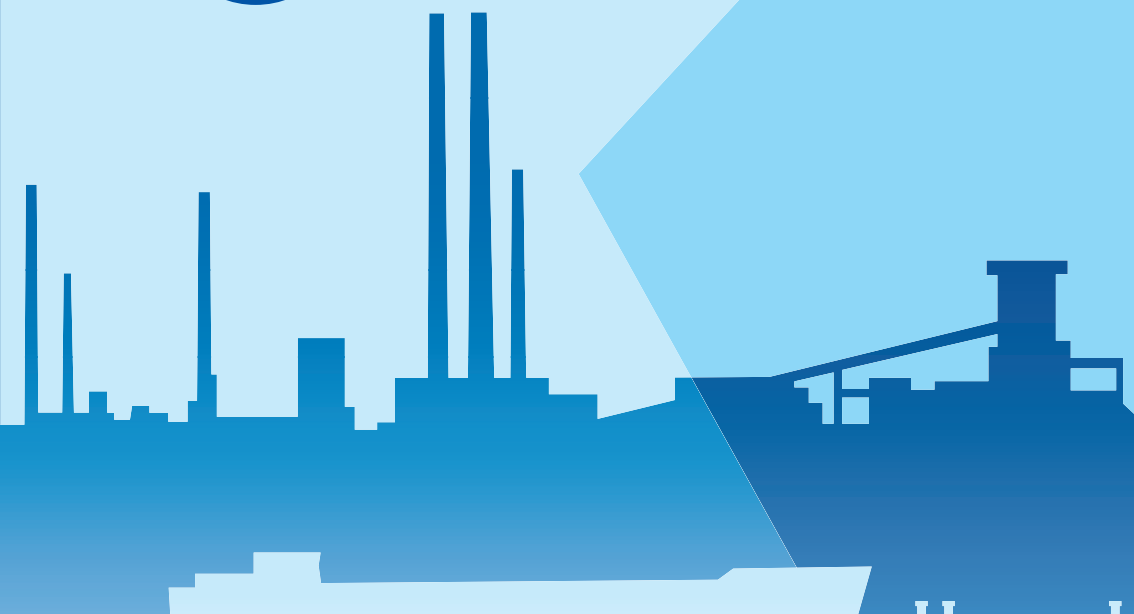


# INLAND NAVIGATION IN EUROPE

MARKET OBSERVATION

2008

2





# **Market observation no. 8**

**Report on the economic situation at the end of 2008 / beginning of 2009**

## **Disclaimer**

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June 2009

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## General introduction

At the time of publication of this document, the economic crisis and the various aspects of its impact on the market is the most important issue. Indeed, many interested individuals are asking themselves how far the demand for transport will drop and what the next months will have in store for the waterway transport market.

The low demand for transport that is observed in most branches of industry has a direct impact on the volume of cargo. Should this situation continue for a longer period of time, it would have disastrous consequences on operators' capacity to invest. Since numerous vessels have been decommissioned due to the lack of demand for transport, inland navigation companies will soon be facing difficulties. At present, freight rates for transports do not always cover operating costs. If this market situation were to persist, it could lead to insolvency on the part of the operators. One consequence of these financial constraints is that investments which are not regarded as urgent are being put on hold.

The development of fleets has also undergone changes in the wake of the economic crisis. On the one hand, shipbuilding has all but come to a standstill, and on the other hand, the size of the vessels could be reconsidered.

For this reason, this report discusses the so-called "smaller vessels" market. There is an important need to analyze this specific market, in which fleets are growing smaller by the year and in which currently no new vessels are being commissioned, in order to determine the demand in this market sector and assess its market potential.

The economic crisis is affecting more or less all modes of overland transport. The entire economy is living in the hope that the recession may soon bottom out, at which point inland navigation must be ready for competition and adapt to the changed context.





## Section 1

### Section 1 – Situation of the market at the beginning of 2009

In describing the evolution of transport by navigation on the Rhine it is reasonable to start by describing the evolution of the handling in the most important sea ports that are the origin of the navigation on inland waterways. There are several reasons for this evolution, and they should be explained briefly here.

Transport with the hinterland of sea ports plays an increasingly important role in the evolution of inland transport. The growth of transport with the hinterland of sea ports has been fuelled by the long-standing expansion of world trade between the developed European economies and countries with rapidly and dynamically growing emergent economies, such as China, India and Russia.

The quantitative importance of hinterland traffic becomes clear if we look at the following figures. The hinterland traffic on German waterways from the sea ports of Rotterdam, Antwerp, Amsterdam, Hamburg and Bremen/Bremerhaven currently accounts for about 61% – i.e. more than half – of all inland navigation transport on German waterways.

About a third of dry bulk goods in traffic between sea ports and their hinterland is iron ore. Other important goods are chemical products and coal. Overall, these categories of goods account for about two-thirds of the transport of dry bulk goods between sea ports and their hinterland. This shows that the sea ports, and hence also inland navigation, play an extremely important role in supplying raw materials to major branches of industry in western Europe.

In terms of volume of hinterland traffic, the western sea ports, i.e. the Dutch and Belgian sea ports (Rotterdam, Amsterdam and Antwerp), occupy a dominant position. By tradition they also have a close relationship with inland navigation on the Rhine.

In the following report, particular emphasis will therefore be placed on the evolution in handling in these sea ports, and a connection drawn with the evolution of the individual industrial branches in the context of the general development of the present economic situation. In this respect a number of parallels may be drawn between the evolution of the present economic situation in the various industrial branches, the evolution of handling in the sea ports, and navigation on the Rhine by sector of goods. The development towards the end of 2008 and in the first part of 2009 were marked by the economic crisis that had a serious effect on world trade and as a result also on the transport sector. This will be evident in the present report in the evolution of the sea ports and transport on inland waterways; the figures show that not all market segments have been affected by the crisis in the same way.

## 1. Handling in the main sea ports

### 1.1 Rotterdam

Despite a weak last quarter of the year, the sea port of Rotterdam ended 2008 showing slight growth, in the region of 2.7%. Imports had increased by about 4%, while exports had dropped by 0.5%. Overall in the dry bulk goods sector there was an increase of 4% in handling. From

October onwards there was a relatively abrupt drop in handling figures for coal and steel products, as a result of the decreased demand for steel from the automobile industry.

In the first quarter of 2009 about 11% less goods were handled in the sea port of Rotterdam than in the first quarter of the previous year. There were, however, noticeable differences between the individual categories of goods. Handling of iron ore and scrap metal were halved, making this the segment of goods most affected by the decrease. This 50% reduction was the result of the slump in demand for steel and the supplies of ore still available at the terminals. Handling of coking coal sank to the same low levels as iron ore, since coking coal is used in the manufacture of steel. On the other hand, the severe winter and the structural increase in coal requirements in the German energy economy produced an increase of 24% in the handling of steam coal.

The severe winter also favoured handling of mineral oil products, which increased by 13%. In this case, however, it was the change in crude oil prices that played an important role in the increased quantity of handling. At the same time, the market players were expecting further price increases in the future, and this was the reason for forward prices being higher than spot prices. This also contributed to the increase in the quantity handling.

Serious reductions were recorded for individually packaged goods (-24%) and containers (-18%). Other bulk dry goods (minerals, building materials, biomass) suffered from the ailing situation in the chemicals branch and in the building industry. Because of the good harvest in Europe in 2008/2009, there was little change in the volume of handling of bulk agricultural products, the final figure being -4%.

*Source: Port of Rotterdam.*

## **1.2 Antwerp**

The port of Antwerp recorded growth of 3.5% in total handling last year. Handling of containers (laden and empty) increased by 7.2% compared with the previous year. For some individual categories of goods, however, there were losses, which were mainly caused by the effects of the economic crisis that started to be felt in the autumn. Handling of iron and steel products fell by 15% compared with the previous year. The quantity of mineral oil products handling was also lower over the year as a whole. Towards the end of the year the drop in prices began to take effect, so that the final result for the year as a whole showed a drop of only 3%.

The first quarter of 2009 was marked by the economic crisis. The total volume of goods handled fell by 19.3% compared with the first quarter of 2008. The number of containers handling (calculated in TEUs) fell by 16.3% compared with the first quarter of 2008. Dry bulk goods suffered the greatest drop, with the quantity transhipped falling by 41.2%. One important reason for this drop was the closure of Arcelor Mittal's blast furnace works. This led to considerably reduced requirements of iron ore and other materials such as coking coal. There was a considerable reduction in the quantities of wood, stone and earth handling as well as steel products.

Liquid bulk goods showed the smallest reduction – just 4.1% less than the previous year. The falling turnover for liquid bulk goods from the chemical industry should be almost offset by increased demand for mineral oil products. This increase in demand is a result of the drop in the price of crude oil.

*Source: Port of Antwerp.*

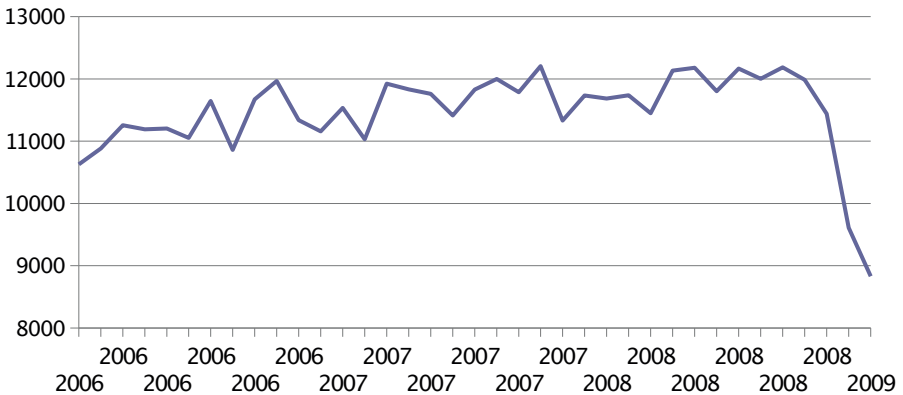
### 1.3 Hamburg

In Hamburg, Germany's largest sea port, the worldwide economic slump resulted in a serious weakening in the evolution of handling figures towards the end of 2008. Thanks to a strong first half of the year it was nevertheless possible to achieve a result comparable to that of the previous year. Towards the end of 2008, however, the evolution took a serious turn for the worse. In the last quarter of 2008 sea traffic was at 6.3% less than the value for the last quarter of 2007. In December 2008 the figures were 18% down on the previous year, and in January this figure worsened, to 24%.

There was also a reduction in container activity. The number of containers handled in January 2009 was 23% less than in the same month the previous year. In the last quarter of 2008 there was a slight drop, of 9%. For 2008 as a whole, the difference compared with the previous year was only 1.5%.

The results are the consequence of the dramatic reduction in world trade in the second half of 2008. Trade with China, the most important trade partner of the port of Hamburg, was particularly negative. The deteriorating economic situation in the Baltic States, which are significant for the port of Hamburg, played an important role. The following table shows the dramatic slump in sea traffic in the autumn of 2008.

Figure 1: Sea transport in the port of Hamburg (turnover in 1 000 tonnes).



Source: Statistikamt Nord ; (handling in 1000 tons)

Consideration of the individual segments shows that all goods, with the exception of mineral oil products, have suffered from the crisis. The easing of tension in prices for crude oil and heating oil were the reason for imports of mineral oil products being 38.6% more than in the previous year. This also had an overall positive effect on handling of liquid loads, which showed progress of 6.3%.

The volume of handled bulk goods for the steel sector (iron ore, coal) in 2008 stayed 6.7% lower than in the previous year. This is a result of the conjunctural decline in the steel industry.

Source: Statistics office for northern Germany - inland navigation April 2009.

## 1.4 Amsterdam

The port of Amsterdam saw 7% growth in handling last year compared with the previous year. However, the strong growth that was visible in the first ten months of the year suffered serious setbacks in the last two months of the year.

In terms of TEUs, the handling of containers increased by about 10%, and growth in terms of weight of load was about as high. The handling of mineral oil products increased by 22%. Handling of coal increased so slightly – by 0.1% – that they may be considered to have remained static. This result is not surprising despite an economic evolution marked by shrinkage, since coal imported through the port of Amsterdam was above all intended for the production of energy, which has not been affected by the recession to the same extent as the steel sector.

*Source: Port of Amsterdam.*

## 1.5 Le Havre

In the sea port of Le Havre the total volume of handling in the first quarter of 2009 fell by 14.3% compared with the previous quarter. The biggest reductions were for building materials such as cement. The number of containers handled fell by about a quarter compared with 2008. Less marked was the reduction in the figures for the volume of coal handled – the figure was 11.5%. The volume of crude oil handled remained relatively stable compared with the previous quarter, while refined products and fuels showed strong growth.

*Source: Port of Le Havre.*

## 1.6 Ghent

As a result of the economic crisis, sea traffic in the port of Ghent fell by 27% in the first quarter of 2009. 2008 was nevertheless a record year. The two main pillars of the sea port of Ghent are the steel industry and the automobile industry. Both branches are currently in serious crisis. This is visible in the fact that a blast furnace plant near Ghent owned by ArcelorMittal has been shut down temporarily, and another steelworks in Liège has been put on 50% capacity.

In this context, and in view of the fact that the port of Ghent is an important port for imports for the Belgian steel industry, the drop in the volume of handling of ore and scrap metal by two-thirds (67%) is relatively understandable. Slightly less extensive, but no less dramatic, was the drop in mineral oil products, at around 25%. Ro-ro transport fell by 30%, and there was even an enormous double-figure reduction in agricultural products.

*Source: Lloyd's, 20 April 2009.*

## 1.7 Marseille

Overall, the volume handled in the port of Marseille during the months of January and February 2009 was 21% less than during the same two months of the previous year. Handling of dry bulk goods were particularly hard-hit – indeed, they were almost halved. This slump can be explained by the much reduced quantity of pre-products being imported for the steel industry, such as ore, scrap metal and coal. The handled volume of these goods fell by 69%. With the re-commissioning of the blast-furnace steelworks near Fos-sur-Mer, imports of iron ore and coal ought to increase later in the course of the first half-year.

Liquid bulk goods were also hard-hit by the crisis, and showed a reduction of 17% in February, following on from a drop of 11% in January. Most of the liquid bulk goods handled in the

port of Marseille are chemicals. Bio-fuels are becoming increasingly important here, and despite the crisis they even managed to show an increase of 77%. For handling of liquid bulk goods, the quantities exported through the port of Marseille were greater than the quantities imported.

For mineral oil products, the quantities handled during the first two months of the year were 12% less than in the previous year. This drop is explained above all by falling imports of crude oil, which in turn is a result of the decreased activity of French refineries. This is partly due to the crisis in the chemicals industry and also partly to temporary loss of function at the refineries due to inspection and maintenance work being carried out.

The number of containers handling fell by 31% up to and including February, mainly as a result of the decline in transport on the route between Europe and Asia. The volume of conventional individually packaged goods fell by half. This was largely due to the decreased exports of sheet steel from the Arcelor Mittal steelworks in Fos-sur-Mer.

*Source: Port of Marseille.*

### **Summary**

Last year, exports and imports of goods and raw materials in the most important European sea ports were still at a very high level. The volume of cargo handled by major sea ports (Rotterdam, Antwerp, Amsterdam) was still growing in the year ending 2008 and higher than the previous year. On the other hand, a sea port like Hamburg, which specializes more on containers, experienced a slight decline in cargo handling in 2008 because the global maritime trade and hence also the container handling segment fell a little earlier than the chemicals or steel sector. In the last quarter of 2008 and at the beginning of 2009, all ports were negatively affected by the economic and financial crisis. The increase in mineral handling in the wake of the slump in crude oil prices was unable to offset the dramatic drop in demand for imports of raw materials (ores, scrap metal) for steel production. Recently, in Spring 2009, the first faint signs of a slight recovery were detected in the container handling area.

## 2. Demand for transport in the main economic sectors

### 2.1 Agricultural sector

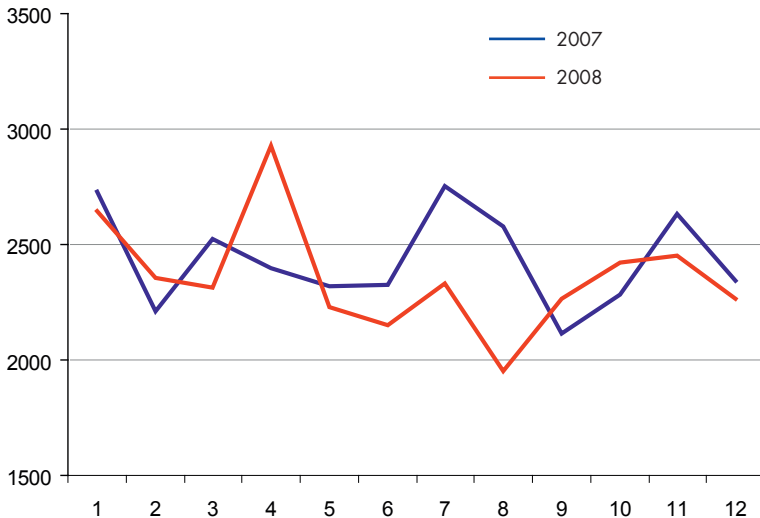
The economic crisis did not have as negative an effect in the agricultural sector and for the transport of foodstuffs as in other sectors in 2008. Transport services in the second half of 2008 developed to a similar extent as in the corresponding period of the previous year. Calculated over the full year, there was a drop of 6.4% in the quantities of agricultural products transported, while the transport of other foodstuffs and animal feed increased slightly, by about 1%. Initial evaluations point to a substantial reduction in the transport of agricultural products and foodstuffs in January 2009 compared with the previous year (in double figures).

### 2.2 Energy and transport sector

#### A) Solid mineral fuels

As predicted in the 2008-1 market observation publication, the economic crisis has not had such a negative effect on the transport of solid mineral fuels as on the iron and steel, chemicals and containers sectors. This is because solid fuels are used by a part of the energy sector; in times of weak economic development, demand for energy decreases less dramatically than the activity of many other industrial branches, since a substantial part of energy supply is not dependent on the economic environment. Thus climate change also plays an important role in demand for energy. Overall, transport for the full year 2008 fell by about 3%. Transport in this sector declined by less than transport in other areas, such as iron and steel, chemicals, and containers.

Figure 2: Evolution of the transport of solid fuels on the Rhine in 2007 and 2008



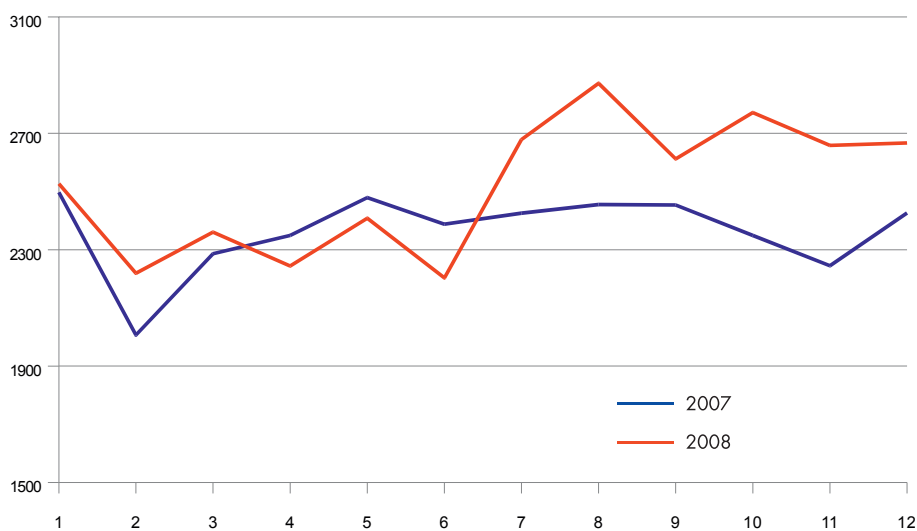
In 1 000 tons. "Solid fuels" refers above all to coal. Source: Destatis. 1 to 12 are month

The tables given above show that there was no dramatic drop in demand for the transport of solid fuels towards the end of 2008. Even the initial results for January 2009 indicate that the evolution in transport for solid fuels at the beginning of 2009 decreased less than in other segments of navigation on the Rhine.

### **B) Mineral oil products**

In relation to the effects of the economic crisis, the mineral oil sector plays a specific role. The reason for this is the evolution in the price of crude oil. The prices for crude oil reached record levels on both the spot and forward markets by the middle of 2008, and then slumped dramatically. In view of the fact that the evolution in prices between 2005 and the middle of 2008 had been marked by a strong upward trend, many consumers had delayed ordering deliveries of heating oil and the consumption of fuel in the transport sector had been reduced. It was only reasonable therefore that there were more orders for mineral oil products placed during the second half of the year, when the level of oil prices plummeted, which meant that demand for transport increased correspondingly. This effect is made clear in the following table.

Figure 3: Evolution of transport of mineral oil products on the Rhine in 2007 and 2008\*



\* In 1 000 tonnes; 1 to 12 are month. Source: Destatis.

The transport of mineral oil products nevertheless progressed by about 6.5% over the full year 2008. It is therefore noticeable that the mineral oil sector was able to record an increase in transport in 2008, contrary to the general trend.

It can therefore be noticed that even at the beginning of 2009 the storage remained generally on a low level. The quite important buying realised in the autumn 2008 only covered the high consumption due to a cold winter. As regard to the still low level of storage, new high in transport activity may be expected in 2009, probably in autumn.

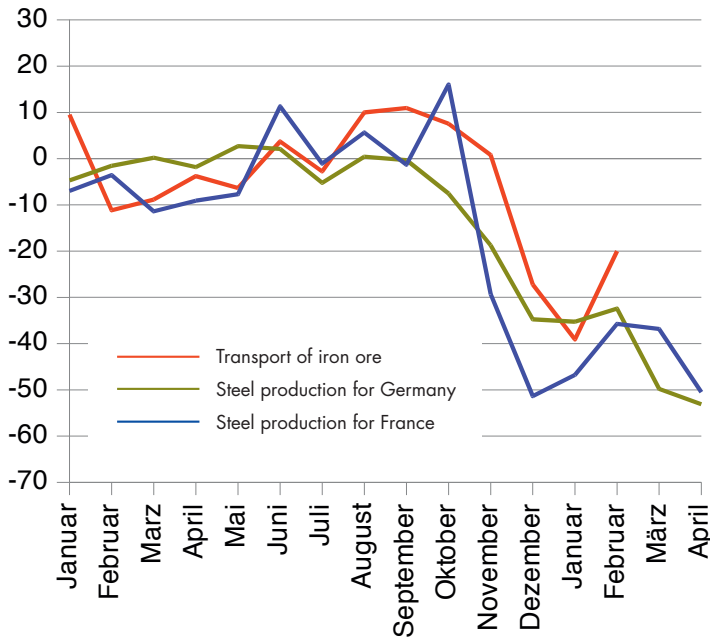
In the long term, however, transport in this branch of industry has declined, above all as a result of economising in the heating oil market and changes in consumer habits in the automobile sector.

### 2.3 Iron and steel industry

#### A) Ore and scrap metal

Despite the economic crisis setting in during the second half of 2008, the transport of ore and scrap metal progressed in a stable fashion until November. In December 2008, however, the demand for transport slumped dramatically, and the volume of ore and scrap metal transported fell by about 25% compared with the previous year, as the following table shows.

Figure 4: Evolution in production of crude steel in Germany and France and transport of iron ore and concentrates on the Rhine (Jan. 2008 to Jan. 2009)\*



Source: Destatis, Eurofer. Calculation: CCNR. \*Monthly data; rates of change compared with previous year, given as percentages. Figure for transport on the Rhine in January: evaluation on the basis of Destatis data.

A declining trend in steel production was evident in Germany from about October, somewhat earlier than in France, although French production in November and December dropped more than in Germany. As the table above shows, the correlation described in the 2008-1 publication between steel production and the transport of iron ore is more or less confirmed



– the rate of change in the transport on the Rhine for iron ore and the rate of change in steel production in both Germany and France move in the same direction, and they are also comparable in terms of extent.

This supports the econometric results from publication 2008-1, which show a one-to-one ratio between steel production in Germany and demand for transport. There is nevertheless a slight delay between the change in production and the change in demand for transport – the time difference is about one month.

For the period not yet covered by the statistics currently available, an indication of steel production in Germany and France may be deduced. Figures for steel production in Germany in March 2009 and April are available already, and these show that the downward trend has not stopped yet – production of crude steel continued to fall dramatically in March. Compared with the same month in the previous year, the drop was almost 50%, which corresponds to halving steel production in just one year.

According to statistics produced by the French steel association union, the drop of production of crude steel in France in March was not as dramatic.

In the context of modelling calculations for steel production and the transport of iron ore, two scenarios should be considered. Scenario 1 is based on a decline in German and French production of steel about 30% compared to the previous year. In this optimistic case the demand of transport for ore would only decline about 35 %.

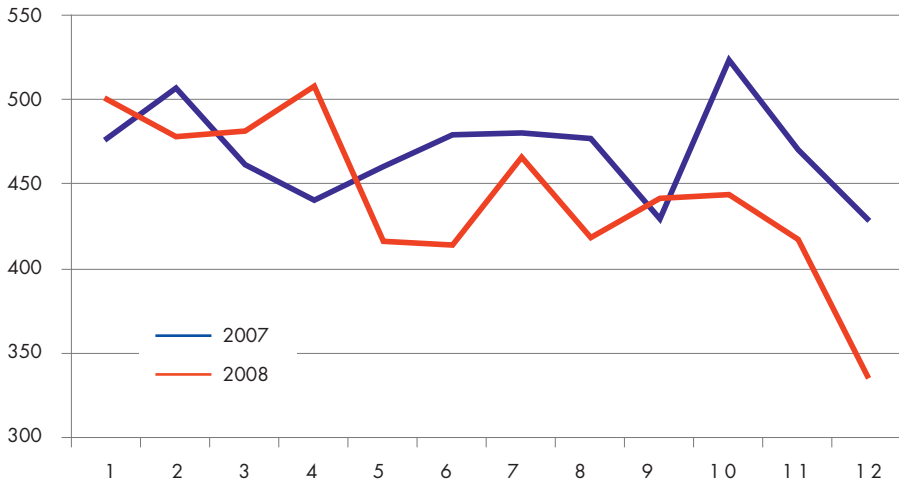
Another possible scenario, indeed more pessimistic scenario, involves reduction of the German steel production of 50% in 2009. In this case, the demand transport for ore would probably be reduced of 60%.

## ***B) Iron and steel products***

This is one of the segments that showed the most dramatic reductions in 2008. Overall, transport was about 9% lower than in the previous year. More specifically, the downward trend became considerably more noticeable towards the end of 2008. Indeed, transport in December 2008 stood at about 25% less than the level of the same month in the previous year. Initial evaluations for January 2009 point to a further worsening of the situation – according to data from the German Federal Statistics Office, the transport of iron and metal products in January 2009 was about 37% lower than in the same month the previous year.

Within the segment as a whole the transport of sheet and strip steel occupies far and away the most important place. In 2008 these goods corresponded to a proportion of 76% of all transport in the iron and steel products sector. The following table shows the rates of change in the transport of sheet and strip steel in 2007 and 2008.

Figure 5: Transport of sheet and strip steel on the Rhine (rates of change given as percentages)



Source: Destatis, in 1000 tons ; 1 to 12 are month

The figure shows that a weakening was visible as early as May 2008, and became more pronounced towards the end of the year. In view of the further drastic reduction in steel production in Germany in March 2009, we can expect to see a continuation in the weak evolution of navigation on the Rhine during the first half of 2009.

Inland navigation ought to show a similar rate of shrinkage as the rate of shrinkage being observed at the moment for the production of steel.

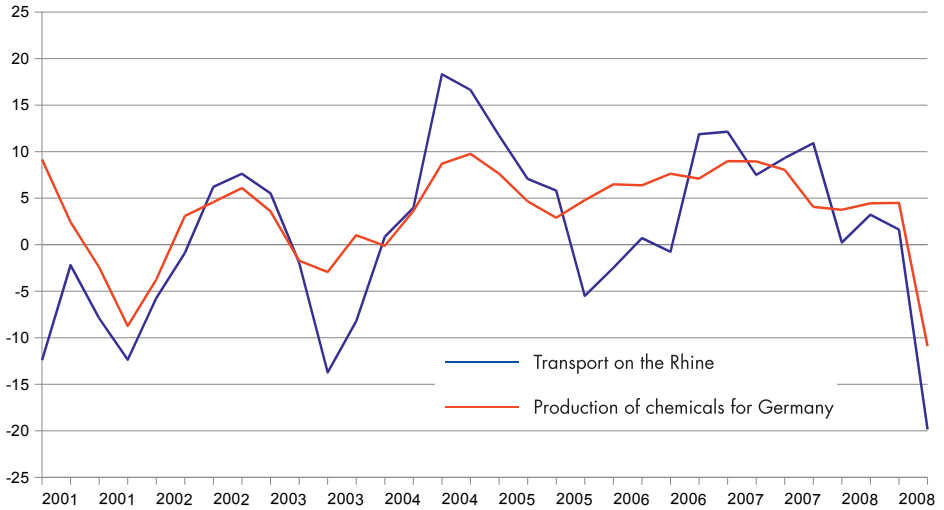
It is not currently possible to foresee at what level – and above all, when – steel production will bottom out. In this area, much depends on the further evolution in the automobile sector, as it is an important factor in demand for steel.

## 2.4 Chemical products and fertilisers

For the industrial branch of the chemicals industry there is a relatively close relationship between production and transport by navigation on the Rhine. It is noticeable that the volatility of transport (the scale of the change recorded) is greater than that of production.

This relationship also applies in respect of the current crisis, as the following table shows. It can be seen that the rate of change in chemical production in Germany and the rate of change in the transport of chemicals on the Rhine follow more or less the same evolution. The chemical industry and hence also demand for the transport of chemical products was particularly hard-hit in the last quarter of 2008 by the economic crisis. Production in Germany was about 11% lower during this quarter than in the previous year (data: VCI).

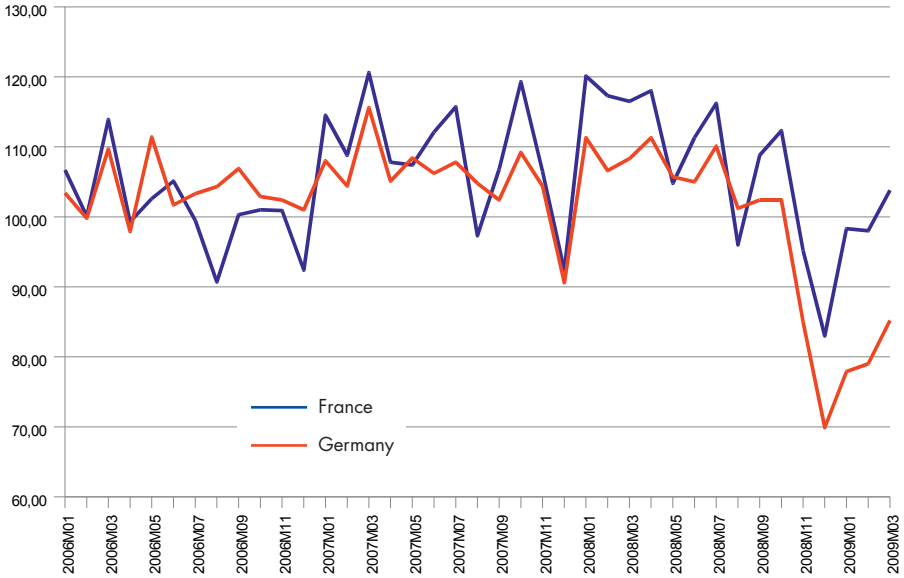
Figure 6: Transport of chemical products on the Rhine and chemical production in Germany (rates of change given as percentages)\*



Source: Destatis, VCI (4th quarter of 2008). Calculation: CCNR. \*Monthly data; rates of change compared with previous year, given as percentages.

As shown by the following Figure, recently a slight recovery seems to be expectable for the chemical industry. In France and Germany the production rose a bit in February and March compared to the previous year. Even if it is only a slight increasing, it could indicate that the bottom of the crisis has already been reached for the chemical industry. Information collected by the European Chemical Organisation CEFIC from companies lead to a similar recovery trend.

Figure 7: Production index for chemical products



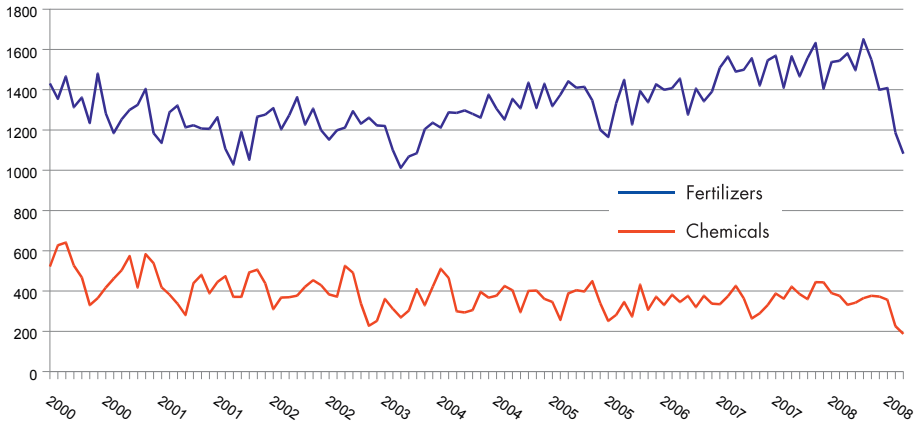
Source: Eurostat. \*Index: 2005 = 100.

Current evaluations for the branch (VCI) are based on the assumption that chemical production in 2009 will remain at this low level. No improvement is likely before 2010 at the earliest. For transport, therefore, this would mean having to cope with a weak year in 2009.

According to the first figures available, the volume of chemical products transported on German inland waterways in January 2009 was 32.4% less than during the same month the previous year. The majority of this transport is on the Rhine.

The following table shows the transport of fertilisers as well as the transport of chemical products. The transport of fertilisers has fallen steadily over the years, and more recently has settled into a stagnant phase. In 2008 this stagnant phase was combined with the general downward trend in the economic situation overall.

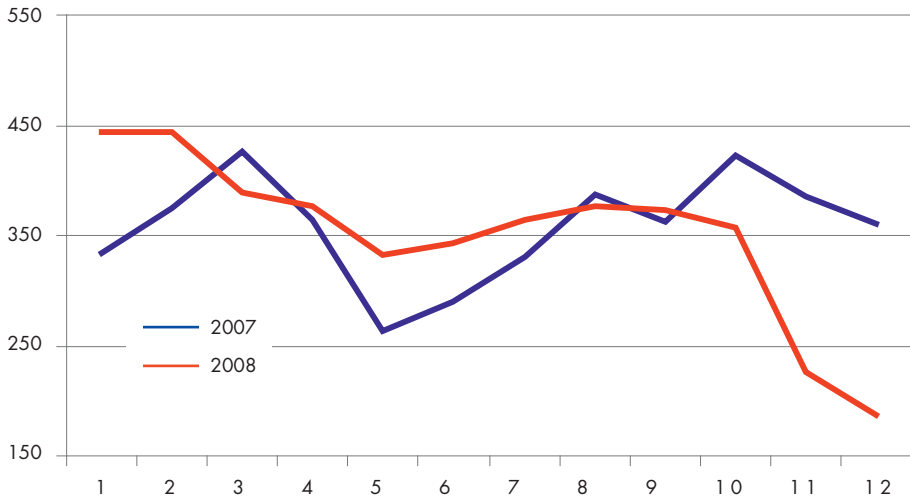
Figure 8: Transport of chemical products and fertilisers on the Rhine



Source: Destatis. \*Monthly data (in 1 000 tonnes).

The extent to which the economic crisis has contributed to the evolution in the transport of fertilisers can be seen in the following table. This shows that the economic crisis in the last quarter of the year also affected the transport of fertilisers. The initial results for January 2009 even show that the transport of fertilisers during this month compared with the same month the previous year had been halved. As a result, fertilisers constituted the category of goods that showed the sharpest decline in transport at the beginning of the crisis.

Figure 9: Transport of fertilisers on the Rhine\*



1 to 12 are month

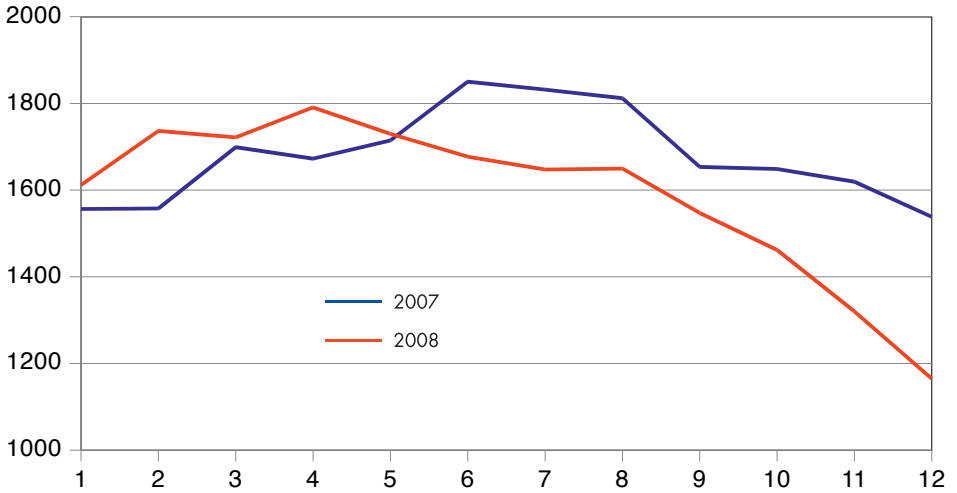
Source: Destatis. \* In 1 000 tonnes.

## 2.5 Vehicles, machinery and containers

The transport of vehicles and machinery fell as soon as the economy began to show signs of weakening in the middle of 2008. The percentage drop compared with the same month the previous year went into double figures from October onwards. The extent of the decline increased each month, and by December had reached the figure of 24%. Overall, the transport of machinery and vehicles during 2008 fell by 5.4% compared with the previous year.

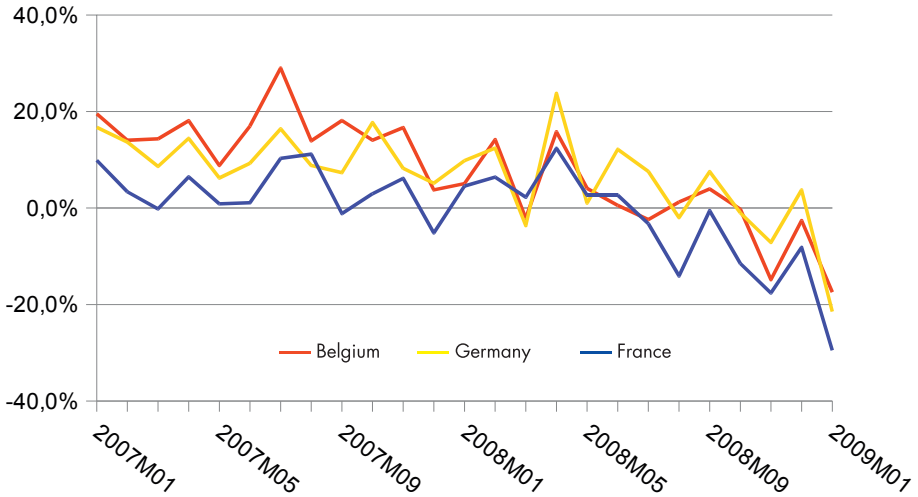
The slump that was visible in this sector from the autumn of 2008 is not surprising, given the context of the worsening recession, and more particularly the serious decline in industrial production. Industrial production in France and Italy was hit full on by the economic crisis from August 2008 onwards. Industrial production in August 2008 fell in these countries at a double-figure rate compared with the same month the previous year. Production in Germany and Belgium stayed relatively stable for a few weeks longer, but then these countries also suffered a serious drop in industrial production in November 2008, although it was less marked in Germany. Industrial production in Germany was not hit by the crisis to the same extent until the beginning of 2009, and the average rates of change for the four countries Germany, France, Belgium and Italy in January were -24%. Thus the drop in industrial production at the beginning of 2009 is comparable in scale to the drop in the transport of vehicles and machinery by navigation on the Rhine.

Figure 10: Transport of vehicles and machinery on the Rhine – comparison of 2007 and 2008



1 to 12 are month  
Source: Destatis.

Figure 11: Evolution of industrial production in Belgium, Germany and France compared with the same month the previous year, given as percentages (Jan. 2007 – Jan. 2009)

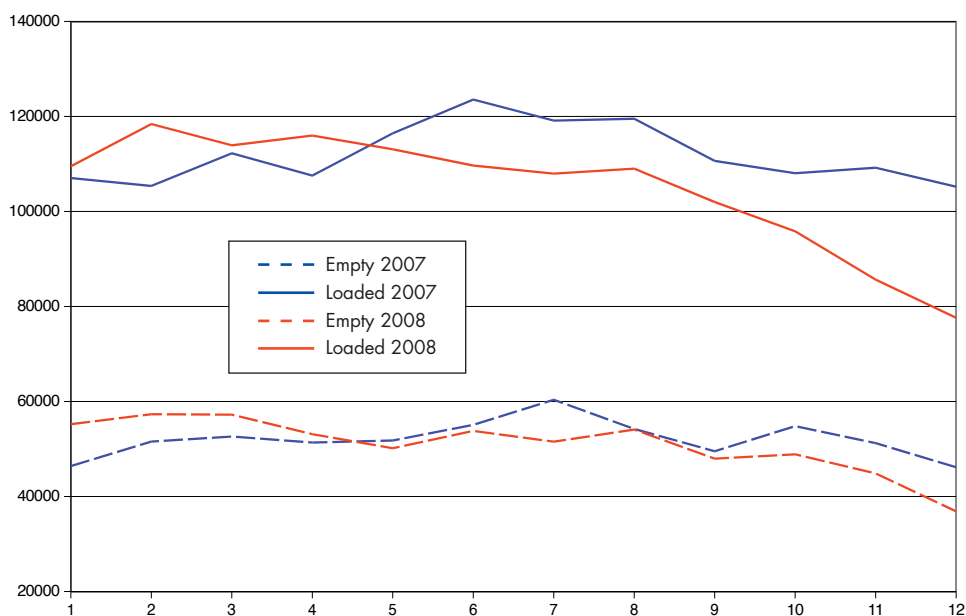


Source: Eurostat.

In view of the fact that machinery is to a large extent transported in containers, it is to be expected that the evolution in the transport of containers will follow the same lines as in the vehicles and machinery sector. The following table shows that the reduction in the transport of laden containers overall has matched the reduction in the transport of vehicles and machinery. More particularly, the decline worsened even more at the end of 2008. Over the full year in 2008, the number of laden containers transported was about 6.3% less than in the previous year.

In April 2009, a soft recovery from the demand of container transport could be noticed. First it occurred in the maritime transport. This could be a sign for a revival on this market. The deepest point for the demand of transport may so have been reached at the beginning of 2009.

Figure 12: Comparison of the transport of containers on the Rhine in 2007 and 2008



1 to 12 are month  
Source: Destatis.

## 2.6 Construction sector

The construction industry is, alongside the mineral oil and agricultural sectors, one of the areas that was scarcely affected negatively in terms of demand for transport by the economic crisis until the end of 2008. Over the year taken as a whole, the transport of stone, earth and building materials even achieved an increase of 1% compared with the previous year.



In addition, it is expected for the current year that the building industry should be able to take advantage of economic recovery packages that have already been agreed. The measures adopted in Germany to combat the economic crisis include infrastructure projects in the transport sector, with plans for maintenance and extension work in favour of transport on inland waterways, rail and road. Infrastructure projects of this kind are bound to boost demand for building materials, which will absorb the negative effects of the crisis. The initial results for January 2009 nevertheless indicate a substantial reduction for even the transport of stone, earth and building materials.

## **Summary 2**

Over the past eighteen months, demand for navigation on the Rhine has seen two separate developments. Up to September/October 2008, demand for transport remained very strong, but as soon as the appearance of an economic and financial crisis became evident, it started to fall off seriously. The drop was particularly obvious in market sectors such as ores and steel products, whereas other segments – such as the agricultural sector, for example – were spared by the crisis for some time. The oil sector even benefited from the crisis, as the weakening of the economy resulted in a drop in the price of oil products which in turn produced an increased demand for transport. The second most important segment of tanker transport, the transport of chemicals, was struck head-on by the collapse of industrial production, and suffered losses accordingly. The container segment saw a decline from spring 2008, when world trade began to slow down, and this continued until the start of 2009.

### 3. New vessel capacity on the market

The figures lead to the conclusion that 2008 was a record year in terms of building new vessels. For example, in the dry cargo transport sector 68 new self-propelled barges and 38 new ordinary barges were commissioned. Twice as many new vessels were built than in previous years. While the capacity of dry cargo transport increased by around 2.5% in 2008, according to estimates the volume transported was slightly down.

Again, 19 new self-propelled barges were commissioned in the first quarter of 2009. The average capacity of the newly built barges amounts to over 3600 tons, although four have a capacity of less than 2000 tons. It must also be noted that there is one "small" vessel with a capacity of 550 tons. This investment boom is being driven by the sustained high demand for transport in 2008.

The number of new tanker vessels (47) also doubled compared with previous years, with the theoretical transport capacity rising by almost 5%. According to estimates, the volumes transported were about 2% higher than in the previous year.

The average load capacity in the tanker transport sector amounted to 2800 tons. Contrary to the situation in dry cargo transport, 17 new vessels with a load capacity of less than 2000 tons were built. In the first quarter of 2009 6 new vessels were commissioned, which roughly corresponds to the 2007 rate.

Both markets have not yet been affected by the economic crisis. The vessels that were commissioned at the end of 2008 and the beginning of 2009 had been ordered one or two years beforehand. It is a well-known fact in the industry that, since the beginning of autumn 2008, numerous orders for new vessels were cancelled due to the unstable economic situation. An anticipated drop in the number of newly built vessels will not impact the figures until later in the year 2009.

However, it must be noted here that an important number of hulls are currently being built in Asia or being transported by sea to Europe, and will sooner or later be fitted and commissioned. These transport capacities will be added to the existing capacities.

At present there is surplus capacity on the market due to the extremely low demand for transport. This surplus capacity is due solely to the economic crisis and the slump in demand, and has given rise to a momentary disturbance of the market equilibrium.

At present it is impossible to determine when and how quickly the economy will recover. Whatever the case, it will be important at this point for inland navigation to defend its position on the market.

## 4. Passenger transport

2008 was a good year for passenger transport, not only in terms of day trips on boats but also in terms of cruise vessels. Thanks to generally good water conditions and high demand, vessels were in service throughout most of the year. The only downside of this positive trend was the fuel prices. Unlike the goods transport market, fluctuations in the cost of fuel for passenger transport cannot be passed on to guests. The increase of around 50% in the fuel costs over the entire year was fully borne by barge operators.

By and large, passenger transport has been less severely hit by the economic crisis than the transport of goods. The different market segments suffered to varying degrees depending on the country of origin of their customers, with the number of customers from the USA, Australia and Canada plummeting. Substantial price reductions were offered in order to retain these customers, which naturally had a negative impact on the profitability of barge operators.

Despite moderate price reductions (10 to 15%), demand from customers in France, Austria and Switzerland remained stable at a relatively high level. The number of customers from the UK fell sharply, similar to the trend with customers from North America. This drop was due to a combination of the recession and the strong decline in the value of the British pound versus the euro.

As far as capacity is concerned, 10 new barges were commissioned in 2008. Only 5 new vessels are expected in 2009, while the current estimate for 2010 is 3. These vessels are currently being built since – as is the case with goods transport - no investments have been initiated at present due to the current economic situation. American cruise operators have even withdrawn a few units from the market by selling them to third-party countries in the EU.

At present all ships are in normal operation, albeit with somewhat lower revenues. This trend is set to continue in 2010. Only in 2011 does the sector expect demand to rise.



## Section 2

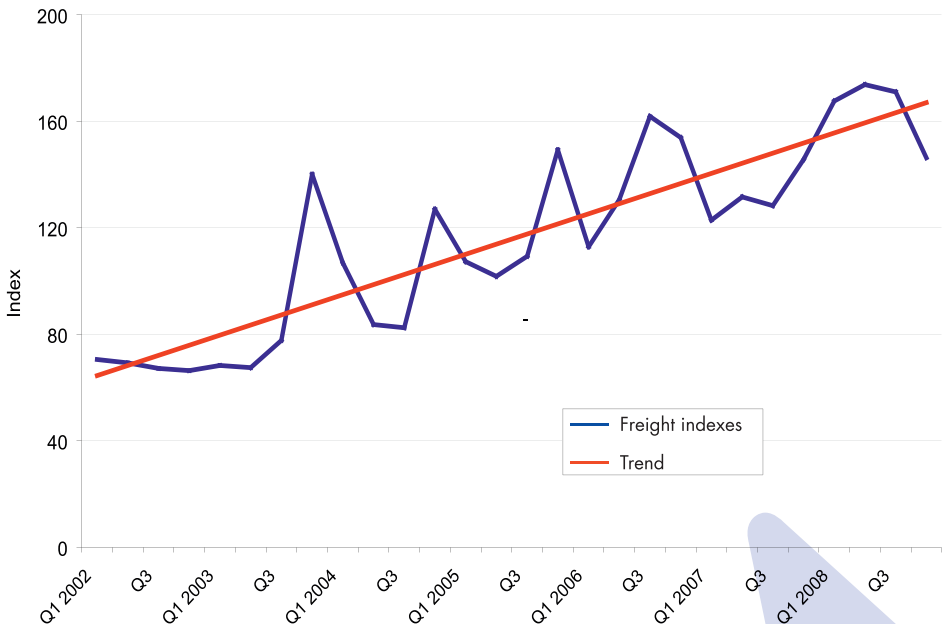
### Business view

#### 1. Trend in transport prices and volumes

##### 1.1 Transport of dry goods

As can be seen in the graph, freight rates showed a significant upward trend in recent years. In the first three quarters of 2008 they were well above the trend line due to the high demand for transport. In the last quarter of 2008 prices for the transport of dry goods fell significantly due to the slump in demand for transport as a result of the economic crisis. Although no figures are yet available for the first quarter of 2009, a continuation of the short-term downward trend is expected due to the lack of demand.

Figure 13: Price index for the transport of dry goods



Source: NEA; CCR Secretariat; Index 100 = average 2004

The following graph confirms this statement. It will be seen that in 2008, as well as in previous years, there was an upward trend in the volume of cargo transported which was suddenly reversed in the last quarter. It is now known that, at least on the Rhine and its tributary

waterways, the volumes transported continued to decline in the first few months of 2009.

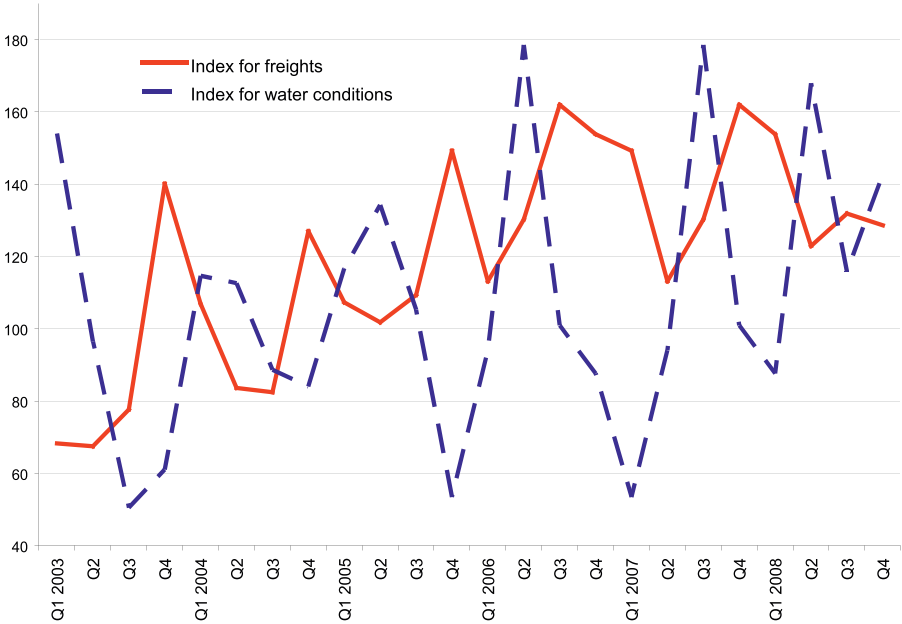
Figure 14: Index for transported volumes of dry cargo



Source: CCR Secretariat; Index 100 = average 2004

The following graph clearly shows the correlation between water conditions and the freight level for dry cargo. However, the decline in freight levels towards the end of 2008 is not attributable to rising water levels but to the general drop in demand for transport.

Figure 15: Indices for freight levels and water conditions for dry cargo

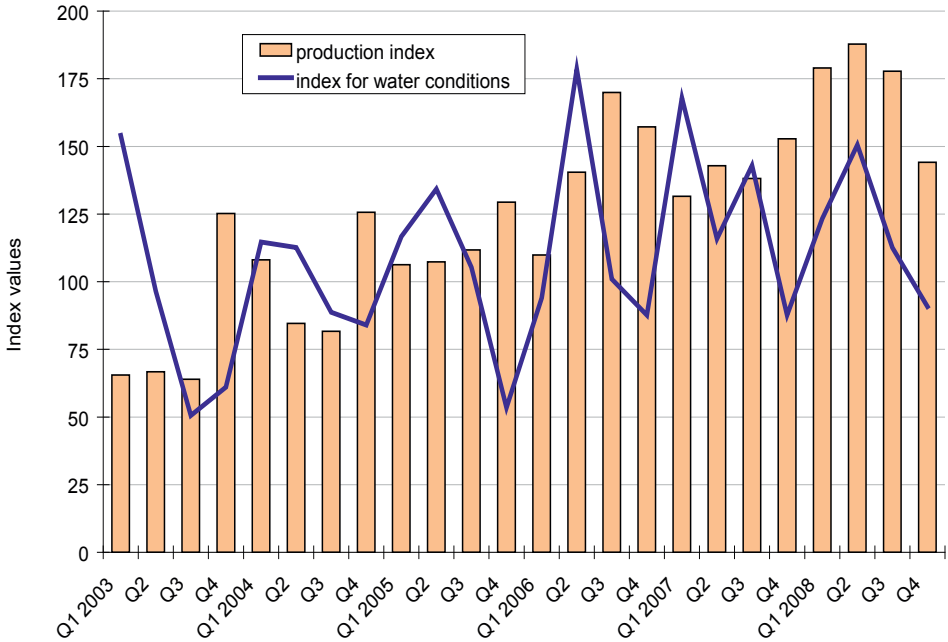


Source: CCR Secretariat; Index 100 = average 2004

With rising transport volumes resulting in relatively high freight levels despite good water conditions, profits were generally better in inland navigation in the first 9 months of 2008. The situation changed in the last quarter, with significantly lower demand driving down freight volume and reducing profits. This trend continued and became even more critical in the first months of 2009.

Overall, however, full-year profits for 2008 were higher than year-on-year.

Figure 16: Quarterly indices for water conditions and profits for dry cargo



Source: CCR Secretariat

## 1.2 Tanker transport

Tanker transport can be divided into two main segments: the transport of oil-based products which accounts for two-thirds of the volume transported, and the transport of chemicals which accounts for the remainder. These two sectors performed very differently in 2008, also in terms of freight level. Volumes and freight levels for the chemicals sector were very similar to those for the transport of dry cargo. The first nine months saw an increase in volume with high freight levels. In the last quarter, freight levels and the demand for transport fell due to the decline in chemical production.

Conversely, the oil sector market rallied only in autumn 2008. As the graph below shows, this was evident in the sharp rise in demand for transport and freight rates.

As is usual for transport in the oil sector, the market slowed down again at the beginning of 2009, with demand as well as freight returning to their normal levels.

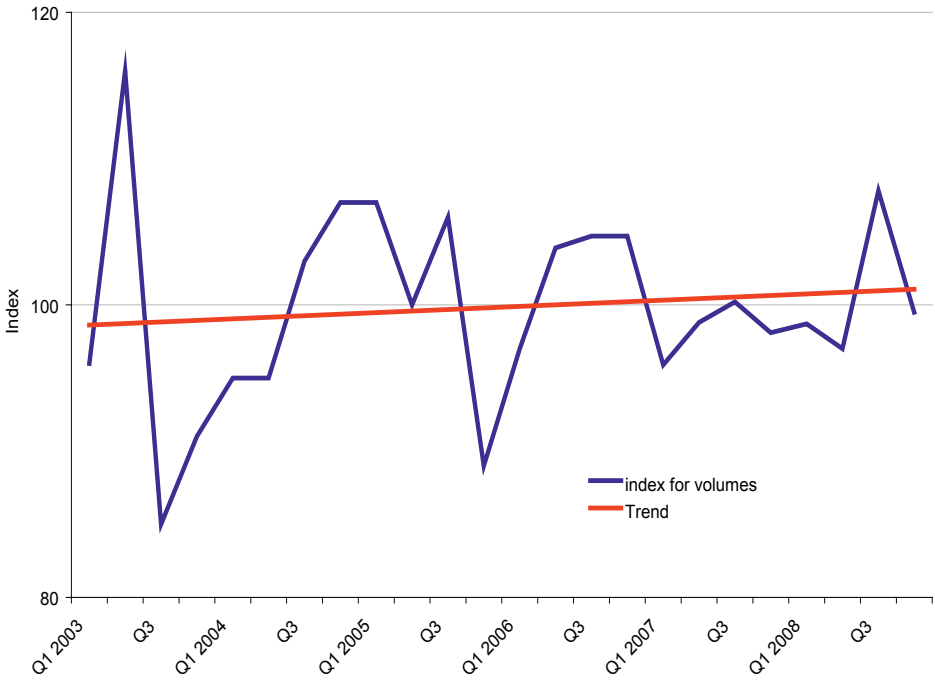


Figure 17: Index of transport prices for the tanker transport



Source: CCR Secretariat – NEA - P J K International b.v.; Index 100 = average 2004

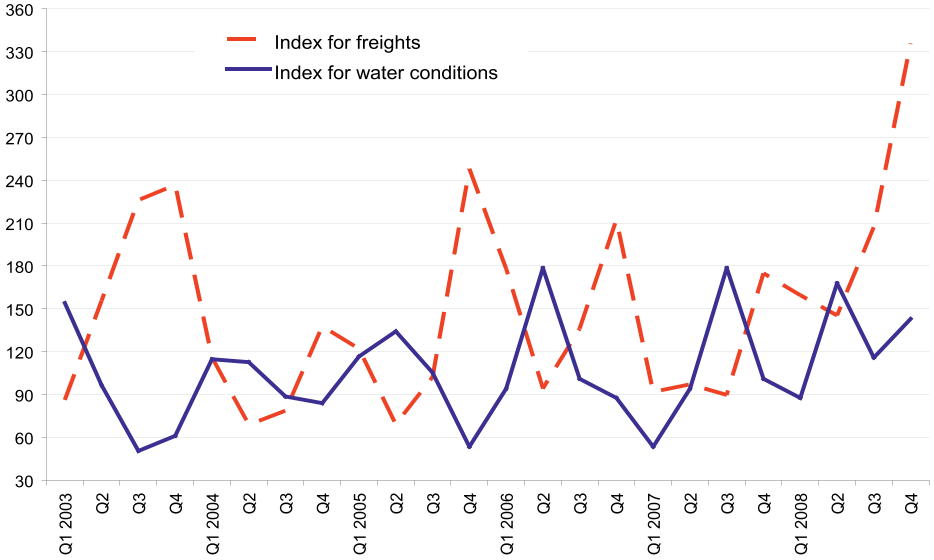
Figure 18: Index of transport volumes for the tanker transport



Source: CCR Secretariat; Index 100 = average 2004

The following figure shows that the general trend in freight rates for tanker transport ran counter to the trend for water conditions. Moreover, in the last quarter there was a strong increase in freight rates despite sufficient water conditions. This is attributable to the fact that all capacities had to be utilized last autumn in order to satisfy the sudden and strong rise in demand as a result of the slump in oil prices. This happened when stock levels were low following a long period of high or at times very high oil prices, prompting consumers to restrict the volume purchased only to the absolutely necessary.

Figure 19: Evolution of indices for freight levels and water conditions for tanker transport



Source: CCR Secretariat; Index 100 = average 2004

In the first three quarters of 2008, profits from the tanker transport of oil-based products were higher than in the previous year. In the last quarter, an exceptionally high rise was recorded due to sharp increases in the transport of oil-based products and high freight rates. Overall, full-year profits for 2008 were substantially higher than in previous years.

## 2. Trend in operating costs

### 2.1 Prices of vessels

In 2008 the prices for new vessel constructions were higher than in the previous year due to high steel prices and high demand for new vessels in the shipyards. Due to the general decline in investments and lower steel prices, the prices of vessels fell at the beginning of 2009.

### 2.2 General trend in operating costs

As a point of reference for assessing the general trend in operating costs and by agreement with trade experts, the following theoretical breakdown of operating costs was maintained:

Table 1: Comparison of costs for new self-propelled vessels

2004		Self-propelled vessels Individuals	Self-propelled tanker vessels Ship owners
<b>Costs of fuel</b>		20 %	18 %
<b>Costs of salaries and personnel</b>		40 %	42 %
<b>Other costs</b>	Interest	40 %	40 %
	Insurance		
	Maintenance		

Source: CCR Secretariat

In general, operating costs rose only slightly in 2008. Fuel costs and interest rates were exceptionally high in the first half year, but fell sharply in the second half year. The impact of fluctuations in gas oil costs must be viewed in perspective, due to the usual clauses in gas oil agreements. All other operating costs recorded a slight upward trend.

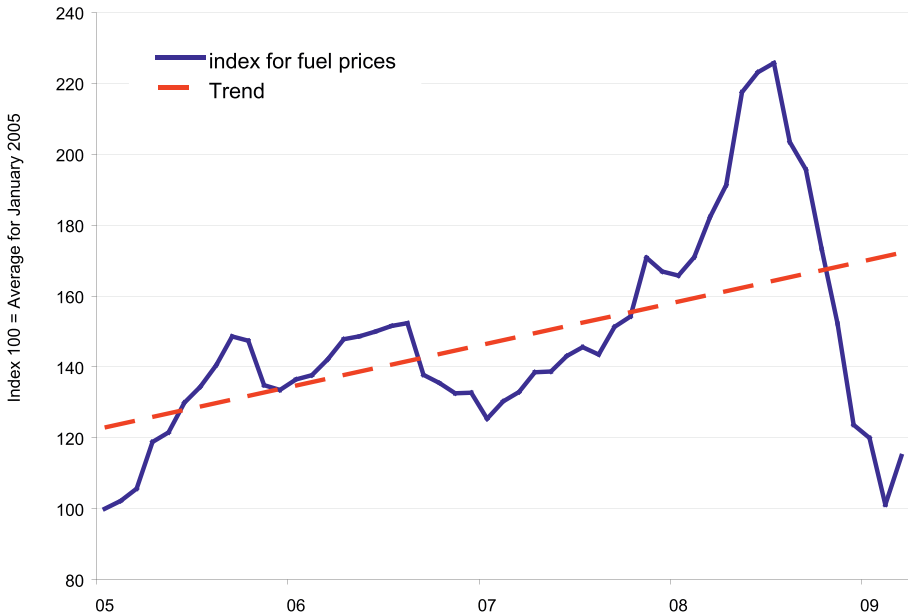
Indices	2003	2004	2005	2006	2007	2008
<b>Costs of fuel</b>	84	100	130	145	148	181
<b>Costs of salaries and personnel</b>	98	100	101	103	105	108
<b>Other costs</b>	100	100	100	132	170	163
<b>Global yearly index for costs for the transport of dry cargo</b>	<b>96,0</b>	<b>100,0</b>	<b>106,4</b>	<b>123,0</b>	<b>139,6</b>	<b>144,7</b>
<b>Global yearly index for costs for the tanker transport</b>	<b>94,3</b>	<b>98,0</b>	<b>103,8</b>	<b>120,1</b>	<b>136,6</b>	<b>141,1</b>

Source: CCR Secretariat

## 2.3 Costs of fuel

Fuel costs increased in line with oil prices on the global market, reaching a new record high in July 2008. From September onwards, a decline in oil prices on the global market was recorded. This had an immediate effect on fuel costs, which halved between July and December 2008. Nevertheless, over the full year the average for fuel prices was 28% higher than in 2007.

Figure 20: Evolution prices of fuel



Source: CBRB

### Average values<sup>1</sup>

Year	2002	2003	2004	2005	2006	2007	2008	2009
Price for 100 l in EUR	28,50	30,07	35,88	46,67	52,12	53,16	67,94	43,50

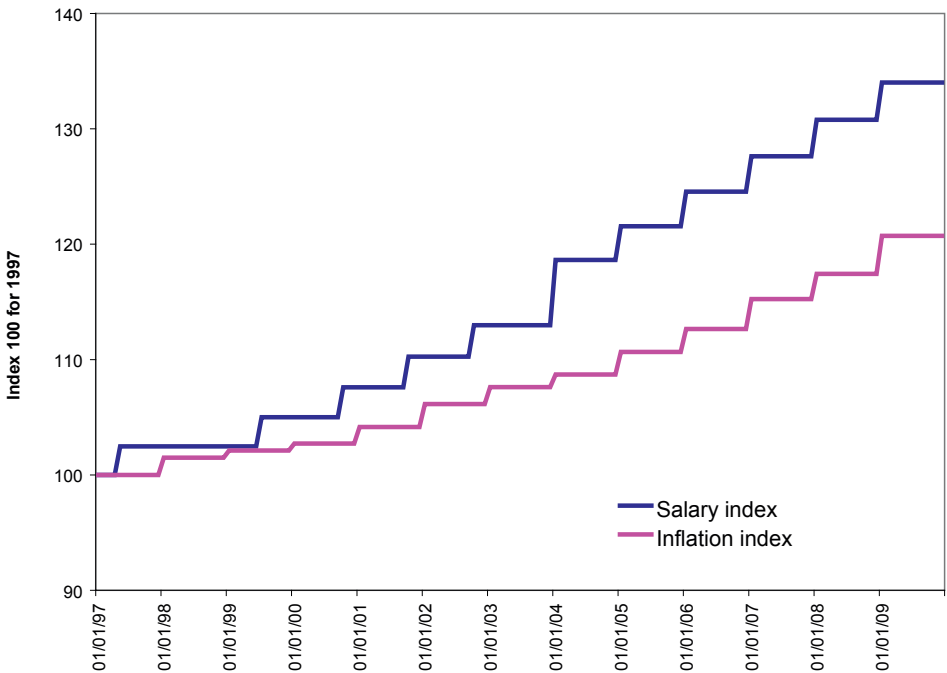
Source: CBRB

<sup>1</sup> NB : Indicative value

## 2.4 Costs of salaries and personnel

In 2008 the costs of salaries and personnel increased at the same rate as 2007. This increase corresponded approximately to the inflation rate. Until autumn 2008, high demand required the utilisation of all available vessel units. At the same time, difficulties in recruiting personnel led to pressure on labour costs. This was the case at least in the first three quarters of 2008. In the last few months of the 2008 and also the first months of 2009, the demand for labor weakened due to the significantly lower demand for transport.

Figure 21: Costs for personnel and inflation



Source: Arbeitgeberverband der Deutschen Binnenschifffahrt (German association of employers in transport of inland waterways)

## 2.5 Costs of maintenance

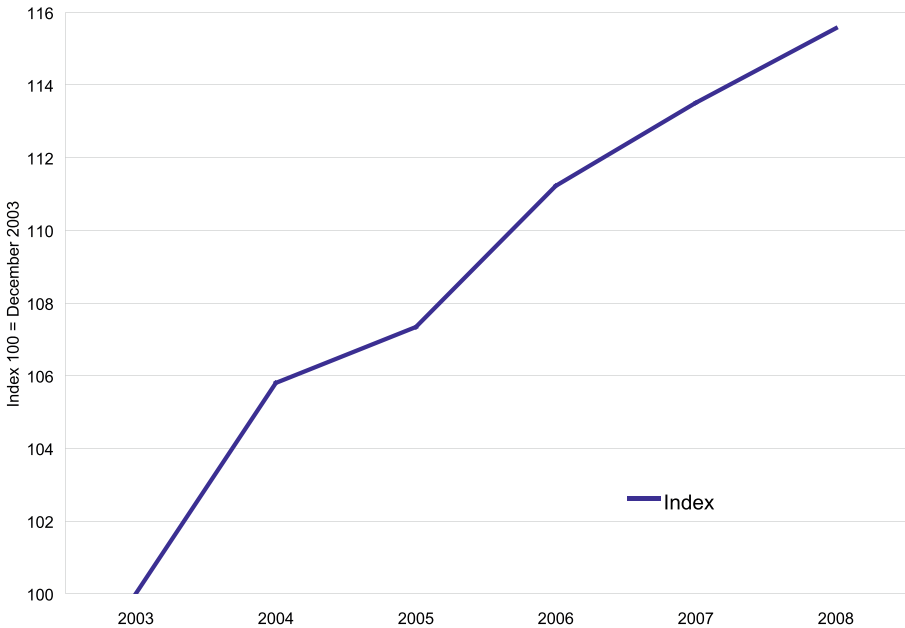
Maintenance costs continued to increase in 2008 due to high steel prices as well as high demand in the shipyards, whose order books were full over the entire year. As a result of the economic crisis, maintenance has been reduced to the absolute minimum, and the demand for maintenance has dropped sharply since the beginning of the year. Steel prices have also fallen, which impact the price of spare parts in the course of 2009.

NB: For the purpose of calculating this index, steel prices are weighted at 20% and labor costs at 80% in line with Belgian market conditions.

Date	Index
31/12/2003	100,00
31/12/2004	105,10
31/12/2005	107,30
31/12/2006	112,76
31/12/2007	113,51
31/12/2008	115,56

(Index 100 is the value at 31/12/2003)

Figure 22: Index of the costs of maintenance



Source: ITB

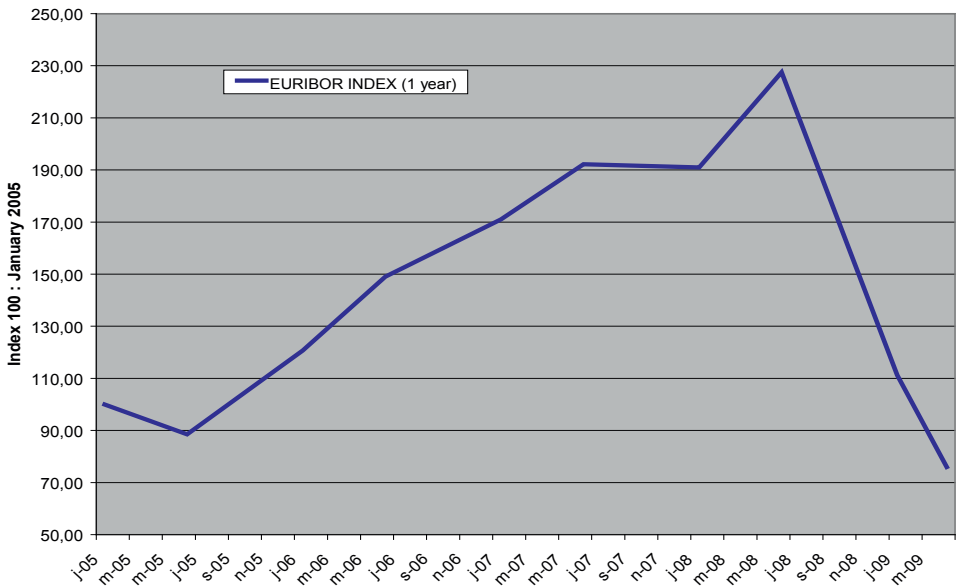
## 2.6 Financial charges

In mid-2008, after reaching a peak, there was a reversal of the trend in reference interest rates (EURIBOR) which has continued up to the present. Hence, reference interest rates have fallen by around 70% within the space of 12 months.

Starting in Autumn 2008, however, the banks became very reluctant to grant the loans required for investments, mainly because of their own capital structure and in accordance with the general practice during this economic crisis.

The extreme reduction in interest rates did not immediately lead to lower interest expenses. Furthermore, banks were urged to improve their own revenues and liquidity.

Figure 23: Index of interest charges: EURIBOR

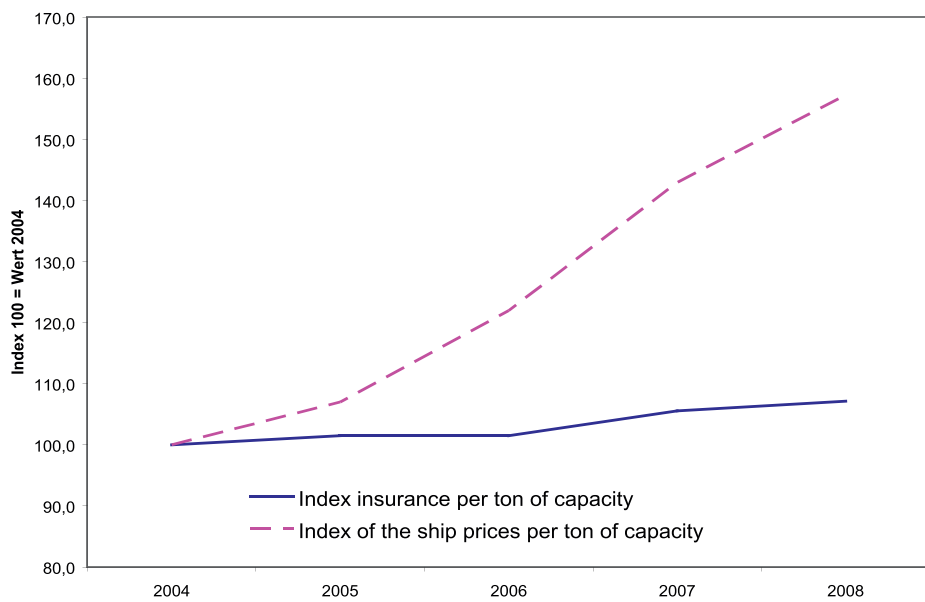


## 2.7 Insurance costs

While insurance premiums remained stable in 2008, it is worth noting that, as in previous years, there was a further rise in insurance costs, which depend not only on premiums but also on the insurance value of the vessel. The period before the crisis broke out saw a further rise in the price for new vessels from 5% to 10%. However, since the crisis is impacting the value of vessels, this effect may have been cancelled out at the beginning of 2009.



Figure 24: Insurance costs (insurance values and costs)



Source: CCR Secretariat



## Section 3

### Subject „Small vessels“

This is the first time that Market Observation has looked into the topic of small vessels. For practical reasons, the segment has been delimited in fairly general terms in order to describe the main characteristics of this market, such as size, specific features in terms of operation and new constructions. To follow up this thematic study, the evolution of this market will be described regularly in future, and the characteristics analysed in greater detail, thereby allowing the gradual acquisition of a good knowledge of this segment of the market.

#### 1. Introduction

This chapter presents an initial analysis of the fleet segment “Small vessels for inland navigation”. Taking into account important indicators – data on the fleet and transport statistics – trends in this segment as well as on the market are observed. The reason for this analysis (which will be recurrent) is a rapidly dwindling fleet segment: new vessels almost exclusively consist of large/larger vessels, while small vessels are being increasingly scrapped. It is therefore necessary to obtain objective information in order to show this trend with the aid of tables, but with no intention of expressing a politically motivated assessment. On the other hand, such information may well highlight the challenges and perspectives of this fleet segment.

#### 2. The segment „small vessels“

Besides the unique attribute of navigating on the smallest waterways, the typical characteristics of a small vessel are flexibility and the ability to provide transport for small freight. Short loading and unloading times result in a high handling rate. In principle, small vessels are capable of transporting anything; in practice, however, they are primarily used to transport agricultural products and construction materials. Salt, paper, coal and steel, as well as containers and waste are also transported on small vessels.

The Netherlands, Belgium, France and Germany, where over 50% of the entire waterway network consists of small waterways, has always been an important market for small vessels. As far as possible, therefore, this analysis will focus on these four countries. However, it must be noted that small vessels do not exclusively navigate on small waterways.

The small vessels segment must be defined and distinguished from other parts of the fleet. This may reveal major differences between the usual definitions in the countries concerned. According to the definition used in the trade, the small vessel class has a tonnage of up to 1500 tons and measures up to 86 meters in length. Within this category, several types of vessels with similar operating modes and ownership structures may be distinguished. Another way in which this category differs from the rest of the fleet is that only a few new vessels are being built and many outdated vessels are being scrapped.

Incidentally, special attention must be accorded to France. Here the small vessels segment is defined by the type „Freycinet“, i.e. so-called „Spits“ with a tonnage of 400 tons. With the exception of the French Rhine fleet, virtually all vessels belong to the category of small vessels described above with a tonnage up to 1500 tons. Due to the major importance of small vessels for the development of transport on the French waterway network, initiatives have been launched for the renewal of the fleet by developing modern units with the dimensions of the French „Spits“.

### 3. What are the reasons for describing this segment?

Although this segment of small vessels is only a minor factor in the transport system as a whole, it nevertheless serves a unique function for the logistics of companies along small waterways. Specific sectors such as construction and agriculture make intensive use of this segment. However, more and more small vessels are being withdrawn from the active transport market (scrapping, alternative use). Competition with overland transport (which is often more flexible) as well as with larger barges for inland transport – which, due to economies of scale, entails lower costs per unit of material transported – are driving structural changes on the market. The implications of this situation may be important for the fleet as a whole, the quality of the transport offered and, by extension, for freedom of choice on the part of the forwarding agents.

One of the special attributes of the small vessel is the ability to ensure transport during periods when water levels are low. The growth in scale over the past few decades has increased the vulnerability of the fleet for inland waterway transports at times of low water levels. Thus the small vessels segment serves two purposes: on the one hand it serves its own market which meets the needs of the smallest branches of the waterway network, and on the other hand it performs an overflow function for the larger vessels segment at times of low water levels.

As a result of the abolition of the rotation system<sup>2</sup> and the minimum rates at the end of the 1990s, supply and demand have once more become the driving market forces and operators are able to adapt to the forwarding agents' demand for transport. A supporting policy<sup>3</sup> has helped to reduce surplus capacity, and the fleet has been modernised. Transport has increased. At present, however, because of the pervasive lack of innovation and the changing dynamic of the segment each time newcomers enter the market, coupled with the fact that the response to changing demands is still too slow, this segment is unable to keep pace adequately with trends on the transport market. This gives rise to the threat of social and economic difficulties which, as a result of the aforementioned competition factors, could become even more severe. The segment must combat the fleet's sustained negative growth. Yet the key potential of this market segment is by no means exhausted: there are opportunities for this segment to sustain or even expand business. New markets are emerging (among others municipal transport, transport of waste and distribution), although this may require new impetus to be injected into forms of cooperation and technological innovation.

2 System in which demands for transport are distributed at fixed rates in the sequence in which vessels become available

3 Restructuring measures under Directive 1101/89 – 'Abwrackregelung' – and extended until 1999 by Directive 844/94 – ‚alt für neu‘

## 4. How can the segment be described?

Although small vessels navigate unhindered on large waterways or in the vicinity of ports and in so doing enter bigger markets, this segment can be clearly differentiated from other market segments in the transport on inland waterways. The data on the fleet (all vessels < 1500 tons) and the demand for transport (batch size < 1500 tons), together with related information, provide a sufficient basis for an initial analysis predicated on the basis of the two pillars of the market system: supply and demand. The main characteristic of the fleet is a long response time: over the long term, a change in the structure of demand will have an impact on transport supply.

The following is a description of the active fleet < 1500 tons, including if necessary the relevant sub-segments (see Section I.). Regarding demand, transported volumes of less than 1500 tons are described (see Section II.), with the available sources constituting a limiting factor. Data on the fleet refer to self-propelled barges for dry cargo (ordinary barges exclusively). In the data on transport, no explicit distinction is made between the transport of dry cargo and the transport of liquid cargo. However, it must be noted that small vessels are mainly used for the transport of dry cargo (approx. 80% in the Netherlands in 2006).

## 5. Quantitative Description

### I) Data of the fleet

The following is a description of the fleet of small vessels based on tonnage. The terms „small vessels“ or even only „vessels“ refer to all vessels with a tonnage of < 1500 tons.

### Waterway network and navigated distances

The following table shows the total length of the waterway network in each country. In all countries described, the network of smaller waterways is relatively scattered in geographical terms. Thus, smaller waterways form a limited international network. Nevertheless, it is possible to establish fairly long transport relationships on smaller waterways, including cross-border transport, although the emphasis seems to be on somewhat shorter distances and hence on national and regional transport relationships. In 2006, for instance, the average distance covered by small vessels in the Netherlands amounted to 124 kilometers, while the distance covered in France was 132 kilometers.<sup>4</sup>

<sup>4</sup> Calculated on the basis of the volumes transported rather than size of vessels

Table 2: Length of waterways

CEMT Classification	Netherlands		Germany		Belgium		France	
	km	%	km	%	km	%	km	%
<b>I (Spits)</b>	1156	23	707	11	348	23	1896	22
<b>II (Kempenaar)</b>	409	8	247	4	248	16	3909	46
<b>IIa (Hagenaar)</b>	842	17	-	-	-	-	266	3
<b>III</b>	212	4	659	10	-	-	414	5
<b>IV</b>	636	13	1499	24	520	34	86	1
<b>V</b>	1095	22	2173	34	142	9	296	3
<b>VI</b>	665	13	1106	17	282	17	1606	19
<b>Total</b>	5015		6391		1540		8473	

Source: RWS-AVV 1999

## Composition of the fleet per country

The following table shows the composition of the fleet per country, indicating the contingent of small vessels and large vessels as well as the percentage of small vessels. The table shows that in 2007, in absolute figures, the largest segment of small vessels was operating in the Netherlands followed by Belgium, France and Germany. At 97%, the percentage of the entire fleet accounted by small vessels is the highest in France. The French fleet is composed mainly of small and very small vessels, with the strongest category in the range between 250 and 399 tons (the French „Spits“ fall into this category, with at least 500 units in 2007). The fleet and the infrastructure are therefore two sides of the same coin. The German fleet also follows the same pattern, with vessels in the class between 1000 and 1500 tons accounting for maximum tonnage; these vessels mainly belong to the first generation of self-propelled barges on the Rhine. In the Netherlands and in Belgium, the fleet of small vessels is more evenly distributed among all classes of vessels between the two extremes.

Table 3: Composition of the fleet in 2007

	< 1500 t	> 1500 t	% small ships
<b>France</b>	842	25	97
<b>Germany</b>	649	230	73
<b>Netherlands</b>	2285	701	74
<b>Belgium</b>	989	204	83

Source: Estimates of the CCR Secretariat

The following table shows the relative weight of the small vessels segment according to number and tonnage in relation to the entire fleet. Small vessels are defined here as those of < 1500 tons; if the criterion < 86 meters" is applied, comparable results can be obtained.

Table 4: Composition of the "small vessels" fleet in 2007, including tonnage

	Number	%	Tonnage (t)	% total fleet
<b>France</b>	842	97	454.327	90
<b>Germany</b>	649	73	621.146	57
<b>Netherlands</b>	2285	74	1.776.010	51
<b>Belgium</b>	989	83	671.622	58

Source: Estimates of the CCR Secretariat

## Development of the small vessels fleet

For some time now, there has been a pronounced decline in the number of vessels that make up the small vessels fleet (see table). More precisely, between 2000 and 2007 the number of vessels in all four countries decreased by 1038 units or 18%. On the other hand, a strong increase in tonnage > 1500 tons was recorded (285 new vessels, +33%). The most important decline in vessel numbers occurred in France, where a drop of as much as 40% was recorded in the important „Spits" subcategory (250 – 399 tons) within 7 years.

A closer look at the decrease in tonnage in the small vessels segment between 2000 and 2007 reveals that this decline in the four countries amounts to an average of 14% (not shown in the table). On the other hand, volume in the category > 1500 tons increased by 46%. Accordingly, not only the reduction in the relative contingent but also the absolute negative growth in the small vessels segment of small vessels are of structural origin.

Table 5: Number of vessels < 1500 tons

	2000	2003	2007	% 2007 / 2000
<b>France</b>	1118	1129	842	-25
<b>Germany</b>	822	746	649	-21
<b>Netherlands</b>	2840	2509	2285	-20
<b>Belgium</b>	1023	924	989	-3

Source: Estimates of the CCR Secretariat

Although irrelevant from a statistical standpoint, it is interesting to note that, over the study period, modest attempts have been made to re-invest in this segment. For example, as mentioned above, an initiative was launched in France to develop a modern version of the „Spits" type „Freycinet", and the „Neo Kemp" was commissioned in the Netherlands some

years ago. Activities related to new constructions will be treated in more detail in subsequent publications.

## II) Demand for transport in the „small vessels“ segment

This section describes the transport contingent between 2000 and 2007.

### Goods transported

The highest demand for small vessels originates in the agricultural sector (supply of cattle food and shipping of crops between sea ports and agricultural regions) and construction sector (shipments to depots as well as structural transports from areas that supply sand, gravel and cement). Good accessibility and freight volumes that match the vessel's capacity are key factors impacting small vessels' share of the market for this type of transport.

Small vessels transported 115 million tons (14.3 billion tkm) on Dutch territory, i.e. including (international) navigation on the Rhine, in 2006, thus accounting for 33% of total transport performance. Building materials comprise the predominant group of goods (41% of the volume transported, NSTR category 6), followed by agricultural products (20%, NSTR category 0.1 and 7) and (parcel) goods (15%, NSTR category 9). The average capacity of small vessels in the Netherlands is estimated to be 775 tons. Excluding chemical goods and parcel goods, which are normally transported in boxed form and thus have a fairly low density, the average volume transported by small vessels in the Netherlands in 2006 was 719 tons. The average lot volume transported in 2006 amounted to 805 tons for construction materials and 692 tons for agricultural products.

2003 was especially important, characterized as it was by low water levels. In 2003 small vessels transported a volume of 159 million tons and their transport performance amounted to 21.5 billion tkm (54% in ton-kilometers). The average volume transported by small vessels in 2003 (excluding chemical goods and parcel goods) was 774 tons.

Source: Calculations of the CCR Secretariat on the basis of CBS data

In France, small vessels transported 50 million tons (6.6 billion tkm or 71% of the entire freight carrying capacity, and 89% of all trips) in 2007, with the emphasis on construction materials (44% in tons) and agricultural products (22%).

The smaller the vessel, the clearer the picture.

In particular, the percentage of construction materials is even higher on vessels of around 500 tons, and NSTR category 9 (vehicles, machinery and other goods) is then revealed to be 20%.

The estimated average capacity of small vessels in France is 525 tons. The average volume transported by vessels < 1500 tons amounted to 496 tons, taking all trips in 2007 as the starting point. Shipments of agricultural products and construction materials also approached these average freight volumes (i.e. 546 tons and 520 tons respectively), but shipments of coal and ore were on average substantially higher, and shipments of machinery, parcel goods and similar goods were considerably lower. Excluding parcel goods and chemicals (to enable comparison with the Netherlands), the average freight volume on small vessels in France



amounted to 578 tons in 2007. In 2003 the volume transported was on a par with 2007 but transport performance was higher (see cont.).

Source: Calculations of the CCR Secretariat on the basis of VNF data

### **Seasonal influences**

The volume transported on small vessels over the year does not fluctuate depending on the month. From the data available, no structural seasonal difference can be seen per goods category apart from a slight decline in agricultural products in winter months, accompanied by a slight increase in fuel transports.

However, the water level – certainly in particular years – is crucial, as witnessed in the summer of 2003 with its exceptionally low water levels. In the second half of the year, this situation led to a growing volume for small vessels in France and an increase in their transport performance, at the cost of larger vessels. In the Netherlands this effect was even more pronounced, albeit over a shorter period of time (see figures). This ability to react flexibly in times of scarcity illustrates the potential described above.

## Seasonal influences on transport with small and large vessels

Figure 25: Volumes and performance 2003 in France

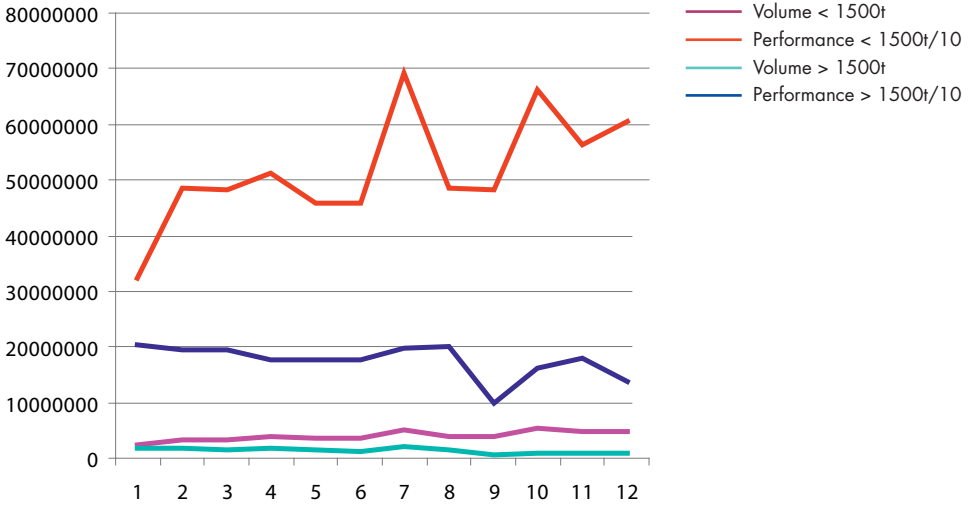
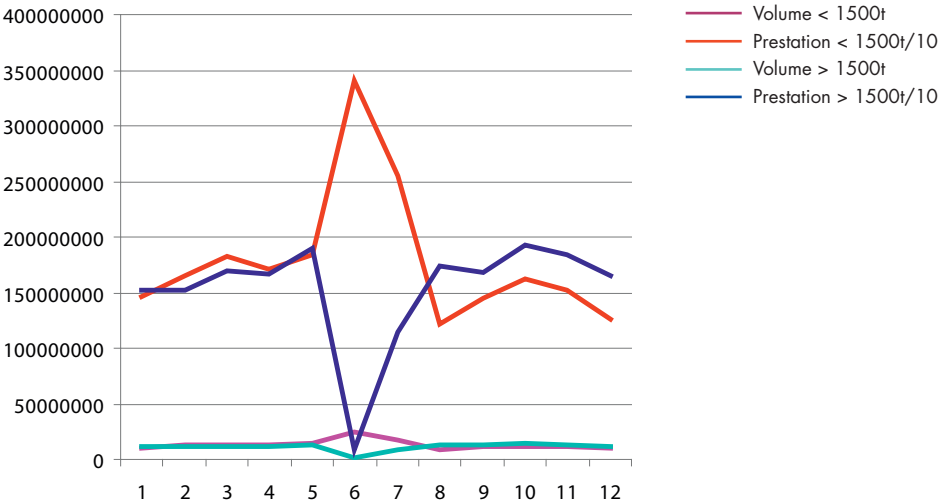


Figure 26: Volumes and performance 2003 in the Netherlands



Source: Calculations of the CCR Secretariat on the basis of CBS and VFN data

## Synopsis

During 2007 and in the first three quarters of 2008, the economic situation was very favorable for European inland navigation. With the exception of the oil sector, all sectors registered high demand for transport at optimal water conditions. Most of the time freight levels were high due to strong demand. This positive economic situation, which had been sustained for several years, prompted an investment boom, and in 2008 a new record was reached with over 100 new self-propelled barges – all large units – commissioned.

At the end of the summer of 2008 the first effects of the economic crisis started to make themselves felt on European inland navigation. While different branches of the industry were hit at different times, by the end of 2008 it had become clear from the volumes transported that, with the exception of the oil and agricultural sectors, all other sectors were suffering a decline. At the end of 2008 and in the first few months of 2009, the slump in the demand for transport despite good water conditions led to a sharp downturn in freight.

Despite a slight recovery in container transports and in the production of chemicals in the course of the spring, the end of the crisis is not yet in sight.

In recent years, many new and highly productive vessels have been commissioned. Over the same period, much fewer small vessels – and smaller units only – were withdrawn from market. This has resulted in a marked increase in transport capacity on the market. In the short term and given the extremely low demand for transport at present, it is fair to say that a serious surplus of capacity for dry cargo transport is emerging due to the economic situation. The result is low freight levels, which often do not generate enough revenue to cover the vessel operating costs. Under these circumstances, several barge operators have been forced to decommission their vessels temporarily due to lack of transport orders.

The veritable boom in investment in virtually every segment of the fleet has given rise to relatively high debt burdens in parts of the trade. If the crisis persists, substantially lower revenues in the entire dry cargo segment will cause problems for operators who finance their investments through third parties. Given this outlook, the national trade organisation came to a global agreement governing loan repayments with the banks involved.

The withdrawal of several barge operators could easily have a structural impact on the market and must be prevented in order to maintain the capability of inland navigation when the crisis is over, at which time demand for transport will have recovered so that it can command the position it deserves among other modes of transport.



# APPENDICES

## Appendix 1

### Situation of newly built vessels at the end of May 2009

Type of vessel	2002			2003			2004		
	Number	Tonnage	kW	Number	Tonnage	kW	Number	Tonnage	kW
<b>Self-propelled barges</b>	45	113114	56138	34	89676	41894	28	71326	34400
<b>Ordinary barges</b>	29	37180		28	78156		14	23636	
<b>total</b>	<b>74</b>	<b>150294</b>	<b>56138</b>	<b>62</b>	<b>167832</b>	<b>41894</b>	<b>42</b>	<b>94962</b>	<b>34400</b>
<b>Self-propelled tanker barges</b>	22	65548	30547	45	131455	50332	54	139718	61236
<b>Ordinary tanker barges</b>	2	178		1	1800		3	2427	
<b>total</b>	<b>24</b>	<b>65726</b>	<b>30547</b>	<b>46</b>	<b>133255</b>	<b>50332</b>	<b>57</b>	<b>142145</b>	<b>61236</b>
Pusher tugs	2		1276	0		0	1		992
Tugs	3		11670	1		279	1		177
<b>total</b>	<b>5</b>		<b>12946</b>	<b>1</b>		<b>279</b>	<b>2</b>		<b>1169</b>
<b>Cruise vessels</b>	17		13251	10		7238	5		4021
<b>Excursion vessels</b>	9		4834	1		1566	1		662
<b>total</b>	<b>26</b>		<b>18085</b>	<b>11</b>		<b>8804</b>	<b>6</b>		<b>4683</b>

Type of vessel	2005			2006			2007		
	Number	Tonnage	kW	Number	Tonnage	kW	Number	Tonnage	kW
<b>Self-propelled barges</b>	34	87645	27490	33	93985	26637	35	111655	31460
<b>Ordinary barges</b>	12	11401		18	18385		29	54336	
<b>total</b>	<b>46</b>	<b>99046</b>	<b>27490</b>	<b>51</b>	<b>112370</b>	<b>26637</b>	<b>64</b>	<b>165991</b>	<b>31460</b>
<b>Self-propelled tanker barges</b>	46	130860	43736	28	77565	24637	23	50333	16534
<b>Ordinary tanker barges</b>	2	2527		0	0	0	0	0	0
<b>total</b>	<b>48</b>	<b>133387</b>	<b>43736</b>	<b>28</b>	<b>77565</b>	<b>24637</b>	<b>23</b>	<b>50333</b>	<b>16534</b>
Pusher tugs	0		0	0		0	1		0
Tugs	0		0	0		0	0		0
<b>total</b>	<b>0</b>		<b>0</b>	<b>0</b>		<b>0</b>	<b>1</b>		<b>0</b>
<b>Cruise vessels</b>	5		6280	4	1644	3186	2		1816
<b>Excursion vessels</b>	5		2832	2	1959	2244	1		1570
<b>total</b>	<b>10</b>		<b>9112</b>	<b>6</b>		<b>5430</b>	<b>3</b>		<b>3386</b>

Type of vessel	2008			2009 (5 months)					
	Number	Tonnage	kW	Number	Tonnage	kW			
<b>Self-propelled barges</b>	68	226750	92944	18	54968	25540			
<b>Ordinary barges</b>	38	70260		1	2301				
<b>total</b>	<b>106</b>	<b>297010</b>	<b>92944</b>	<b>19</b>	<b>57269</b>	<b>25540</b>			
<b>Self-propelled tanker barges</b>	47	117500	31870	11	18453	7441			
<b>Ordinary tanker barges</b>	0	0		0	0				
<b>total</b>	<b>47</b>	<b>117500</b>	<b>31870</b>	<b>11</b>	<b>18453</b>	<b>7441</b>			
Pusher tugs	3		1684	1					
Tugs	3		0	0		0			
<b>total</b>	<b>6</b>		<b>1684</b>	<b>1</b>		<b>0</b>			
<b>Cruise vessels</b>	3		5092	4		2988			
<b>Excursion vessels</b>	6		3092						
<b>total</b>	<b>9</b>		<b>8184</b>	<b>4</b>		<b>2988</b>			

Source: IVR and CCR Secretariat

## Glossary

**ARA ports:** Abbreviation for the three major European ports of Amsterdam, Rotterdam and Antwerp.

**Downstream navigation:** navigation downriver

**Downstream:** Refers to the part of an inland waterway located between a given point and the embouchure or confluence.

**Draught:** Height of the immersed part of a vessel; thus draught affects the loading level.

**Dry hold:** Used for the transport of dry cargo.

**Econometric ratio:** Estimated ratio between two or more values (e.g. production of steel, transport on inland waterways, imports of coal, etc.) on the basis of statistical data, using electronic calculation procedures. This estimate is used in making forecasts.

**Electric steel:** Electric steel is produced by melting down scrap metal using electric arc technology.

**Freight:** Refers to goods being transported or the price of transport.

**Handling:** Transshipment of goods from one means of transport to another.

**Hold:** Compartment covering the larger part of a commercial vessel, for the storage of cargo to be transported.

**Inland navigation/inland waterways transport:** Transport of goods or persons on board a vessel intended for transport on a given network of inland waterways.

**Inland waterway:** Navigable inland waterways that may be used with a normal load by vessels with a minimum deadweight of 50 tonnes. Inland waterways include navigable rivers, lakes and canals.

**Offer of transport or of capacity:** Total loading capacity of the available fleet, expressed in tonnes.

**Oxygen steel:** Steel produced from iron ore and coal using blast-furnace technology, passing through a number of stages (injection of oxygen, etc).

**Production/yield:** The notion of production/yield as used in this publication is intended to define in index form the activity of inland waterways transport, taking into account a given level of demand and the freight rates applied on the market.

**River/sea transport:** Transport of goods on board a river/sea vessel (seagoing vessel designed for use on inland waterways), carried out entirely or partly on the inland waterways network.



**Service:** Refers to the service of the transport of goods, expressed in tonnes/kilometre.

**Tanker hold:** Used for the transport of cargo in tankers.

**Tonnes/kilometre(Tkm):** Unit of measurement for transport services, corresponding to the transport of one tonne over one kilometre of an inland waterway. Determined by multiplying the volume carried in tonnes by the distance travelled in kilometres.

**Transshipment:** Unloading of a cargo from one seagoing freight vessel and loading onto another seagoing freight vessel, even if the cargo has remained on land for any length of time before the transport continues.

**Twenty-foot Equivalent Units(TEUs):** Unit of measurement for registering containers according to their dimensions and for the description of the capacity of container vessels and terminals. One ISO 20-foot container (20 feet long and 8 feet wide) corresponds to 1 TEU.

**Upstream navigation:** Navigation travelling upstream.

**Upstream:** Refers to the part of an inland waterway located between a given point and the source.

**Water conditions:** Height of the water in a river or canal, in cm.

## Sources of information

### International organisations

Eurostat  
ECMT / ITF  
Danube Commission  
Moselle Commission

### National authorities

Statistisches Bundesamt (Germany)  
Staatistikamt Nord (Deutschland / Hamburg)  
WSD Süd-West (Germany)  
WSD-OST (Germany)  
Bundesanstalt für Gewässerkunde (Germany)  
Bundesamt für Güterverkehr (Germany)  
CBS, Centraal Bureau voor de Statistiek (Netherlands)  
Voies Navigables de France - VNF (France)  
Statistics Austria (Austria)  
Via Donau (Austria)  
Institut National Statistique (Belgium)  
Ministry of Mobility and Transport (Belgium)

### Private organisations

Arbeitgeberverband der Deutschen Binnenschifffahrt (ADB)  
Institut pour le Transport par Batellerie (ITB)  
NEA Consulting  
P J K International b. v.  
IG River Advice, Basle  
Planco

### Inland navigation organisations

IVR  
CBRB  
EBU  
ESO  
VBW  
ITB

### Industrial organisations

Mineralölwirtschaftsverband (MWV)  
BDI  
CEFIC  
Eurofer (European Confederation of Iron and Steel Industries)  
Fédération Française de l'Acier  
Fertilizer Industrie Union  
Hauptverband der deutschen Bauindustrie  
International Iron and Steel Institute

Verein der deutschen Kohleimporteure (VDKI)  
Verband Chemische Industrie (VCI)  
Wirtschaftsvereinigung Stahl

### **Ports**

Antwerp  
Rotterdam  
Amsterdam  
Hamburg  
Ghent  
Bremen  
Zeebrugge  
Le Havre  
Wilhelmshafen  
Dunkerque

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