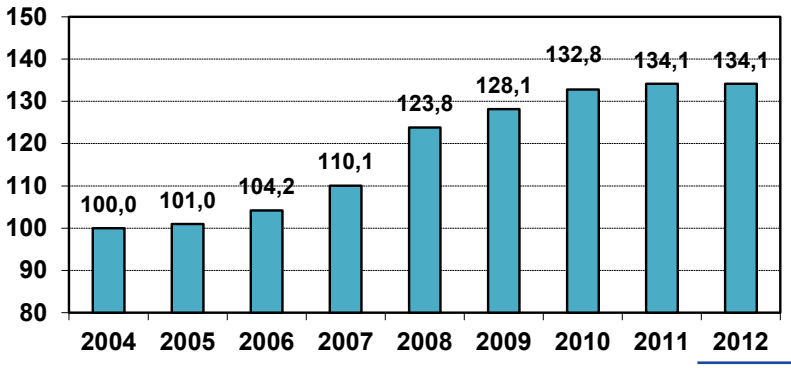
Source: PANTEIA

1 To estimate the capital costs, PANTEIA uses the insured value of the vessels as a starting point. The interest costs are calculated based on an average of the interest levels over the last 5 years. This has to do with the average fixed interest period on ship mortgages. The 5-years average interest level can therefore differ from the current actual interest rates.

7.4.4 Insurance costs

The development of the insurance costs in the Dutch IWT sector can the observed in the following figure. The insurance costs remained stable in 2012.

Figure 36: Development of the insurance costs in the Dutch IWT dry and liquid cargo sector (2004=100)

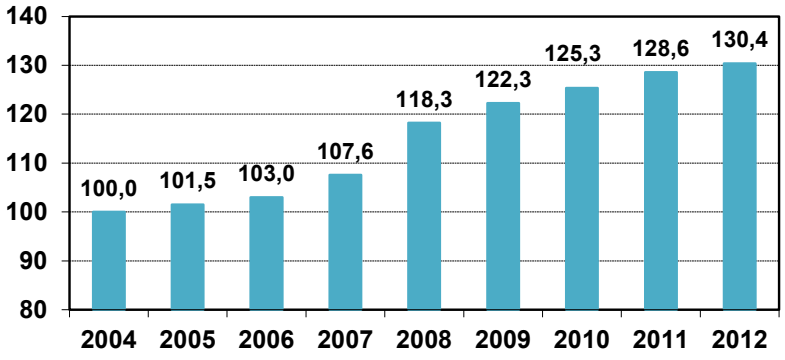


Source: PANTEIA

7.4.5 Maintenance and repair costs

The following figure presents the development of the maintenance and repair costs in the Dutch dry cargo sector since 2004. The cost index for the liquid cargo sector was 127.6 in 2011 and 131.2 in 2012 (2004=100).

Figure 37: Development of the maintenance costs in the Dutch IWT dry cargo sector (2004=100)

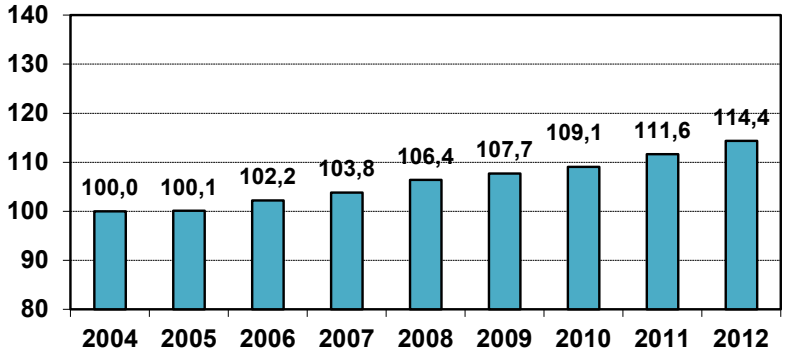


Source: PANTEIA

7.4.6 Other costs

The development of the others costs in the Dutch IWT sector can the observed from the following figure. These costs increased with 2.5% in 2012 compared to 2011.

Figure 38: Development of other costs in the Dutch IWT dry and liquid cargo sector (2004=100)



Source: PANTEIA

7.5 Financial situation in the IWT sector

Introduction

The overcapacity problem is especially evident on the Rhine market (i.e. the Netherlands, Belgium and the Germany). In Belgium, inland shippers recently organized strikes in order to demonstrate against their financial crisis situation.The Netherlands declared an economic crisis for the IWT sector by the end of 2009. Especially for the Netherlands there is information available on the financial performance of inland shipping companies.
There is currently a lack of recent statistical information on the financial situation of operators in other countries. BAG[1] recently published some information on the financial situation of IWT operators in Germany, which goes in line with the situation encountered in the Netherlands. Therefore this section will focus on the IWT financial situation in the Netherlands and Germany.

Although the Rhine market represents almost 70% of the transport performance of IWT in Europe, it must be noted that the financial situation of IWT operators in other European countries could be different. Especially in the Netherlands a significant number of new large vessels have been added to the market (for operation on the Rhine corridor), which has not been the case in other countries.

For example, the domestic market in France operated by smaller vessels is expected to have different impacts

1 BAG – Market Observation, 2012 Annual Report.

compared to the more international market of the Rhine. This can also be seen from the development of the freight rates presented in figure 30 of section 7.3.

Also on the Danube, the Elbe and the Oder the situation could be different than on the Rhine. There are more large shipping companies active that can regulate their capacity better by configuring their transports according to the transport demand.

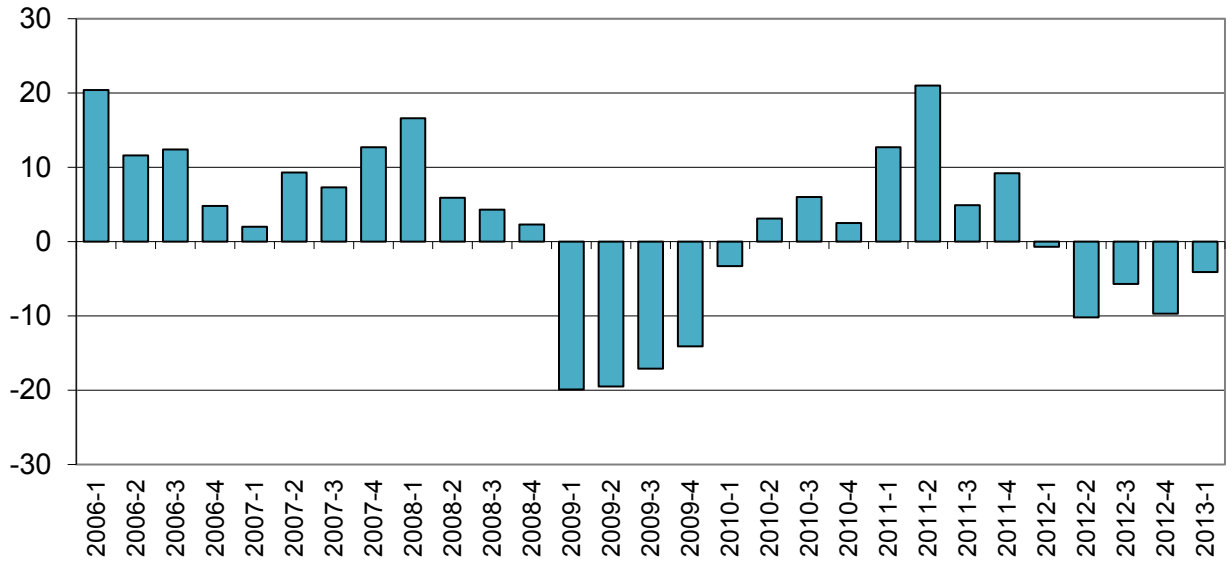
Financial situation in the IWT sector on the Rhine market

After a year of extreme low water conditions, the water levels normalised again in 2012 making the impacts of the overcapacity in the IWT sector more evident.

While the freight volumes in 2012 were comparable to 2011, more vessel capacity was added in a market already characterised by overcapacity. This put even more pressure on the freight rates (cf. section 7.1). The combination of relatively low freight rates and increasing costs (especially fuel costs) resulted in deteriorated financial conditions for many IWT companies.

The current turnover is still below pre-crisis levels. While the turnover for the whole Dutch transport and logistics sector increased with 3.1% in 2012, the turnover in the Dutch IWT sector (i.e. freight and passenger transport) decreased on average with 6.9% compared to 2011[1]. The strong increase of the turnover in 2011 was due to the low water charges paid during that year. With normalised water levels and stabilised transport volumes, the turnover decreased considerably (see following figure).

Figure 39: Year-to-year development (in %) of the turnover in the Dutch IWT sector (freight and passenger sector)



Source: CBS

1 Source: CBS

The turnover of Dutch companies in the dry cargo sector fell faster (around -10%) than that of companies in the tanker shipping (about -5%)[1]. Although the tanker shipping sector is also affected by overcapacity due to large investments in double-hulled tankers, this sector is characterised by a higher added value. The tanker sector sails relatively more with permanent contracts (especially the transport of chemicals); the companies are on average larger and are better organised; due to strict safety requirements additional costs need to be paid and the mooring fees are paid earlier and are substantially higher compared to the dry cargo sector[2].

The overcapacity in the dry cargo market is more difficult to solve, especially given the fragmented character of this sector.

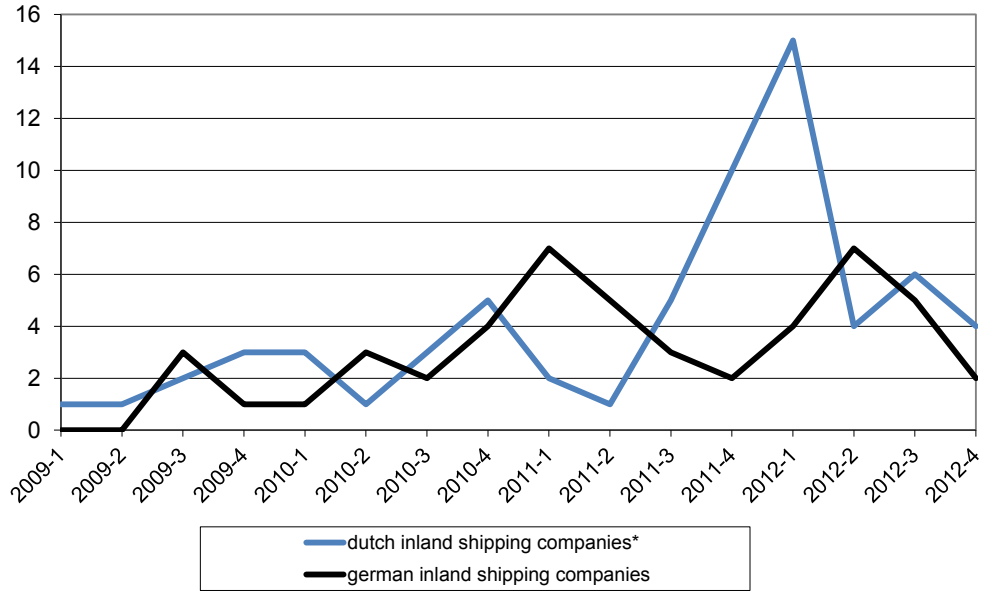
Due to the decrease of the turnover and the increase of the labour costs, the labour productivity also declined in 2012g[3].

All these developments resulted in an increase of the number of insolvencies in 2012 (see following figure). A total of 36 cases of bankruptcies have been observed in the IWT sector in The Netherlands for the year 2012[4]. The number of bankruptcies in the Netherlands was 4 in the year 2008, 11 in the year 2009, 12 in year 2010 and 7 in the year 2011. In Germany a total of around 16 IWT companies went insolvent[5].

The number of bankruptcies in 2010-2012 has been surprisingly modest given the economic situation and compared to the total number of enterprises. In Germany around 934 enterprises were registered in 2011, of which 596 directly active in the transport of freight[6]. In the Netherlands around 4,235 companies have been reported in 2012, of which 3,435 companies in the IWT freight sector[7]. However, a strong increase was observed in the year 2012 and for 2013 it is expected that the number of bankruptcies will continue rising.

1 Source: ING Economics Department, May 2013
2 Source: ING Economics Department, May 2013
3 Source: ABN AMRO, «Visie op transport en logistiek», Branchenaktualisierung 2013
4 Sources: Database faillissementen.com.
5 Source: BAG
6 Source: DESTATIS
7 Source: CBS

Figure 40: Number of insolvencies in the German and the Dutch IWT sector



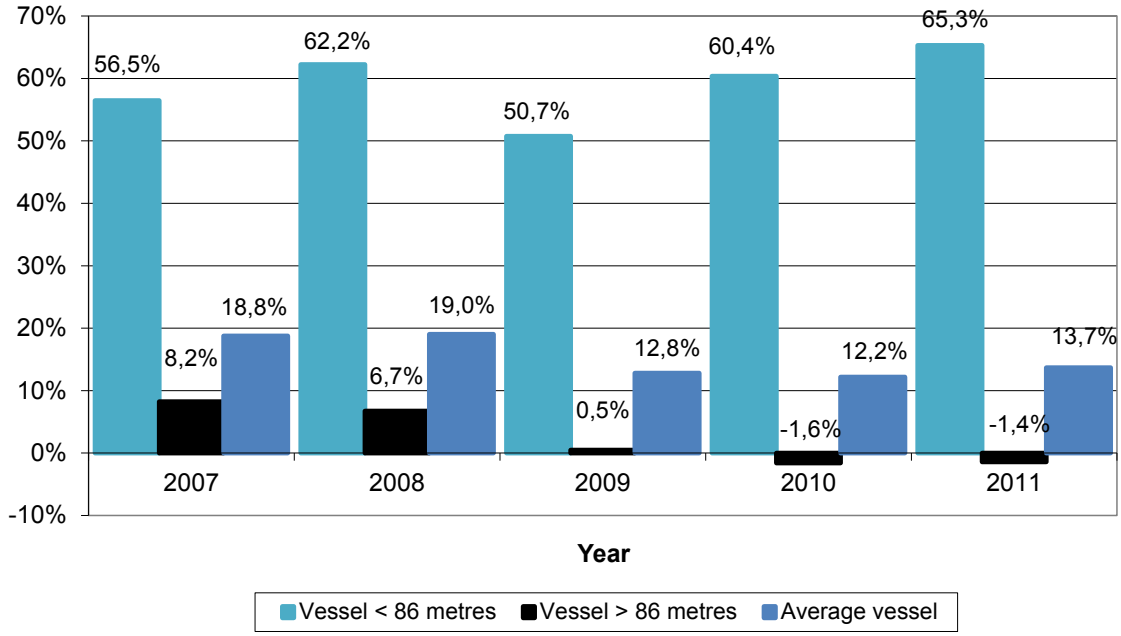
Source: BAG – Market Observation, 2012 Annual Report; based on Central Bureau of Statistics. Centraal Bureau voor de Statistiek.
**Goods and Passenger transport ** Only Goods transport*

The number of bankruptcies is expected to be higher in the dry cargo sector, especially for companies sailing with large vessels. For illustrative reasons, the following figures present the development of financial indicators on business level for a representative number of Dutch enterprises active in inland waterway dry cargo transport for the period 2007-2011. The indications point towards a decline of profits and further a decrease of own capital in 2012 compared to 2011.

It can be concluded that the financial problems are serious in the larger vessel class. Smaller vessel classes are also affected due to increased competition between small and larger vessels in those areas where both small and larger vessels can operate.

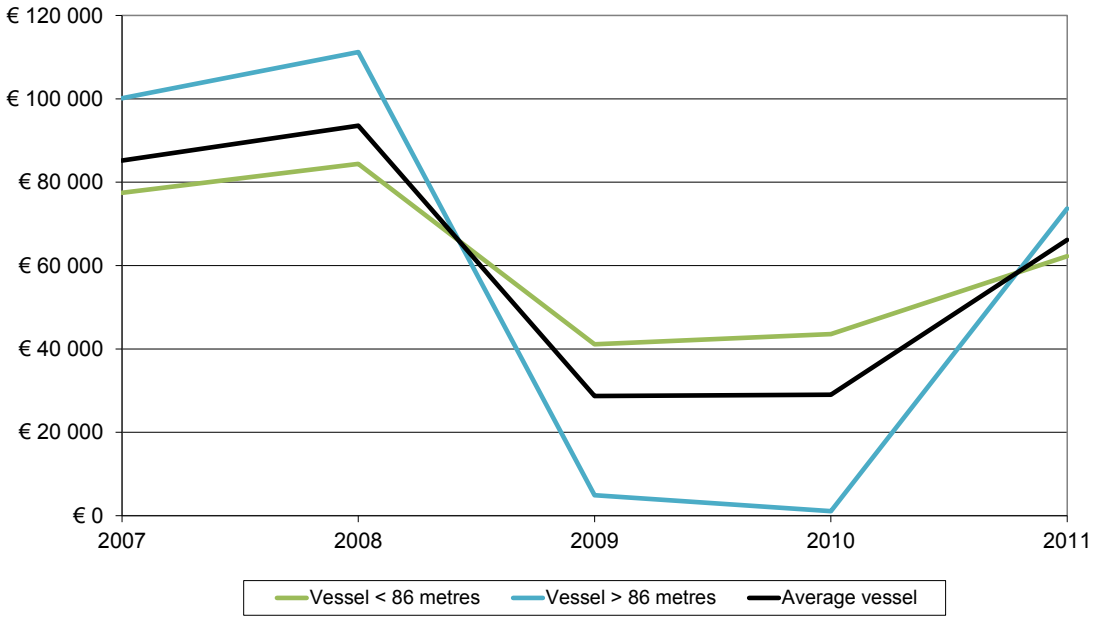
In particular the negative value of the own capital in the company balance makes clear that the financial stability is low. It can be seen that the year 2011 was somewhat more positive for the vessel operators due to incidental factors (extensive low water periods in 2011).

Figure 41: Share of own capital in company balance value



Source: PANTEIA based on accountancy firm

Figure 42: Book profits, excluding appraisal of labour efforts of entrepreneur



Source: PANTEIA based on accountancy firm

The IWT sector is not the only transport industry currently affected by an increase in bankruptcies[1]. Nevertheless, there have not been such substantial expansions of capital investments in other transport modes compared to the IWT sector. Also, inland waterway vessels have a very long lifetime compared to other transport modes. Because of this long life-time as well as the many small individual companies, it is for the inland navigation sector difficult to reduce transport capacity and to anticipate effectively to reduce demand for transport services.

The overcapacity, especially with regard to the bigger vessels, will not disappear without a rather substantial increase of freight volume demand. However, such an increase did not occur between 2010-2012 (see section 1.2) and based on recent forecasts (see section 8) is not expected to occur in the coming four to five years.

As more companies will end up in bankruptcy, the vessels are generally sold at lower rates and return again in a market with overcapacity. This is expected to continue to put pressure on the development of the freight rates. Assuming normal water levels and weak growth developments in 2013, it will be difficult to reach the desired turnover levels to improve the financial situation of many IWT companies. In the Netherlands, the turnover is expected to decline with 2% in the year 2013 compared to 2012[2].

There are concerns that many businesses owning/operating inland barges will not survive in the short and medium term. Only incidents such as extreme low water situations can bring some temporary relief for the financial position of vessel owner/operators.

As described in section 5, in order to achieve a healthy balance on the market, part of the fleet would have to be decommissioned; this applies both to the dry cargo sector and to the tanker sector.
However, dry cargo shipping is more urgent than tanker shipping. This is because the current overcapacity in the tanker shipping sector is temporary in nature. Moreover, tanker shipping companies have less liquidity problems than dry cargo shippers[3].

This is essentially due to the way in which companies in the tanker shipping sector are structured and organised.

These companies are normally large well-organised shipping companies; by contrast, the dry cargo sector is fragmented, and is comprised of a large number of small companies.

1 See further the publication by ABN-Amro (2013), Sectormonitor Transport en Logistiek, November 2012

2 Source: ING Economics Department, May 2013

3 Quelle: ING Economisch Bureau, Mei 2013

For the chemical sector, freight rates are often determined on the basis of fixed agreements which induce a more calculable income of freight payments. Tanker shipping companies may also apply surcharges to freight rates as compensation for high safety and quality standards.

Demurrage charges in the liquid cargo sector are also higher and are paid over a longer period of time compared to the dry cargo sector.

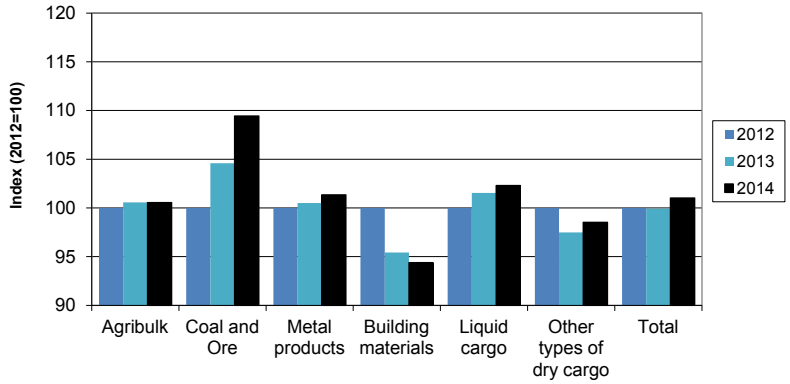
Part 8:

Perspectives for the near future

Recent freight flow forecasts provide figures for The Netherlands and Germany, which are the largest markets for inland waterway transport in Europe.

In the Netherlands, the freight flows are expected to remain more or less the same in 2013 as in 2012 and a small increase is expected in 2014 compared to 2013. The Panteia Korte Termijn Verspeller indicates a small decline of dry cargo freight volumes in 2013 compared to 2012 (-0.7%) and a slight increase in 2014 with a value of +0.7% compared to 2012[1]. Especially the transport of building materials is expected to decline further in 2013. The transport of industrial goods and goods going to Germany are expected to growth slightly[2]. Overall, the transport volumes in the tanker shipping sector are expected to increase for 2013 and 2014, mainly due to the expected growth in the transport of chemical products.

Figure 43: Freight flow forecast for the IWT sector in the Netherlands for the years 2013 and 2014 (2012=100)



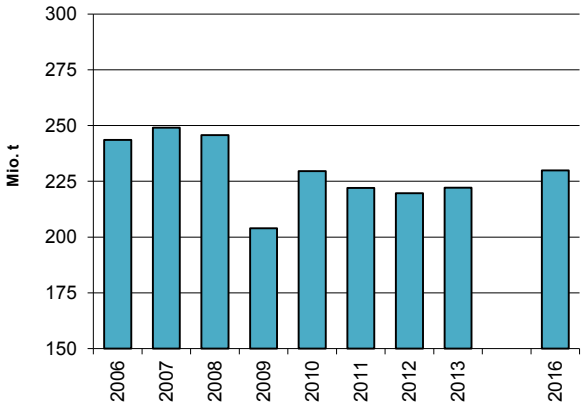
Source: PANTEIA

1 Source: Panteia, Korte Termijn Verkenner, March 2013

2 Source: ABN AMRO, Visie op transport en logistiek, sectorupdate 2013.

The positive developments[1] expected in the transport of chemicals can also be seen in the most recent forecasts for the inland waterway transport sector in Germany. This is presented in the following figure and table. The data shows that the transport volumes by the year 2016 is expected to attain again the same level as compared to 2010. Secondly, a general increase of 1.1% per year is expected between 2012 and 2016[2].

Figure 44: Freight flow development and forecast for the IWT sector in Germany until 2016 (total transport)



Source: ITP, Ralf Ratzenberger, BAG

Table 14: Development and forecast for the IWT sector in Germany until 2016 (per market segment) [3]

Market segments	Development in million tonnes						Development per year (%)		
	2009	2010	2011	2012	2013	2016	12/11	13/12	16/13
Agriculture products, forestry and fishing products	15.4	16.0	14.9	16.2	16.3	16.5	8.3	0.6	0.5
Coal and lignite; crude petroleum and natural gas	27.7	34.3	33.5	34.5	35.5	38.0	2.9	3.0	2.3
Metal ores and other mining and quarrying products	53.1	60.1	59.1	54.9	55.4	57.3	-7.1	1.0	1.1
Food products, textiles, wood and paper products	14.4	15.0	12.1	12.1	12.2	12.5	0.0	0.6	0.7
Coke and refined petroleum products	34.3	35.9	35.8	36.6	36.6	36.6	2.0	0.2	0.0

1 According to a recently released study by the German Chemical Industry Association in conjunction with, the European chemical industry will not be displaced. Whilst individual production facilities may be transferred to China, Europe will nevertheless continue to be a significant chemicals production location, above all for quality high-value and specialist chemicals. Projections indicate an increasingly intensive use of chemicals in automobile construction. German chemicals production will grow by around 2 % per annum until 2030, thus more than industry as a whole. Cf.: VCI/Prognos (2013), Die deutsche chemische Industrie 2030 [The German Chemical Industry in 2030].

2 Source: Gleitende Mittelfristprognose für den Güter- und Personenverkehr Mittelfristprognose Winter 2012/13 [Sliding medium-term forecast for freight and passenger traffic, medium-term forecast winter 2012/13] commissioned by the Federal Ministry of Transport, Building and Urban Development, FE no. 96.0999/2012, Munich / Cologne, February 2013 by ITP, Ralf Ratzenberger, BAG

3 An update of the forecast for Germany is expected in August 2013. Detailed information on the new expected developments is therefore not included in this Marketobservation. The developments for 2013 are expected to be lower than previously thought.

Market segments	Development in million tonnes						Development per year (%)		
	2009	2010	2011	2012	2013	2016	12/11	13/12	16/13
Chemicals and mineral products	22.5	25.9	25.7	25.7	25.9	27.9	0.0	1.1	2.5
Metal and metal products	10.1	11.7	11.9	11.0	11.0	11.2	-7.4	0.4	0.4
Machinery, transport equipment and	1.5	1.7	1.9	2.0	2.0	2.0	6.0	0.2	1.0
Secondary raw materials and wastes	11.6	13.4	11.8	12.0	12.0	12.2	1.4	0.3	0.5
Other goods	13.3	15.6	15.3	14.9	15.1	15.7	-2.3	1.2	1.3
Total	203.9	229.6	222.0	219.7	222.1	229.9	-1.0	1.1	1.1

Source: ITP, Ralf Ratzenberger, BAG

The table presented above shows that the transport of coal is also expected to increase on the short and medium term. Nevertheless, this might not be the case for the long term given the expected increase in the use of alternative fuel and wind energy.

The forecast by ITP, Ralf Ratzenberger, BAG also indicates that the road and rail sector are expected to experience a higher increase in the transport volumes compared to the IWT sector. This is mainly related to the expected development of the main type of goods transported by these transport modes (i.e. consumer goods). Whereas the transport of goods in the steel industry is expected to stagnate.

Fact Sheet 1: River-Sea Shipping in Europe

A. Introduction

River-sea shipping is a special form of short sea shipping. In short sea shipping goods are conveyed over marine sea routes within one and the same continent[1]. The special feature of river-sea shipping is that it involves transport through both marine and internal waterways. The boundaries between internal and marine waterways are defined by each individual country in accordance with particularly internationally defined criteria.

River-sea transport also uses special river-sea ships; in addition, depending upon regional circumstances, sea ships are also used to transport goods along internal waterways close to the sea.

Above all Dutch shipping companies have ordered the construction of new river-sea ships in recent years. Using various new technologies, these new river-sea ships have a smaller draught, and are therefore able to expand their range of action further inland.

In economic terms, river-sea transport has both advantages and disadvantages.

Significant advantages:

- removal of transshipment costs in sea ports (time and cost savings)
- Quality benefits: since the goods are no longer transshipped in seaports, damage can no longer be caused by inappropriate reloading. This is significant above all for high quality goods.

Disadvantages:

- compared to broken transport (inland ship – transshipment in seaport – sea ship) no particularly large ships on the sea route of river-sea transportation. This reduces economies of scale on sea routes.
- River-sea ships can only travel to limited internal areas, since on safety grounds they cannot be smaller than a minimum size (for sea shipping). This results in limited navigability on rivers and canals (due to limited lock dimensions, etc.).

River-sea traffic operates in Europe in the following areas:

1 In contrast to short sea shipping, pure sea shipping covers sea routes between more than one continent. For example, container transport between China and Europe involves pure sea shipping, and no short sea shipping.

Table 15: Areas in Europe with river-sea traffic

Country	River area
UK	Thames, Humber, Forth
Russia	Volga, Neva
Sweden	Göta Älv river, Trollhättan canal, and Södertälje canal
Finland	Saimaa canal and the Finnish lake system
Germany / Netherlands	Lower Rhine
France	Seine (to Paris), Rhone (to Lyon)
Romania	Lower Danube and Black Sea

From a technical viewpoint, certain additional regulations apply to sea ships which travel along inland waterways. These relate in particular to manoeuvrability, and ships which travel on inland waterways must have greater manoeuvrability than ships on the high seas.

For the Rhine, the specific regulations in this respect are land down in the Rhine Vessel Inspection Regulations (Rheinschiffsuntersuchungsordnung, RheinSchUO). These regulations contain specific provisions for sea ships, relating above all to manoeuvrability. The competent national authorities may monitor compliance with these regulations by trial voyages during which stopping, veering, reversing and turning capacity can be examined[1]. Trial voyages may be omitted in full or in part if compliance with the regulations can be demonstrated in another manner.

The provisions governing the crews of river-sea ships are regulated, in relation to the Rhine, by the Regulations for Rhine Navigation Personnel (Verordnung über das Schiffspersonal auf dem Rhein , RheinSchPersV). Generally speaking, the IMO rules on training, the issue of certification and watchkeeping for seafarers may be applied to sea ships on the Rhine[2]. However, this is conditional upon the requirement that the number of crew members exceeds the minimum crew size for mode of operation B (journey of up to 24 hours) in Rhine shipping.

Moreover, a holder of the Major Licence for the segment to be travelled upon or a corresponding boatmaster's certificate recognised as equivalent by the CCNR under this regulation must be onboard. This licence holder must be replaced by another licence holder after a maximum of 14 hours' journey time within a period of 24 hours[3].

The following reports on individual countries should provide numerical clarification of the structure of European river-sea shipping and represent existing development trends.

1 For further details see part 20, and parts 5, 6, 7 and 8 of the CCNR Rhine Vessel Inspection Regulations RheinSchUO).

2 IMO = International Maritime Organization

3 See for further details the CCNR Regulations for Rhine Navigation Personnel (RheinSchPersV), including in particular § 3.20.

B. Western Europe

B.1 The United Kingdom

River-sea shipping is highly significant in the United Kingdom. Contrary to the position in most other European countries where river-sea transport makes up a small fraction of overall inland shipping, the situation is the opposite in the United Kingdom: here river-sea transport more than ten times as high in quantitative terms as pure inland shipping.

River-sea transport in the United Kingdom may be broken down into three categories:

- seagoing coastwise traffic
- seagoing foreign traffic
- seagoing one-port traffic

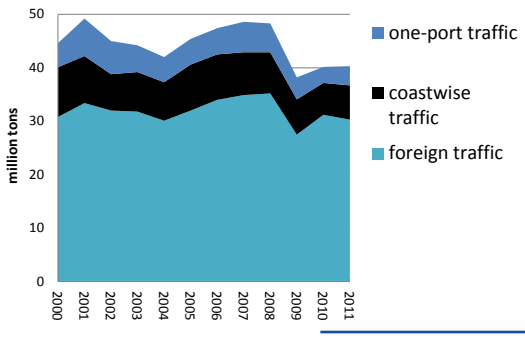
These official statistical designations relate to the different categories of river-sea transport in the British Isles:

- seagoing coastwise traffic = transport between a British seaport and an inland port in the UK
- seagoing foreign traffic = transport between a foreign seaport and an inland port in the UK
- one-port traffic = transport between offshore facilities on the high sea (in particular oil and gas platforms) and inland British ports

Overall, river-sea transport in the United Kingdom in 2011 amounted to around 40 million tonnes. Seagoing foreign traffic played the most important role, with around 30 million tonnes. Slightly more than one third of foreign river-sea traffic relates to liquid goods, essentially mineral oil products (11.1 million tonnes in 2011). Container transport and dry bulk cargo is also significant.

The following diagram shows the development of inland-seagoing traffic in the United Kingdom. This involves exclusively transport over both internal and sea routes. Pure inland shipping, which is relatively low in quantitative terms (transport between two British inland ports as points of departure and arrival) has thus not been included here[1].

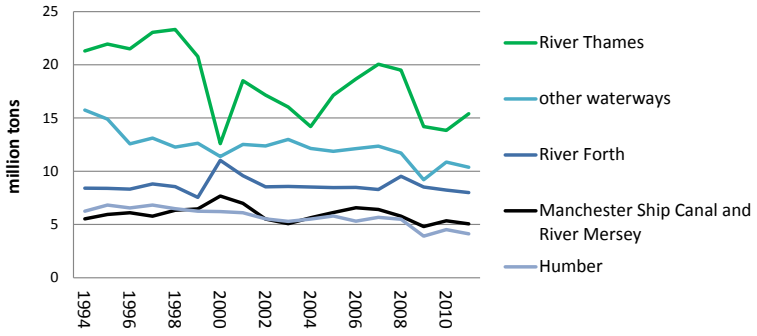
Figure 45: Development of river-sea traffic in the United Kingdom according to segment



Source: UK Department of Transport

1 Pure inland shipping in 2011 amounted to around 3 million tonnes, 2.5 million tonnes of which related to dry bulk cargo (above all construction materials and sand). Most pure inland traffic was carried along the Thames (1.33 million tonnes).

Figure 46: River-sea traffic in the United Kingdom according to individual rivers



Source: UK Department of Transport (2012), Transport Statistics Great Britain

The entire volume of river-sea transport in the United Kingdom in 2011 was around 11 times higher than pure inland shipping. This ratio differs significantly from the situation in other European inland shipping countries. As will be explained at a later stage in this study, river-sea traffic accounts for 5 % of overall national inland traffic in France, and only 0.6 % in Germany.

The Thames is by far the most important river for inland-seagoing traffic in the United Kingdom and – alongside the Volga in Russia - also in Europe. 17.3 million tonnes were transported on it in 2011, most of which (15.5 million tonnes) was comprised of river-sea traffic. 1.85 million tonnes were transported on the Thames as pure inland traffic («non-seagoing freight traffic)[1].

If a multi-year trend is considered, it will however be recognised that river-sea traffic on the Thames at the end of the 1990s was still more than 20 million tonnes per year. The second most important river for inland-seagoing traffic is the Forth in Scotland, which extends like a fjord into the interior of the country near Edinburgh.

The Manchester Ship Canal and the river Mersey also transported significant quantities with more than 5 million tonnes. The same applies for the Humber in eastern England, which reaches far into the interior as a broad estuary. The following table reports the figures contained in the graph for the years 2009 to 2011.

Table 16: River-sea traffic according to individual rivers in the United Kingdom

River	Quantities per year in millions of tonnes		
	2009	2010	2011
Thames	14,2	13,8	15,4
Forth (Scotland)	8,5	8,2	8,0
Manchester Ship Canal / River Mersey	4,8	5,3	5,0
Humber	3,9	4,5	4,1
other rivers *	9,2	10,9	10,4

Source: UK Department of Transport (2012), Transport Statistics Great Britain.
** Medwey, Severn, Clyde, Ouse, Aire and Calder, Trent*

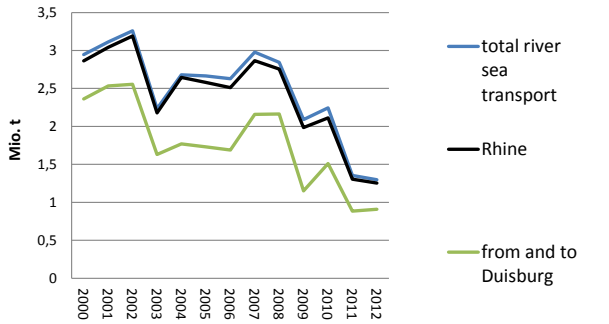
1 Source: UK Department for Transport (2012), Domestic Waterborne Freight – Statistical Release, 6 December 2012.

B.2 Germany

The Rhine accounts for between 95 and 97 % of overall river-sea traffic in Germany. In turn, as a proportion of Rhine traffic, the lion's share relates to transport to and from Duisburg. At present, the share of transport to and from Duisburg out of overall German river-sea traffic is around 70 %.

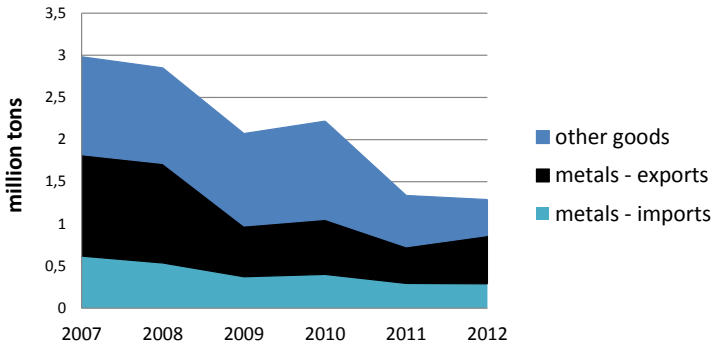
The transport performance of inland-sea transport in 2012 in Germany amounted to 186.5 million ton-kilometres, which corresponds to a share of less than 1 % of the overall inland transport performance in Germany.

Figure 47: River-sea transport in Germany (along with Rhine transport and Duisburg transport)



Source: destatis

Figure 48: River-sea transport in Germany according to class of goods



Source: destatis

Two thirds of the goods transported through German inland-sea traffic are metals and metal products (67 % in 2012). The remaining third of the transport includes minerals, agricultural products, project cargo and packaged chemical products.

Since 2008, a pronounced fall has been ascertained in inland-seagoing traffic on the Rhine and thus also in Germany. There are essentially two reasons for this:

1. Cyclical economic reasons: The cyclical downturn of the steel industry since 2008
2. Structural reasons: Change in logistical practices within the steel industry. Thus, according to companies active in river-sea shipping on the Rhine, before 2008 steel cargoes generally amounted to around 1,700-1,800, a cargo size which may be regarded as ideal for Rhine-sea shipping. In order to achieve economies of scale however, cargo shippers have started to batch cargoes together to around 4,000-5,000 tonnes, with the result that correspondingly larger short sea ships are used in sea ports/sea port traffic. The stretch to the seaport is then dealt with by inland shipping.

For these two reasons, inland-seagoing traffic on the Rhine has fallen in recent years. Moreover, the cost argument (removal of transshipment costs in the seaport) has been unable to prevent this. This is because the costs of the additional transshipment in the seaport are more than countered by the following two factors:

1. sea freight rates are very low at present.
2. cost reductions may be achieved for the sea route by using larger sea ships. The removal of seaport transshipment was more than compensated by this.

As part of this development, the carrying capacity of Rhine-sea ships with a capacity of less than 2,000 tonnes has decreased. Some of these ships were scrapped, whilst others were transferred to other shipping regions (Black Sea, East Africa, West Africa)[1].

Alongside the Rhine as a river-sea shipping waterway, it is also possible to route such transports along the Oder towards the Baltic Sea. This appears to be of interest for example for the paper industry in Schwedt an der Oder, 50 km from the Polish port Szczecin. In 2011, following an interruption of several years, river-sea shipping resumed from Schwedt towards the Baltic Sea with a load of 1,288 tonnes of paper. The port of destination was Immingham (UK) at the mouth of the Humber in eastern England.

This was a trial voyage supported by the Federal Waterway and Shipping Administration, which was successfully completed. Potential transport volumes amount to 165,000 tonnes per year, which could be exported by this paper company to for instance England or Russia over the river-sea route[2].

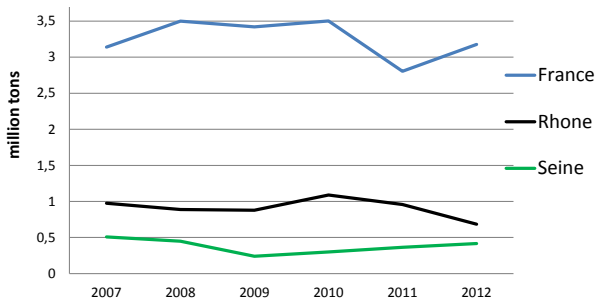
Since paper is a product which can easily be damaged, river-sea shipping appears in principle to be of interest for these goods. Unfortunately, no regular river-sea transport from Schwedt has yet been started. According to the loading company, this is due to the fact that the transports did not turn out to be efficient from an economical point of view.

B.3 France

The transport performance over inland-seagoing traffic in France amounted to around 300,000 ton-kilometres in 2012, of which 147,000 ton-kilometre on the Rhone and 97,000 ton-kilometres on the Seine. Both of these rivers are the most important inland waterways on which sea ships transport goods.

Out of the 3.2 million tonnes which France transported in 2012 by river-sea shipping, 1.63 million tonnes were solid fuels. This means that coal makes up around one half of the freight volume transported by inland-seagoing shipping in France. Second and third places were occupied by sand, soil and construction materials and agricultural products with a little over 400,000 tonnes.

Figure 49: Inland-seagoing transport in France in total and on the Rhone and Seine



Source: VNF

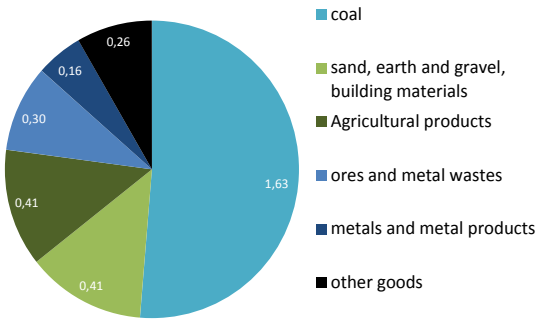
1 Source: Company information

2 See further the press release of the Eberswalde Waterway and Shipping Office of 30.03.2011.

71 % of all agricultural produce which was transported by river-sea traffic in 2012 in France (291,000 tonnes out of 406,000 tonnes) were carried along the Rhone. In 2011 the share of the Rhone was even higher, at around 81 %. Ores and scrap metals were also strongly represented on the Rhone, with 163,600 tonnes in 2012. These quantities represent slightly more than one half of the quantities of ores and scrap metal transported in France by inland-seagoing shipping.

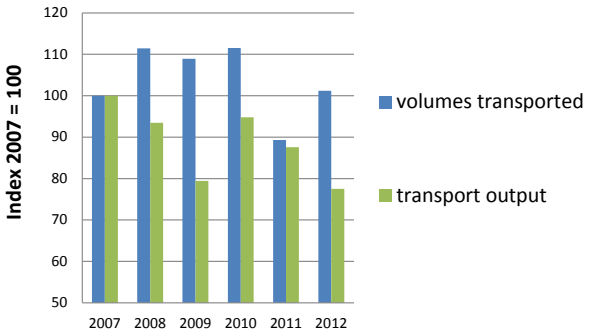
The inland ports of Lyon were visited in 2012 by 105 river-sea ships, compared to 1,300 internal ships[1].

Figure 50: Quantities of freight transported by sea ships on French inland waterways (millions of tonnes)



Source: VNF

Figure 51: Development of volumes transported and transport performance in inland-seagoing transport in France (index)



Source: CCNR Secretariat calculation based on data from VNF

However, it is interesting that, out of all freight types, transport performance is highest for agricultural products. It may be concluded from this that agricultural products must be transported for the longest distances, which is generally typical for this freight class.

The following figure shows that the volume transported increased more between 2007 and 2012 than the transport performance. A possible reason for this could be a change in transport relations (shorter rather than longer distances).

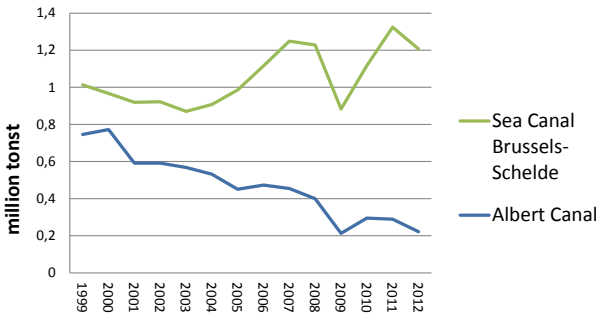
1 Source: Port of Lyon

B.4 Belgium

In Belgium there are above all three inland waterways on which sea ships of a limited size can travel inland. These are:

- the sea canal between the port of Brussels and the Schelde
- the sea canal between the port of Ghent and the Schelde
- the Albert Canal between Lüttich and Antwerp

Figure 52: River-sea transport in Belgium



Source: Promotie Shortsea Shipping Vlaanderen

The sea canal between Brussels and the Schelde has seen an increase since 2003. One reason for this may be that the locks on the canal were enlarged in the 1990s, thus rendering it navigable for the first time for many sea ships. The inland port of Brussels can now be visited by sea ships with a tonnage of up to 4,500 tonnes.

Information on river-sea shipping on the Albert Canal may be obtained inter alia statistics for the port of Lüttich. According to these figures, 78 sea ships travelled to the port of Lüttich in 2012. Around 130,000 tonnes of goods were transshipped from sea ships in Lüttich.

These were mainly specialist steel products exported or imported in trade with Spain, Portugal, the United Kingdom and Ireland. In view of the announced closure of the steel works in Lüttich, the future prospects for river-sea shipping on this canal are not very positive.

C. Northern and Eastern Europe

C.1 Sweden

Sweden has three waterways which enable an unproblematic connection between the North Sea and Baltic Sea and the interior of the country:

- The Göta Älv river, in conjunction with the Trollhättan Canal between Göteborg and Lake Vänern
- The Södertälje Canal in Stockholm
- The Göta Canal in Norrköping

Both of the above waterways may be used by ships of far more than 3,000 tonnes. The locks are in a very good condition. The Göta Canal is mainly used for tourism.

The Göta Älv river is around 70 km long and has six locks. The Göta Älv flows out of Lake Vänern, the largest lake in the EU. The dimension of the locks on the Göta Älv is 89 by 13 metres. The Swedish government is

currently investing in new lock infrastructure. In future there will only be four locks, which will however be 110 metres long and hence larger than the existing locks[1].

In Södertälje, close to Stockholm, there is already a 110 metre long lock, and the Swedish government is planning to invest in renewal with a 140 metre long lock. These locks will then be able to accommodate ships with a tonnage of up to 10,000 tonnes. (At present there is only capacity for ships with capacity of up to 5,000 tonnes.) This will enable seagoing container ships with considerable capacity to reach inland.

At the same time, a new container terminal is to be constructed south of Stockholm. All of these plans clearly show that there is a strong interest in Sweden in promoting transport on inland waterways. In particular, the container terminal at Södertälje close to Stockholm will serve to bring large sea ships as close as possible to a large number of high-spending consumers in the greater Stockholm area. At any rate, the geography appears to provide an ideal starting point for this:

- a well-developed relatively short inland waterway leads from the Baltic Sea close by a metropolitan region in which a large number of consumers with high spending power live.
- Goods conveyed in containers may in turn be distributed to internal areas efficiently by river-sea ships through Lake Mälaren around Stockholm.

Overall, at present around 8 million tonnes are transported each year over Swedish canals and rivers by around 6,700 river-sea ships.

Table 17: River-sea shipping in Sweden

Canal	Number of ships per year	Quantity of goods per year	Number of locks
Södertälje	4.000	Around 5 million tonnes	1
Trollhättan	2.700	Around 3 million tonnes	6

Source: Bertil Arvidsson Consulting AB (2008)

Considerable growth potential may be expected in future. This applies not only for river-sea shipping but also for inland shipping in a narrow sense. Sweden will accordingly implement EU Directive no. 2006/87 (Technical requirements for inland waterway vessels) in September 2014. This means that inland ships will be subject to the technical requirements for inland waterway vessels, and no longer the marine requirements, as is currently the case.

This should provide shipping in Sweden with a positive impulse, as the current applicable requirements from the marine sector often result in a frequently uneconomical form of operation in the inland shipping sector.

1 Source: Bertil Arvidsson Consulting AB

The Port of Göteborg may introduce a container shuttle system to Kristinehamn (on the northern end of Lake Vänern). This shuttle line should largely replace current inland lorry transport from the port[1].

C.2 Russia

Russia disposes of very good natural conditions for river-sea shipping: due to the enormous size of the country, rivers are very wide and are thus navigable by sea ships until far into the interior. The Volga is a very good example of this. The Neva River in the vicinity of the seaport of St. Petersburg should also be mentioned. The Neva is navigable by river-sea ships with a capacity of more than 4,000 tonnes[2]. A special feature is that to date Russian rivers may only be navigated by Russian crews[3].

According to figures from the European River-Sea-Transport Union e.V. (ERSTU), just under 10 million tonnes were conveyed by river-sea transport in Russia during the first five months of 2013. This represents an increase of 15 % compared to the previous year[4].

There are around 4 or 5 shipping companies which account for almost all river-sea traffic in Russia. In addition to the Volga Shipping Company, the oldest Russian shipping company, this also includes the North-Western Shipping Company based in St. Petersburg.

The North-Western Shipping Company transports around 6 million tonnes per year and disposes of more than 100 ships, 85 of which are river-sea ships. The latter have a carrying capacity of between 1,500 and 1,700 tonnes. The goods transported in 2011 included above all cereals (1.5 million tonnes), fertiliser (1 million tonnes), steel (1 million tonnes) and wood (0.5 million tonnes)[5].

Company management considers that the sector of operation of the company provides a good opportunity to provide a better cushion against economic crises. Thus, according to information received from the company, internal traffic in Russia is currently stabler than sea traffic and, in contrast with the latter, has already returned to pre-crisis levels.

Significant investments have been made in new river-sea ships, most of which are being built in Russian shipyards and - since the capacity of Russian is limited - also in China. Both river-sea tanker ships and river-sea bulk cargo ships are being built.

Russia is currently considering whether to open up inland waterways to foreign flags. However, from a competitive

1 Finland is another Scandinavian country with river-sea shipping. Finland hosts the 40 km long Saimaa Canal which is navigable by river-sea ships from the Baltic Sea and can be reached through the hundreds of Finnish internal lakes. This canal ends where it reaches the Baltic Sea, in Russian territory. This has caused some uncertainty regarding future maintenance work. Freight traffic along the canal amounted to 1.7 million tonnes in 2010.

2 Source: Milewski, D. (2012), Inland water transport in the Baltic Sea Region (BSR), p. 30.

3 See Hautau, H. / Pawellek, G. / Schönknecht, A. (2006), Binnenschifffahrt im Ostseeraum: Ungenutzte Potenziale [Inland Shipping in the Baltic Sea Area: untapped potential], p. 549.

4 Source: European River-Sea-Transport Union e.V. (2013), ERSTU – Newsletter Nr. 11 - August / 2013

5 Source: Unternehmensinformationen [http://www.nwsc.spb.ru/en/]

perspective the North-Western Shipping Company is unworried by this possibility, as it is convinced that its own river-sea ships are more seaworthy than western European ships. The specifics of the Russian internal shipping market must thus be borne in mind by western European companies[1].

D. Summary

River-sea transport is of major significance in Europe, and in particular in those countries which have good or very good conditions for such transport along with a well-developed waterway infrastructure. These include the United Kingdom, although also Russia and Sweden. In central and western Europe on the other hand, i.e. in the classic internal shipping countries of Germany, the Netherlands, Belgium and France, this form of transportation has a very low share of the overall volume of transportation over inland waterways.

It can be estimated that at present around 90 to 100 million tonnes of goods are transported by river-sea shipping in Europe[2].

Table 18: Annual goods transport over river-sea shipping in Europe (situation in 2012)

Country	Quantity transported per year
UK	40 mil tonnes
Russia	** 20 mil tonnes
Sweden	8 mil tonnes
France	3.5 mil tonnes
Finland	1.7 mil tonnes
Belgium	1.5 mil tonnes
Germany	1.3 mil tonnes
TOTAL	* 90 - 100 mil t. per year

Source CCNR Secretariat
*** estimate based on ERSTU.*
** For the Netherlands, where there is river-sea transport, there are no available official data, so that an estimation was made which is included in the 90-100 million tons.*

The prospects for development are therefore highly dependent upon the region concerned. For Sweden, river-sea shipping plays an important role in that sea shipping has traditionally been very significant in this country, and river-sea shipping is increasingly being regarded as a related and ecologically beneficial continuation of transport connections based on shipping.

1 Source: Press release of the North-Western Shipping Company of 22 May 2012 entitled "Fleet Renewal as the first priority": (http://www.nwsc.spb.ru/en/press-centre/press-about-company/2012/1483)

2 Due to a lack of official figures, a very rough estimate has been made for the Netherlands.

In central Europe, a positive development in the trend may be determined for parts of Belgium and France. This applies in Belgium for the Brussels-Schelde sea canal and in France for the Seine.

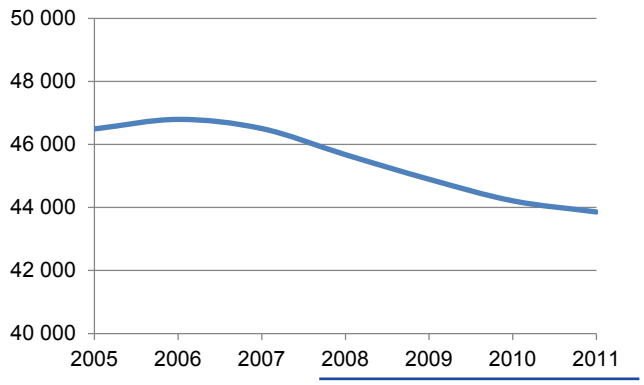
The trends in the central and western European countries may be identified from the fact that, alongside demand factors (development in individual industrial sectors) river-sea shipping also plays an important role on the supply side (above all the waterway infrastructure). A waterway infrastructure adjusted for larger sized ships is undoubtedly a basic prerequisite for a successful implementation of river-sea shipping, as is demonstrated by the example of the Brussels-Schelde canal.

Fact Sheet 2: Labour market

The total IWT labour force in Europe is estimated to be almost 43,860 persons. The following figure presents the development of the total IWT employment in Europe from the year 2005 to 2011. These employment figures include the owner-operators, part-time and temporary employment in the IWT freight and passenger transport (excluding land-based personnel).

The figure shows a decrease in the total IWT labour market since 2008. This decline has mainly been the result of the financial crisis, where operators have less cargo to transport and have a decreased demand for nautical personnel. Lower transport demand has also triggered IWT companies to switch the operational mode to a mode with less operating hours: e.g. switching from continuous exploitation to semi-continuous mode or from semi-continuous mode to daytime navigation. This has also resulted in a lower demand for operational workers.

Figure 53: Development of the IWT labour market (freight and passenger sector) in Europe



Source: Statistical pocketbooks, EUROSTAT; Belgium (RSVZ, ITB, RSZ); Germany (DESTATIS); Poland (Central Statistical Office Poland); University of Vienna (for Luxembourg); Survey carried out in 2013 under Ministries, Trade unions and Employer organizations (Austria; Luxembourg and Bulgaria**)*

The IWT employment in Europe is shown in table 19 per country from the year 2005 to 2011. The majority of the people working in the IWT sector are active on the Rhine corridor. The countries with the highest IWT labour force are the Netherlands, Germany, France, Luxembourg, Italy[1], Belgium, Romania and Bulgaria. Together, they represent around 80% of the total IWT labour force in Europe.

Table 19 also shows that there are some differences in the development of the IWT employment per country. For example, the IWT employment in the Netherlands has seen an increase compared to the decreasing trend experienced in Germany. A decline can also be seen in the registered IWT employment in most of the Eastern European countries. This could partly be the result of the migration of Eastern European workers to Western Europe, as the share of foreign workers from within the EU has seen an increasing trend in Germany and the Netherlands.

* Source: University of Vienna (2010), Representativeness of the European social partner organisations: Inland water transport

** Source: Ecorys, PANTEIA (2013), Study on the expected impacts of the implementation of the European Agreement on working time in inland water transport – A comparison with the status quo.

1 The IWT labour force in Italy is mainly concentrated on the passenger IWT sector. The inland waterways in Italy are not interconnected with other European inland waterways.

Table 19 : Estimated development of the IWT labour market in Europe (freight and passenger sector; excluding land-based personnel)

(x1000 persons)	2005	2006	2007	2008	2009	2010	2011
Netherlands	12,5	13,2	13,5	13,1	13,7	13,6	13,9
Germany*	6,5	6,2	6,1	6,0	5,9	5,7	5,6
France	3,5	3,6	3,8	3,7	3,0	3,7	3,7
Luxembourg	2,6	2,6	2,7	2,7	2,7	2,8	2,8
Italy	2,9	2,9	3,0	3,1	3,1	2,5	2,6
Belgium	2,4	2,4	2,5	2,5	2,4	2,4	2,4
Romania	3,1	2,9	2,8	2,3	2,5	2,4	2,3
Bulgaria	1,9	1,9	1,9	1,8	1,8	1,7	1,7
Switzerland**	1,5	1,5	1,5	1,5	1.5	1,6	1,6
Sweden	1,1	1,1	1,4	1,1	1,1	1,2	1,1
United Kingdom	1,2	1,6	1,4	1,8	1,5	1,5	1,1
Hungary	1,2	1,2	1,2	0,9	0,9	0,9	0,9
Portugal	1,5	1,3	0,1	0,1	0,8	0,9	0,9
Czech Republic	0,9	0,3	0,8	0,7	0,6	0,6	0.8
Poland	1,2	1,3	1,4	1,6	0,8	0,7	0,6
Slovakia	0,7	0,8	0,7	0,6	0,5	0,5	0,4
Spain	0,2	0,3	0,3	0,5	0.4	0,4	0,4
Finland ***	0,2	0,2	0,2	0,2	0,3	0,3	0,3
Austria	*0,2*	*0,2*	*0,2*	*0,2*	*0,2*	*0,2*	*0,2*
Lithuania	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Denmark	0,1	0,1	0,1	0,1	0,1	*0,1*	*0,1*
Croatia**	*0,8*	*0,8*	*0,8*	0,8	0,7	0,1	0,1
Latvia	0,0	0,0	0,0	0,0	0,0	0.1	0,1
Estonia	0,1	0,1	0,1	0,1	0,1	*0,1*	*0,1*
Slovenia	0,0	0,0	0,0	0,1	0,1	*0,1*	*0,1*
Norway**	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Ireland	0,1	0,1	0,0	0,0	0,0	0,0	0,0
Greece	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Cyprus	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Malta	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Total Europe	46,5	46,8	46,5	45,7	44,9	44,2	43,9
Numbers in '*italic*' are based on estimations.							

Source: Statistical pocketbooks, EUROSTAT; Belgium (RSVZ, ITB, RSZ); Germany (DESTATIS); Poland (Central Statistical Office Poland); University of Vienna (for Luxembourg); Survey carried out in 2013 under Ministries, Trade unions and Employer organizations (Austria; Luxembourg and Bulgaria).

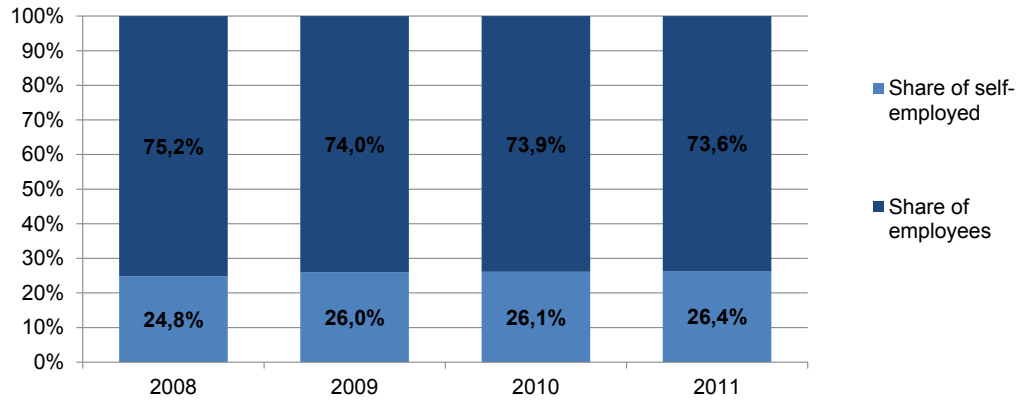
** There is no data available on the total number of IWT workers for Switzerland, Norway and Croatia between 2005 and 2007. Therefore, the total IWT employment for these countries is assumed to remain stable from 2005 to 2008.*

*** There is no data available on the total number of IWT workers for Switzerland, Norway and Croatia between 2005 and 2007. Therefore, the total IWT employment for these countries is assumed to remain stable from 2005 to 2008.*

**** The EUROSTAT statistics indicate a total of around 300 people employed in the IWT sector. Based on information from EUROFOUND, these statistics seem to be related to people with a permanent contracts. EUROFOUND indicates that during the summer period, about 3,000 temporary workers holding employment contracts of between two and five months also work in the sector, which is seasonal and enterprise-led.*

The total IWT employment presented in figure 53 and table 19 does not include the possible 'hidden reserve' in personnel of people with the necessary sailing licenses, but not active on a regular basis. For example, family members with a boatmaster certificate that could be called in to assist during temporary busy periods or to operate the vessel during holiday periods. This can be seen, when comparing the number of boatmaster certificates with the IWT labour force per country. For example, a total of 5,922 boatmasters certificates have been reported in France in 2012 (excluding certificates for other operational personnel[1]). This number is much higher than the total IWT labour force reported in France by EUROSTAT/national statistics, which is around 3,700 persons.

Figure 54: Share of self-employed and employees in the IWT labour market in Europe

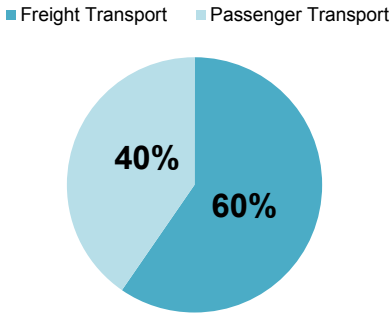


Source: Calculations by PANTEIA based on: the Statistical pocketbooks, EUROSTAT; Belgium (RSVZ, ITB, RSZ); Germany (DESTATIS); Poland (Central Statistical Office Poland).

The share of self-employed and employees in the IWT labour market in Europe is shown in figure 54. The number of self-employed has increased slightly since 2008. A large number of new vessels have been built since 2008. Given the financial situation after the economic crisis, many vessel owner/operators themselves have become more active in the actual navigation of the vessel in order to reduce labour costs for hired nautical staff to cope with the reduced revenues.

About 40% of the total employment in the IWT sector in Europe is linked with passenger navigation. In Germany, this share reaches almost 51% of the shipboard personnel (excluding shore-based personnel)[2].

Figure 55: Share of total employment in the freight and passenger IWT sector in Europe for 2011



Source: Calculations by PANTEIA based on: the Statistical pocketbooks, EUROSTAT; Belgium (RSVZ, ITB, RSZ); Germany (DESTATIS); Poland (Central Statistical Office Poland).

1 Source: Survey with the Ministry of Ecology, Sustainable Development and Energy of France.

2 Source: DESTATIS.

In 2010, there were almost 9,715 companies active in the European IWT market[1] (see table 20). Almost 44 % of these companies are registered in the Netherlands. The majority of the Dutch enterprises are small companies with only a few employees. In many cases, the vessels are owned and operated by a family (e.g. husband and wife owning/operating the vessel). Belgium, France and Germany show similar business types.

Table 20: Number of enterprises per country in the IWT sector (freight and passenger) in 2010

Country	Number of enterprises	Country	Number of enterprises
Netherlands*	4.255	Portugal	41
France	1.023	Slovenia	33
Germany**	970	Bulgaria	32
Italy	926	Denmark	18
Poland	535	Lithuania	15
Sweden	487	Norway	15
Belgium	304	Croatia	13
United Kingdom	246	Latvia	12
Romania	166	*Slovakia*	8
Luxembourg	132	Estonia	1
Hungary	108	Cyprus	0
Czech Republic	95	Greece	0
Austria	82	Ireland	0
Finland	76	Malta***	0
Spain	63	Total	9.715
Switzerland	59		

Source: PANTEIA based on EUROSTAT; CBS; DESTATIS (Germany) and University of Vienna (for Luxembourg)

Numbers in 'italic' are based on estimations.

* *The number of companies in the Netherlands fell to 4,225 in 2011 (source:CBS).*

** *The number of companies in Germany fell to 934 in 2011 (source: DESTATIS).*

*** *Based on a survey carried out in 2013 under Ministries, Trade unions and Employer organizations, Malta reported no IWT employment or related activity (source: Ecorys, Panteia, 2013). Nevertheless, PANTEIA carried out a random test using AIS data and found that from the 50 passenger vessels sailing on the main European inland waterways, 32% were registered under a Maltese flag. No freight vessels sailing under a Maltese flag were found.*

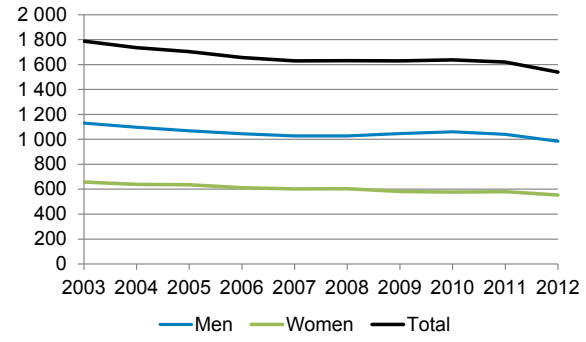
The following sections present more specific IWT labour market details for some countries.

1 Source: EUROSTAT, CBS and DESTATIS.

Belgium

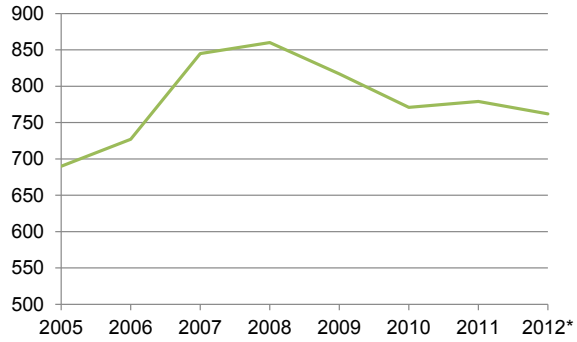
The development of the number of self-employed in the IWT sector in Belgium is presented in figure 56[1]. The total number of self-employed in the Belgian IWT sector has shown a declining trend until the year 2007. Between 2007 and 2011, the total number of self-employed remained rather stable. In 2011, a total of 1,620 self-employed were active in the IWT sector in Belgium. Nevertheless, this total declined sharply in 2012 to 1,539 self-employed.

Figure 56 : Development of the number of self-employed in the IWT sector in Belgium



Source: INASTI/RSZ

Figure 57: Development of the employment subject to social security deductions in the IWT sector in Belgium



Source: ONSS/RSZ
** Data for 2012 is based on available information for the first half of 2012.*

The total number of employees is much lower than the total number of self-employed active in the Belgian inland navigation industry. The development of the employment subject to social security deductions is presented in the following figure[2]. After an increasing trend between 2005 and 2008, the number of employees declined after 2008 and remained more or less stable between 2010 and 2012. This development follows roughly a similar pattern as the trend seen in the transport of freight cargo by inland navigation. This indicates how vessel owner/operators adjust the demand for nautical personnel to the transport demand by inland navigation.

About 27.3% of the foreign workers in Belgium are EU foreign workers and 0.01% are non-EU foreigners[3]. There are significant differences when comparing the age distribution of the self-employed operators compared to the employees subject to social security deductions. The following figure shows this difference. In general, employees tend to be younger than the self-employed. In the inland navigation sector, more experience is required to become a skipper. This explains why there are currently no self-employed IWT operators younger than 20 years.

The self-employed also stay longer in the IWT sector compared to the employees. A large share of the self-employed remain active even after they turn 65 years. Many young employees leave the IWT sector looking for more attractive opportunities.

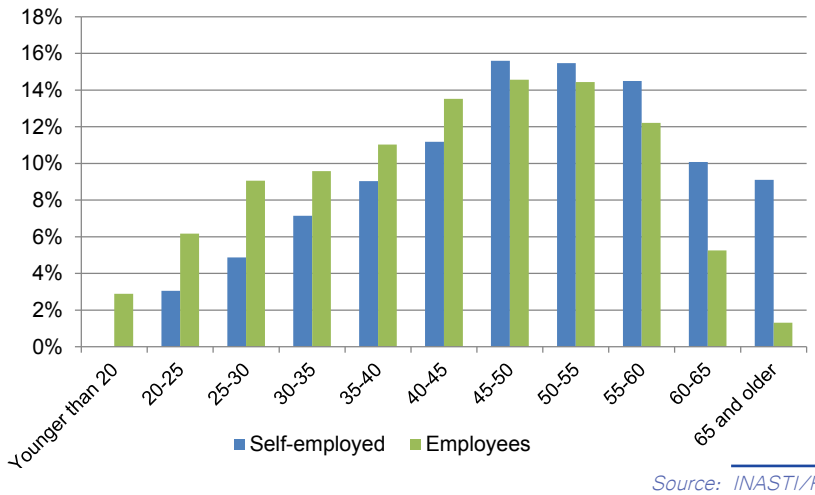
1 In Belgium, the number of self-employed in inland navigation is recorded by the National Institute for Social Insurance for the Self-Employed (INASTI in French, RSVZ in Dutch). This entails counting all self-employed persons living in Belgium or abroad and who exercise their profession in Belgium. The number of self-employed also includes the family members (e.g. the wife of the IWT operator) helping out in the business.

2 The employees subject to social security deductions are registered by the National Social Security Office (ONSS in French, RSZ in Dutch).

3 Source: Based on a survey with the Federale Overheidsdienst Werkgelegenheid, Arbeid en Sociaal Overleg (FOD) held in 2013.

Also the job perception and specifically the relatively unattractive working conditions have continuously reduced the number of young people interested in an IWT career in the past decade[1].

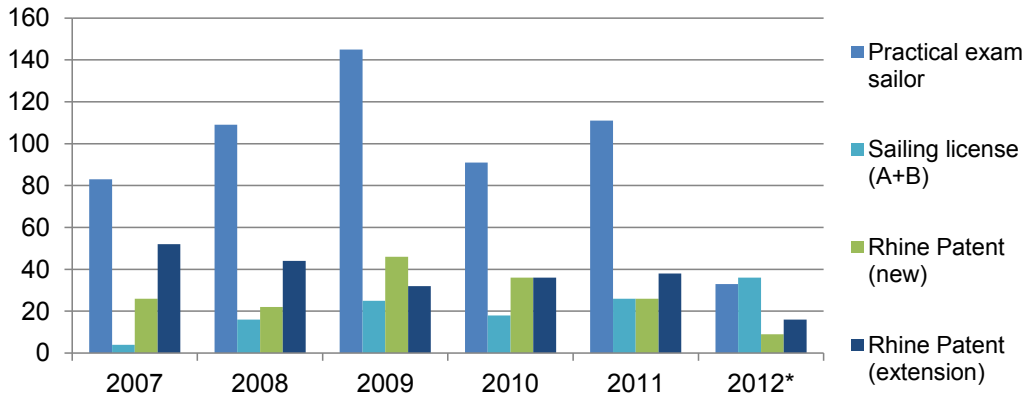
Figure 58 : Age distribution of self-employed and employees in the IWT sector in Belgium in 2012



Source: INASTI/RSVZ and ONSS/RSVZ.

Figure 59 shows the number of successfully completed exams and obtained patents (B). The sector is not only in need of more starting crewmen, but also of employees that remain in the sector and move up to higher IWT functions. As mentioned in previous publications of the Marketobservation, the aging problem of the self-employed population is expected to have significant impacts on the long term.

Figure 59 : Number of successfully completed exams and obtained patents (B)



Source: Promotie Binnenvaart Vlaanderen, based on FOD Mobiliteit en Vervoer

**Numbers until half 2012.*

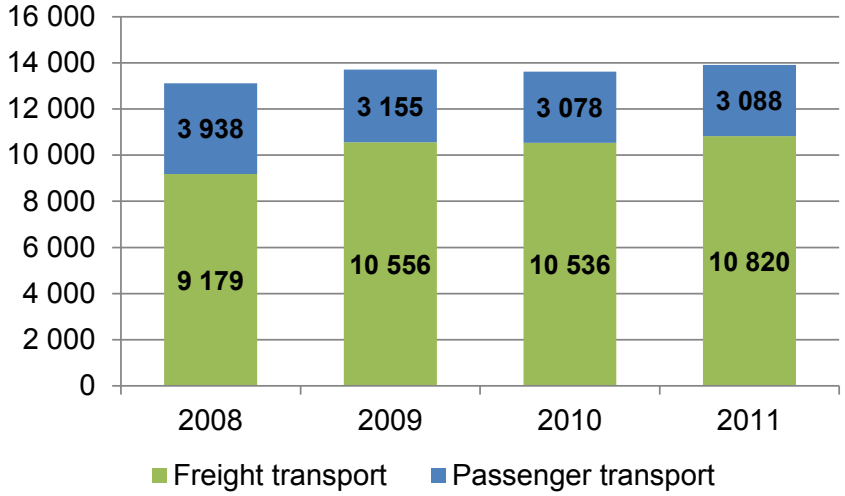
1 Source: NEA et al, Medium and Long Term Perspectives of IWT in the European Union (2011).

The Netherlands

The employment in the inland navigation sector in the Netherlands has seen an upward trend since the last two decades, especially in the dry cargo sector. The following figure presents the development of the total employment in the freight and passenger sector.

The inflow of workers (i.e. graduates or from other sectors) in the IWT sector has been slightly higher than the outflow (i.e. to other sectors or retirement). The result has been a gradual increase in the IWT employment in the Netherlands. In 2011, 16% of the total inflow is the result of new employees that graduated from different schools of navigation. About 7% of the total outflow is due of retirements and disabilities at work[1].

Figure 60 : Development of total employment in the IWT sector in the Netherlands

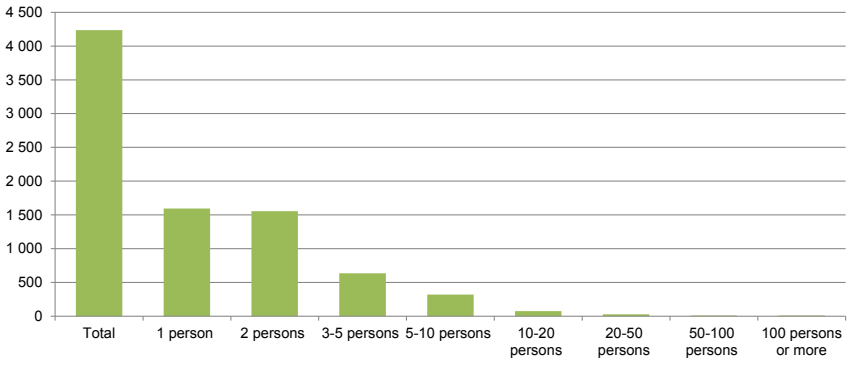


Source: EUROSTAT/CBS.

The IWT sector in the Netherlands is characterised by a significant large majority of small enterprises. The following figure presents the total number of Dutch IWT enterprises and shows the number of enterprises by employee size class. Around 90% of the Dutch IWT enterprises are small companies with 1 to 5 people employed. The majority of these companies consists of vessel owner/operators with family members helping out in the business. This is especially the case in the freight cargo sector.

1 Quelle: De Nederlandse Maritieme Cluster: Monitor 2012, Policy Research Corporation, 2013.

Figure 61 : Total number of Dutch IWT enterprises and enterprises by number of persons employed in 2012

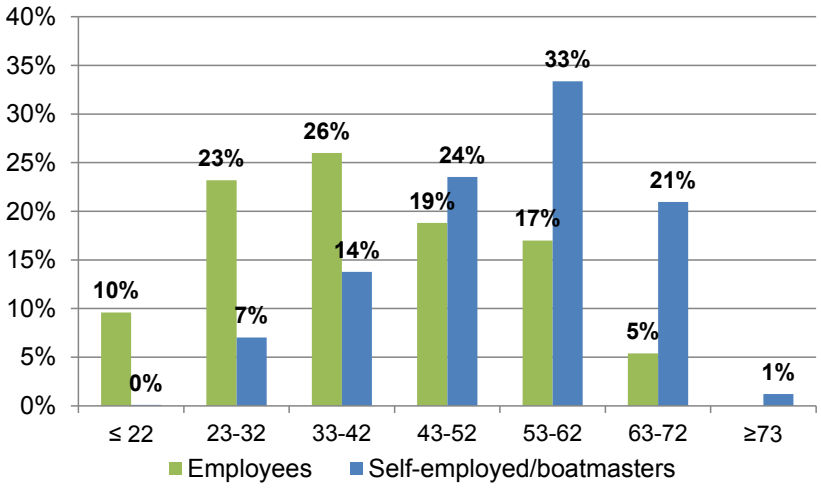


Source: CBS

The age distribution of the people employed in the Dutch IWT sector resembles the average age distribution from the total labour force in the Netherlands (i.e. all sectors)[1].

The following figure shows the differences between the age distribution of self-employed[2] and employees in the Netherlands. As mentioned before, the employees tend to be younger than the self-employed and boatmasters.

Figure 62 : Age distribution of self-employed/boatmasters and employees in the IWT sector in the Netherlands in 2011



Source: Estimations by PANTEIA, based on a survey carried out in 2013 under Ministries, Trade unions and Employer organizations and information from STC and De Nederlandse Maritieme Cluster: Monitor 2012, Policy Research Corporation (2013).

The number of vacancies in the Dutch IWT sector has remained stable in recent years and reaching a higher level compared to the average in the Netherlands.

1 Source: De Nederlandse Maritieme Cluster: Monitor 2012, Policy Research Corporation, 2013.

2 The age distribution of the self-employed is based on a survey that provided information on the age distribution of boatmasters, which in the Netherlands are in general the self-employed IWT operators.

Most of these vacancies are difficult to fill[1]. The growth seen in the fleet and the limited number of students graduating from the different training institutions has resulted in shortages in the supply side of the labour market. This shortage has partly been captured by foreign workers.

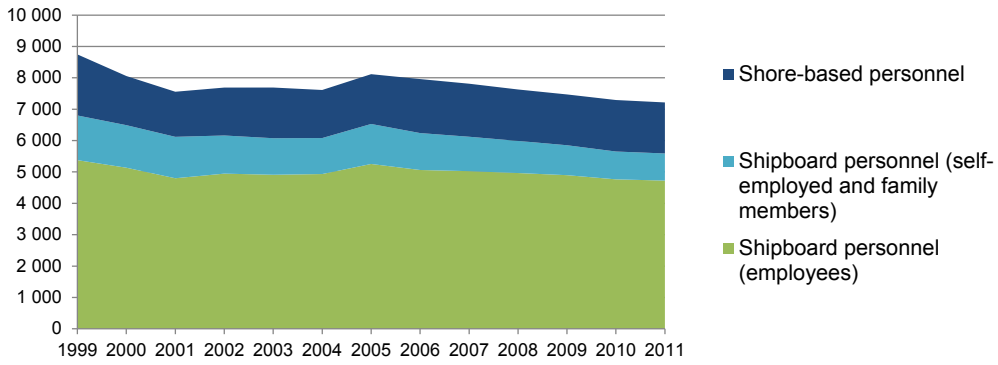
During the last years, the number of non-national employees has increased steadily. These employees are hired directly or through recruitment agencies in Luxembourg, the Czech Republic, Poland and the Philippines[2]. The Market Observation 2009-1 mentioned that in 2008 the register of service for non-nationals recorded a figure of 13.6% of the IWT workforce in the Netherlands. About 6.8% of these foreign workers originated from non-EU countries, mainly the Philippines.

Nevertheless, this percentage of non-EU workers is expected to be much lower now. In 2012, the Employee Insurance Agency (UWV) announced that it will become more difficult to obtain working permits for workers from outside the European Economic Area (EEA)[3]. Employers have to first look for employees from the Netherlands or other EU countries. A survey carried out in 2013 (involving ministries, trade unions and associations of employers) indicated a share of 1 % non-EU foreigners as against 26 % EU foreigners.

Germany

The development of the IWT employment in Germany is presented in the following figure:

Figure 63 : Development of total employment in the IWT sector in Germany



Quelle: DESTATIS

Since 2005, the total employment in the inland navigation sector has gradually been decreasing. In 2011, a total of 7,215 people were employed, of which 5,589 as shipboard personnel (including 865 self-employed) and 1,626 as shore-based personnel[4].

1 There is a limited number of students graduating from the different training institutions. Also, the share of people employed in the IWT sector with high education levels (e.g. college or university) is relatively low. However, during the last years a slight increase has been noticed. This is mainly the result of the new large and more complex vessels introduced in the IWT sector. Source: De Nederlandse Maritieme Cluster: Monitor 2012, Policy Research Corporation, 2013.

2 Source: De Nederlandse Maritieme Cluster: Monitor 2012, Policy Research Corporation, 2013.

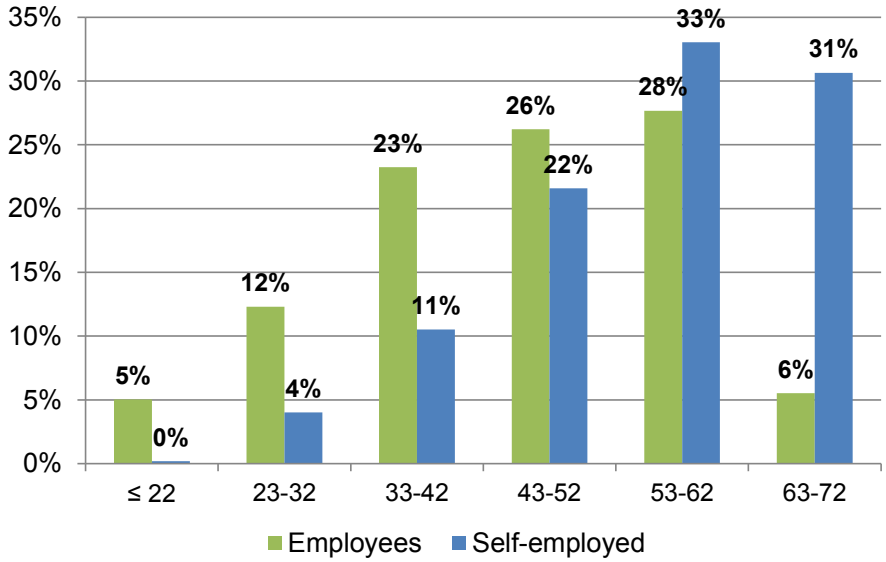
3 From 1 January 2014, working permits for employees from Bulgaria and Romania will not be necessary anymore.

4 Since the year 2008, no figures about the shore-based personnel in companies with a loading capacity of more than 10,000 tonnes are available.

As mentioned before, about half of the employment in the IWT sector is active in the transport of passengers (excluding shore-based personnel). The growth seen in the labour force of the passenger transport sector during the last 20 years has compensated the decline experienced in the employment of the freight transport market.

A cause for the fall in employment in Germany is the departure of staff due to retirement. The age distribution of the self-employed[1] and employees in Germany is shown in figure 64. The aging problem seen in the IWT sector in Germany is more acute compared to the Netherlands. This issue can be observed for the employees, but especially for the self-employed.

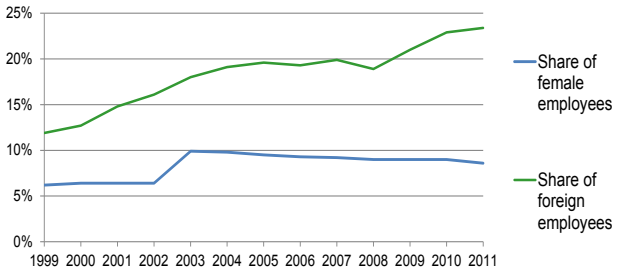
Figure 64: Age distribution of self-employed/boatmasters and employees in the IWT sector in Germany in 2011



Source: Estimations by PANTEIA, based on a survey carried out in 2013 under Ministries, Trade unions and Employer organizations and information from DESTATIS.

While the share of female employees has been declining slightly since 2003, the share of foreign employees has been increasing on average with 1% per year (see figure below). Germany reported in 2011 a total share of foreign employees subject to social security deductions of 23.4%[2]. The large majority of these workers are EU non-nationals (mostly from Poland, Czech Republic and Romania).

Figure 65: Share of foreign workers and female employees covered by the social security in German inland navigation



Source: Institute for Employment Research (IAB)

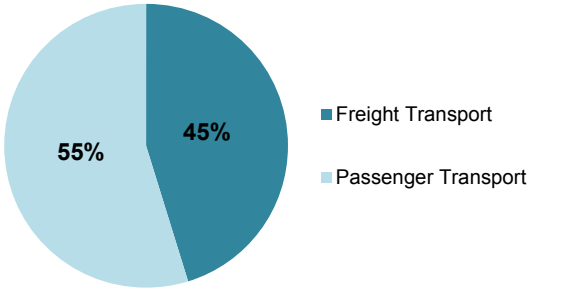
1 The age distribution of the self-employed is based on a survey that provided information on the age distribution of boatmasters, which in general resembles the age distribution of self-employed IWT operators.

2 Source: Institute for Employment Research (IAB)

France

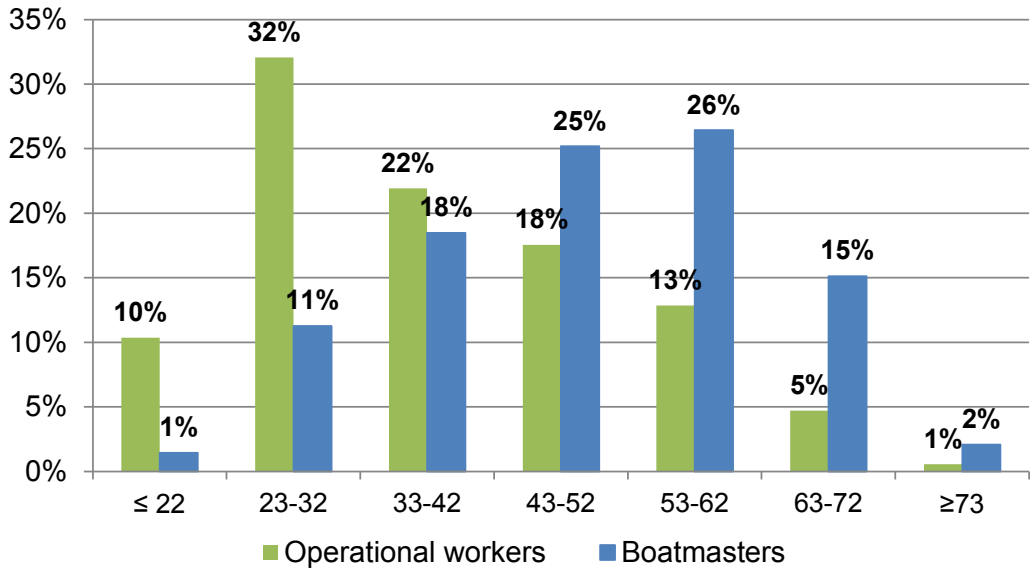
In 2011, around 3,700 persons were active in the IWT sector in France. The majority works in the passengers inland navigation (see figure 66). The age distribution of boatmasters and operational workers is presented in figure 67. This figure gives a good impression of the age distribution of self-employed (which are in general boatmasters) and the employees (which are in general the operational workers).

Figure 66: Share of total employment in the freight and passenger IWT sector in France for 2011



Source: Calculations by PANTEIA based on EUROSTAT

Figure 67: Age distribution of boatmasters and operational workers in the IWT sector in France for 2012



Source: Estimations by PANTEIA based on a survey carried out in 2013 under Ministries, Trade unions and Employer organizations

Slovakia and Bulgaria

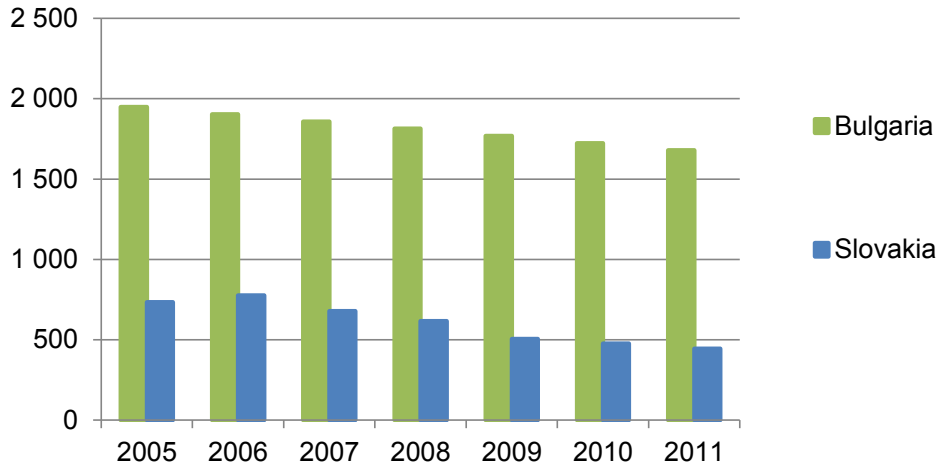
In 2011, 414 persons were active in the IWT sector in Slovakia and 979 persons in Bulgaria (see figure 68). A decreasing trend can be observed, which could partly be the result of the migration of Eastern European workers to Western Europe.

Around 13% of the people working in the IWT sector in Slovakia is self-employed. 10% of the foreign workers

are from other EU countries and 3% are non-EU foreign workers[1].

The share of foreign workers in Bulgaria is: 1% from other EU countries and 2% are non-EU foreign workers. About 5% of the employees in Bulgaria are between 19-24 years old. Almost 50% is between 25-49 years and 45% 50 years or older[2].

Figure 68: Estimated development of the total employment in the IWT sector in Slovakia and Bulgaria∗



Source: Estimations by PANTEIA based on a survey carried out in 2013 under Ministries, Trade unions and Employer organizations

∗ The total IWT employment in Bulgaria is based on a survey carried out in 2013 under Ministries, Trade unions and Employer organizations. The development of the IWT employment in Bulgaria between 2005 and 2011 has been estimated using the development reported by EUROSTAT.

1 Source: Based on a survey carried out in 2013 under Ministries, Trade unions and Employer organizations.

2 Source: Based on a survey carried out in 2013 under Ministries, Trade unions and Employer organizations.

Summary and Conclusion

The economic framework conditions in 2012 for inland shipping in Europe are difficult. The low or negative economic growth in the Eurozone is also holding back growth in freight transportation levels.

Data for the 28 EU Member States are only available for the year 2011; according to these figures, inland shipping in the 28 EU Member States has been unable to return to pre-crisis volumes. Moreover – following a significant interim high in 2010 – transport performance in 2011 was still lower than the figure for 2007 and 2008.

Against this backdrop, the quantities transported on the traditional Rhine increased from 187 million tonnes (2011) to 188.7 million tonnes (2012), which was thus negligible. In percentage terms, the rise was just under 1%.

On a positive note, it may be pointed out that Rhine traffic has grown in every year since 2009. However, growth in 2010, 2011 and 2012 was relatively restrained. In any case, it was not sufficient to return to 2008 levels. In this year transport on the Rhine was still 207.5 million tonnes.

Broken down according to individual freight segments, in some segments volumes increased, whilst in others there were falls. Increases were noted for coal and above all agricultural products. For coal, this was due to developments in energy policy.

Falls were registered in freight segments most closely related to the steel industry (ore, metals). The western European steel industry is currently in the grips of a structural crisis.

Container traffic in 2012 reached a level of just under 2 million TEU, thus equalling the previous year's figure.

In the tanker shipping segment, the transportation of chemical products increased considerably, whilst the mineral oil segment stagnated.

Due to the economic crisis, the inland shipping industry is in a difficult economic situation, as are companies from other transportation sectors. Volumes transported are hardly increasing, whilst freight rates are showing hardly any movement – above all for dry bulk cargo. In parallel, the supply side of the market is characterised by sustained high fleet levels. Taken together, these conditions mean that the market has excess capacity.

This results in low freight income, which over the long term means that business prospects are very difficult. The number of insolvencies started to rise again in 2012, and is due to rise further in 2013. The development in tanker shipping is somewhat better. Here both volumes and freight rates have developed better, which is due above all to the positive trend in the transportation of chemical products. This distinction has resulted in a more favourable development in revenue from tanker shipping. The reasons for this may be found above all in a different positioning against competitors.

Through a consistent focus (at times also required by regulations) on quality aspects (safety, double-hull tankers, certification by classification societies), tanker shipping has been able to establish a quality niche on the market.

A similar market niche strategy would hence be recommendable for dry bulk cargo shipping, which would depend upon vertical integration within the logistical chain (value adding services, storage services, etc.).

Appendices

Appendix 1: Economic forecast for transport demand in the 2nd half of 2013 and 2014

Appendix 2: Statistics for newly built vessels in 2008-2012

Appendix 1: Economic forecast for transport demand in the 2nd half of 2013 and 2014

Sector	Production / imports	Share of total traffic	Foreseeable influence on the demand for transport (compared to previous year)
Agriculture	hardly any growth	16.00%	0
Coal	Increase in amount of imported coal due to world-wide energy policy	19.00%	+
Steel industry: Ores	German steel production will fall slightly due to structural problems	20%	–
Steel industry: iron, steel	German steel production will fall slightly due to structural problems	8.00%	–
Building materials	hardly any revival in the construction industry	27.00%	0
Other goods / containers	slight container growth	10%	+
Overall forecast for development of demand in dry cargo shipping			+
Oil products	Sideways development in the oil price, although structural fall in quantities	60 %	0
Chemicals	Chemical industry +2 %;	40 %	+
Overall forecast for development of demand in tanker shipping			+

Development	
0 %	0
1 % to 5 %	– / +
6 % to 10 %	– – / + +
11 % to 15 %	– – – / + + +
16 % to 20 %	– – – – / + + + +
over 20 %	– – – – – / + + + + +

Sources:
Eurofer
Euracoal
German Coal Importers Association
Chemical Industry Association
CEFIC
CCRN forecasts based on historical developments and calculations

Appendix 2: New ships

Vessel type	2008			2009			2010		
	Number	Tonnage	kW	Number	Tonnage	kW	Number	Tonnage	kW
Motorised cargo	90	319 377	128 168	103	339 580	160 154	30	85 331	39 273
Pushed cargo barges	58	112 956		65	140 872		35	50 384	
Total	148	432 333	128168	168	480 452	160 154	65	135 715	39 273
Motor tankers	52	144 581	49 678	131	391 058	133 439	105	338 759	124 598
Pushed tanker barges	0	0		0	0		0	0	
Total	52	144 581	49 678	131	391 058	133 439	105	338 759	124 598
Push boats	4		1 684	8		12 760	2		2 156
Tug boats	4		3 890	5		7 780	1		810
Total	8		5 574	13		20 540	3		2 966
Cabin ships	4		5 432	17		17 072	16		5 872
Tourist ships	20		5 252	12		3 686	12		5 177
Total	24		10 684	29		20 758	28		11 049

Vessel type	2011			2012		
	Number	Tonnage	kW	Number	Tonnage	kW
Motorised cargo	20	57 600	26 665	9	23 776	12 392
Pushed cargo barges	15	43 000		8	18 492	0
Total	40	100 600	26 665	17	42 268	12 392
Motor tankers	84	182 000	90 500	39	117 000	33 333
Pushed tanker barges	2	3 262	0	0	0	0
Total	86	185 262	90 500	39	117 000	33 333
Push boats	2		1 268	1	878	4 083
Tug boats	1		5 280	4	0	21 120
Total	3		6 548	5	878	25 203
Cabin ships	10		12 420	23	0	44 136
Tourist ships	9		2 421	4	0	1 131
Total	19		14 841	27	0	19 518

Source: IVR

Glossary

ARA – ports: abbreviation for the three large European ports of Amsterdam, Rotterdam and Antwerp.

Transport or freight capacity offering: comprises the total load capacity of the available fleet, stated in tonnes.

Inland navigation: the carriage of goods or passengers on board a ship, intended for transport by inland ship traffic on a particular inland waterway network.

Inland waterway: waters located on the mainland capable of being used by ships with a minimum 50 t carrying capacity when normally loaded. These include navigable rivers, lakes and canals.

Revenue: the term "revenue" as used in this publication is intended to define inland navigation activity in the form of an index having regard to a specific level of demand and market transport prices.

River/lake traffic: the transportation of goods onboard a river/seagoing ship (seagoing ship designed for travel on inland waterways) performed wholly or in part on an inland waterway network.

Freight: means either the cargo or price of transportation.

Freight capacity: a cargo vessel's transport capacity expressed in tonnes.

Output: refers to freight transport output, measured in tonne kilometres.

Ship/ship-transhipment: unloading of freight from a cargo ship and the loading of this freight onto another cargo ship, even if the freight remains on land for a period of time before resuming its onward passage.

Tanker freight capacity: used in the context of the transportation of tanker cargoes.

Draught: the height of the immersed part of the ship, the draft thus changes as the ship is unloaded.

Tonne kilometres (tkm): unit of measure for recording transport output, corresponding to the carriage of one tonne over 1 km by inland waterway transport. Calculated by multiplying the quantity carried in t by the distance covered in km.

Dry freight capacity: used in the context of the transportation of dry goods.

Transshipment: the transfer of goods from one means of transport to another or ashore.

Water conditions: measurement of the water level of a water course or canal in cm.

Upstream: portion of the water course between the point in question and the source.

Downstream: portion of the water course between the point in question and the mouth or confluence.

Twenty-foot equivalent unit (TEU): standard unit of measurement for recording containers according to their size and for describing container ship or container capacity. A 20 foot ISO container (20 foot length and 8 foot width) corresponds to 1 TEU.

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Belgian Institute for Transport along Inland Waters

Ministry of National Development Hungary

Promotie Shortsea Shipping Flanders

RSVZ

RSZ

Austrian Statistics Office

British Department for Transport

Voies Navigables de France (VNF)

Eberswalde Waterways and Shipping Office

German Federal Waterway Authority

Ports

Port of Basel

Port of Karlsruhe

Port of Mannheim

Port of Neuss-Düsseldorf

Port of Ghent

Port of Lüttich

Port of Brussels

Port of Linz

Port of Regensburg

Port of Antwerp

Port of Amsterdam

Port of Hamburg

Port of Rotterdam

Port of Havre

Port of Lyon

Port of Strasbourg

Port of Paris

Port of Rouen

Port of Constanza

Private Companies

ABN AMRO

Bertil Arvidsson Consulting AB

ING Bank

North-Western Shipping Company, St. Petersburg, Russia

STC-Group

International Organisations and Bodies

Danube Commission

EBIS

ERSTU

Eurostat

EZB

IVR

International Monetary Fund

Industrial Associations

Federation of the German Steel Industry

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Contributors

European Commission

Rolf Dieter (Administrator)

CCNR Secretariat

Hans van der Werf (project manager)

Norbert Kriedel (market observation)

Bernard Laugel (printing)

Clémentine Hurbourque (design)

Angelika Espenhahn (design)

Contact : n.kriedel@ccr-zkr.org

Panteia

Nathaly DASBURG (market observation)

Translation

Bettina ACHHAMMER (CCNR - German)

Christophe HENER (CCNR - French)

Pauline de ZINGER (External - Dutch)

SCITECH (External - Englisch)

Expert group

Christian VAN LANCKER (ESO)

Frédéric SWIDERSKI (ITB)

Manfred KAMPHAUS (EBU)

Michael GIERKE (BAG)

Eloi FLIPO (VNF)

Imprint: September 2013

Published by the Central Commission for the Navigation of the Rhine

Secretariat: 2, place de la République 67082 STRASBOURG CEDEX – www.ccr-zkr.org
ISSN 2070-6715

CENTRAL COMMISSION FOR THE NAVIGATION OF THE RHINE

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