

# Survey on International Merchandise Transport

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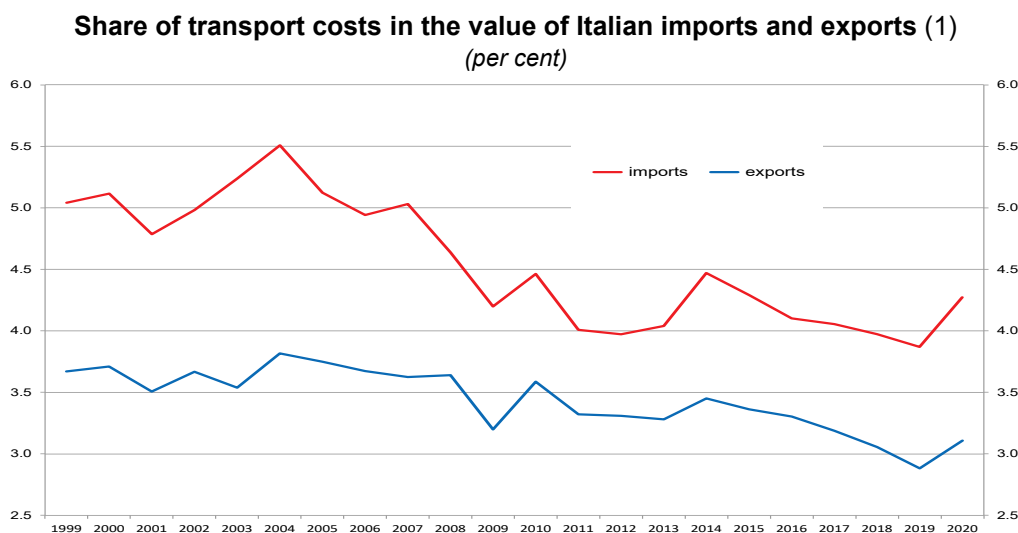
## Main findings

The Bank of Italy's Survey on International Merchandise Transport in 2020 shows that the pandemic had a significant impact on unit costs in the sector, which continued full operations even in the worst phases of the health emergency. The share of transport costs in the value of Italy's merchandise imports and exports increased overall, to 4.3 and 3.1 per cent respectively from 3.9 and 2.9 per cent in 2019, interrupting the downward trend of the previous years (Figure 1).

The air freight sector suffered markedly from the drastic reduction in scheduled flights, and therefore in belly cargo for merchandise transport. The limited supply of belly cargo was reflected in a sharp rise in freight rates. Significant increases in sea freight prices were observed in the container sector (in particular in routes from China and other Asian countries), in the transport of motor vehicles (Ro-Ro) and in liquid bulk freight, whereas dry bulk freight declined because of lower demand for commodities. In land transport, average costs per tonne increased slightly in the rail sector, while they decreased slightly in the road sector, despite the rise in costs for operators due to greater difficulties in dispatching (such as longer delivery times). The United Kingdom saw an increase in freight rates before the entry into force of the new Trade and Cooperation Agreement with the EU.

Against a backdrop of generally stable market shares for Italian carriers and a contraction in volumes transported, the average increase in freight rates led to a worsening of the merchandise transport deficit in Italy's balance of payments (-€6.8 billion, from -€5.9 in 2019), concentrated in the air and maritime sectors. The reduction in Italian ship operators' cross-trade also contributed to the deficit.

Figure 1



Source: Based on data from Istat, Alps Crossing, Eurostat, and ENAC.

(1) Excludes goods transported via pipeline (natural gas imports). Provisional data for 2020; the costs include ancillary and logistical services linked to international freight transport, as well as any road transport costs supporting other modes of transport (container ships, bulk and container rail transport).

## Introduction<sup>1</sup>

Since 1999, the Bank of Italy has conducted sample surveys of international freight transport operators to collect the data needed to compile the balance of payments. The survey's main purpose is to estimate the unit cost of freight to and from Italy by mode of transport; carriers' market shares by nationality are also estimated. The tonnage of imports and exports is based on Istat data on Italy's foreign trade.<sup>2</sup> Based on this information, the volume of goods transported by foreign and Italian carriers is calculated. Multiplying the freight costs by the volume of goods transported produces an estimate of the transport services purchased or sold abroad. The estimate also includes some other items: transport within Italy by non-resident shipowners (cabotage) and, more importantly, cross-trade by domestic carriers.<sup>3</sup>

The 2020 survey involved 212 firms operating in Italy and collected data on 6,125 'standard consignments'.<sup>4</sup> The next section illustrates the main findings by mode of transport and by area of origin/destination of the merchandise. Freight rates are given at market prices in euros per tonne and include ancillary transport costs (cargo handling, motorway tolls, carrier fees, etc.), for which the data are also gathered in interviews with transport operators. In specific cases, the prices are given in the trading currency (the dollar is widely used for sea transport) or net of ancillary services. The average freight rates by mode of transport are calculated as the average of the tariffs by area of origin/destination, weighted by volumes transported; accordingly, the trends over time also reflect the geographical composition of the volumes transported. Finally, for some modes of transport, the market prices relate not to the weight but to the unit (e.g. a container) or to the overall load. In this way, the cost per tonne can vary according to the average volumes transported.

## International freight rates

### Road freight rates

#### **Road freight rates decline, despite the difficulties caused by the pandemic**

In 2020, against a backdrop of a fall in volumes transported (Table A.1 in the Appendix), average costs declined for both full and partial loads (Table 1). The problems connected with the pandemic – delays, lengthy control procedures, empty return trips due to very uneven flows geographically – did not affect freight rates but were reflected instead in operators' profit margins. The reduction in transport costs was seen in all geographical areas except in the United Kingdom, where freight rates increased significantly at

the end of the year, due to accelerated trade before the entry into force of the new Trade and Cooperation Agreement with the European Union.

In real terms, i.e. relative to the producer price index for exports (PPIX) and for imports (PPIM), average import road freight rates per tonne increased slightly to reach levels close to the peak for the last twenty years and export rates remained basically unchanged (Figure 2).

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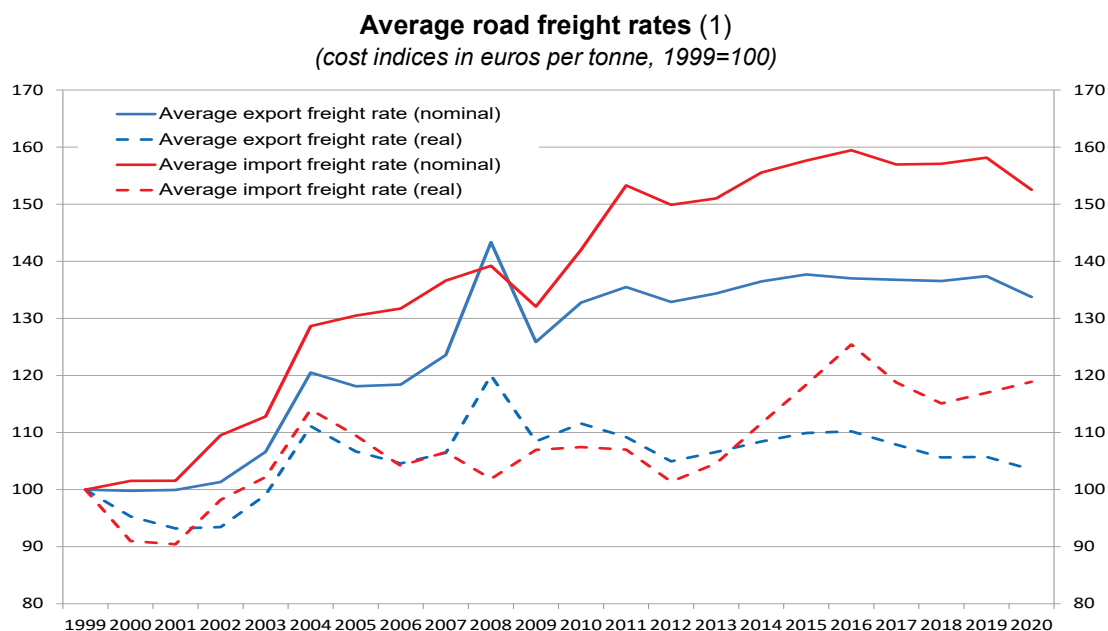
<sup>1</sup> This report and the statistical appendix were prepared by Enrico Tosti.

<sup>2</sup> The findings of the survey are also used to adjust the breakdown by mode of transport of foreign trade flows, which, owing to their calculation method, tend to overestimate road haulage to the detriment of other modes of transport, especially rail freight. In fact, reporting importers/exporters tend to identify the mode of transport on the basis of the one used as the first and/or last link in the chain, i.e. the road truck, which often only performs the feeder service. The data can be found in the Statistical Appendix to this report. The method of correction is described in a separate document; see [Methods and Sources: Methodological Notes](#).

<sup>3</sup> For more details on Italian ship operators' cross-trade, see the note published on the Bank of Italy's website: <http://www.bancaditalia.it/statistiche/tematiche/rapporti-estero/trasporti-internazionali/armatori.pdf> (only in Italian).

<sup>4</sup> For the definition of standard consignments, see [Methods and Sources: Methodological Notes](#). Freight rates are surveyed on a quarterly basis for bulk and container ships, half-yearly for air cargo, and annually for road/rail freight and any other types of sea transport. For the sake of brevity, only the annual averages are given (the analysis of infra-yearly trends are dealt with in the box 'Trends in sea and air freight rates and the effects of the pandemic').

Figure 2



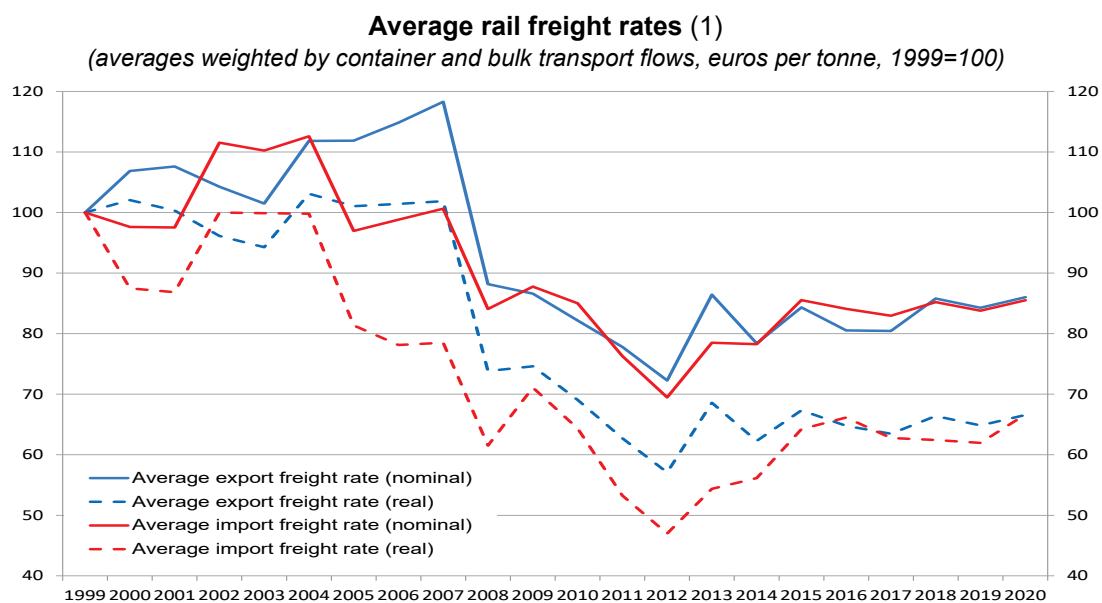
(1) The real costs are obtained by dividing the nominal costs by the export price index and the import price index respectively (sourced from Istat).

## Rail freight rates

### Average rail freight rates rise slightly in 2020

Average rail freight rates rose slightly for both import and export flows (Table 2). The increased use of rail as an alternative to road transport in times of tighter restrictions on the movement of persons more than compensated for the effects of lower demand linked to the decline in intra-European trade. Of all the geographical areas, the sharpest increase was seen for freight rates to and from the United Kingdom, in relation to accelerated trade in the closing months of 2020. There was a uniform decline in costs in the Balkan countries and those of the former Soviet Union, partly thanks to efficiency gains (longer trains available). In real terms, average rail freight rates remained at levels close to those recorded in the last five years, slightly above the 2012 minimum (Figure 3).

Figure 3



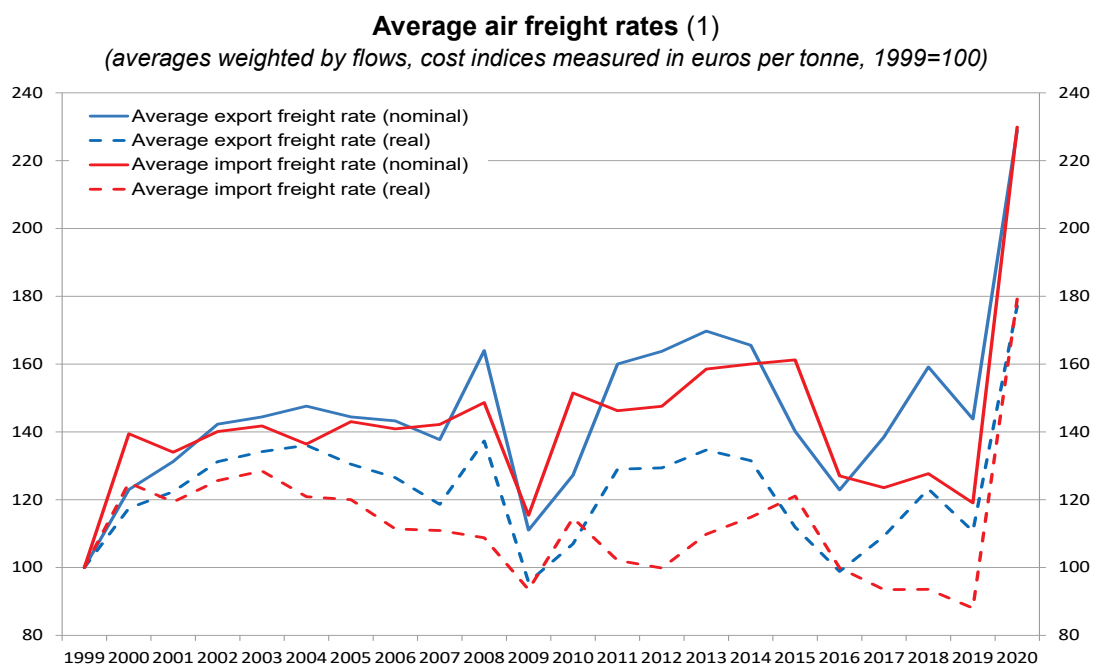
(1) The real costs are obtained by dividing the nominal costs by the export price index and the import price index respectively (source: Istat).

## Air freight rates

### An exceptional increase in air freight rates

The pandemic badly affected the air cargo sector, which makes ample use of any available belly cargo on passenger planes: the sharp reduction in these flights led to a marked reduction in load supply, with an exceptional increase in unit freight rates. Import rates almost doubled on average and export rates rose by 60 per cent (Table 3 and Figure 4). In real terms as well, average costs reached their highest levels for the last twenty years.

Figure 4



(1) The real costs are obtained by dividing the nominal costs by the export price index and the import price index respectively (source: Istat).

## Sea freight rates

Sea freight rates are surveyed by load type (container, bulk cargo, general cargo and Ro-Ro; see [‘Methods and Sources: Methodological Notes’](#)) to take into account the different tariffs for the various market segments.

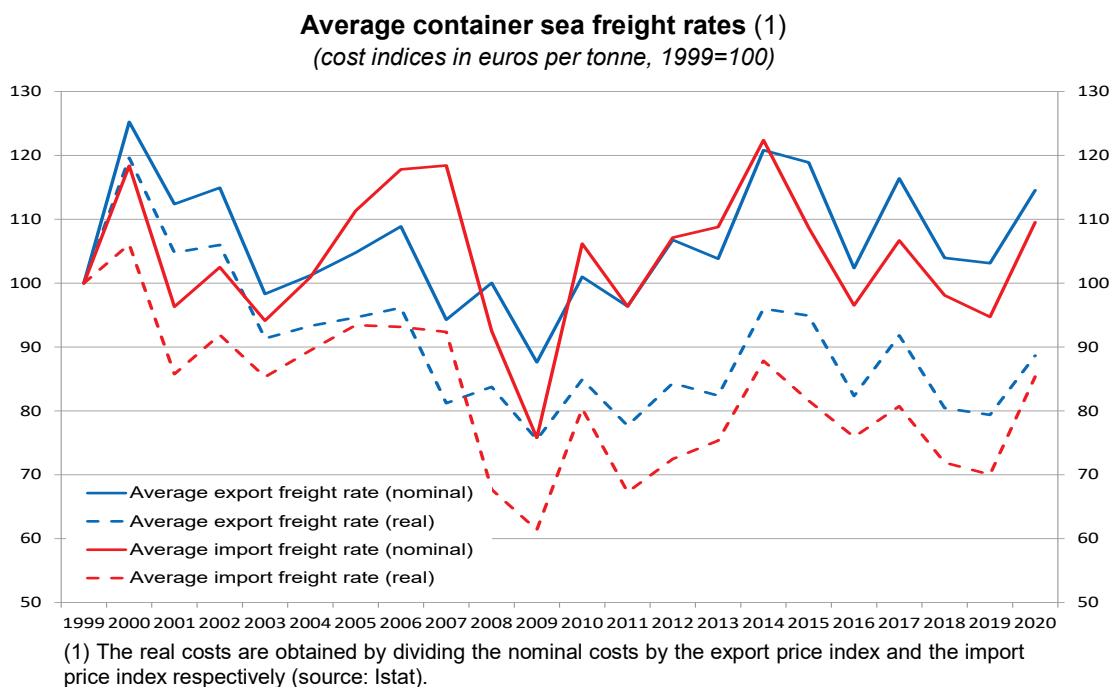
### Container sea freight

#### Container sea freight rates in \$/TEU increase sharply

In 2020, the freight rates as collected in the survey – in dollars per container (Twenty-foot Equivalent Unit-TEU) excluding ancillary services – recorded a sharp increase (higher by 30 per cent for exports and by 50 per cent for imports), especially for routes to and from China and other Asian countries (Table 4). On routes within the Mediterranean and those crossing the Strait of Gibraltar (to and from America, the rest of Africa and Europe), the increase in freight rates was more moderate, slowing down slightly towards the end of the year.

Since the other cost factors, mainly ancillary services, remained stable on average, overall euro/tonne freight rates increased less markedly over the year as a whole, by between 10 and 15 per cent. In real terms, they remained at levels below those prior to the 2008-09 crisis (Figure 5).

Figure 5

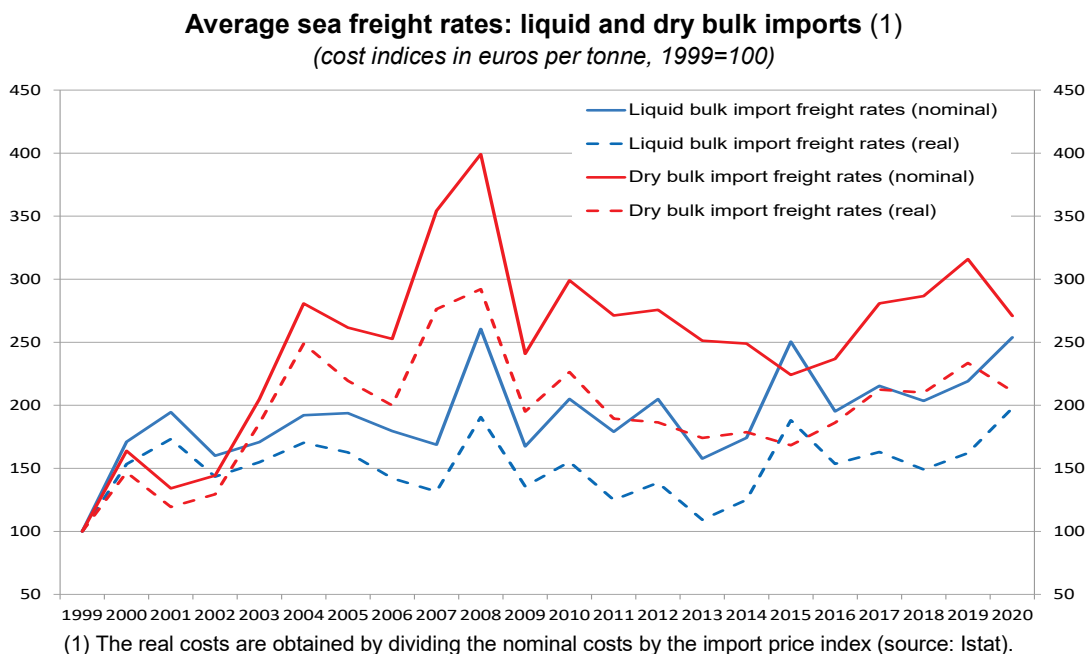


### Bulk sea freight (liquid and dry)

#### Different trends in bulk freight rates

The bulk sector was affected by the sharp fall in global demand for commodities in the initial phase of the pandemic, followed by a recovery thanks above all to the brisk upturn in industrial activity in China and in other Asian countries. The prices for transporting petroleum and petroleum products increased significantly on average in 2020, in contrast to a reduction in freight rates for the transport of chemical products. Among the various types of dry bulk, grain recorded a very limited increase, while freight rates for minerals decreased (Table 5). In real terms, average sea freight rates (including ancillary services) for imports of dry cargo remain high, though significantly lower than the historical peaks recorded shortly before the 2008-09 crisis (Figure 6); those relating to liquid bulk reached their highest in the twenty-year period considered.

Figure 6



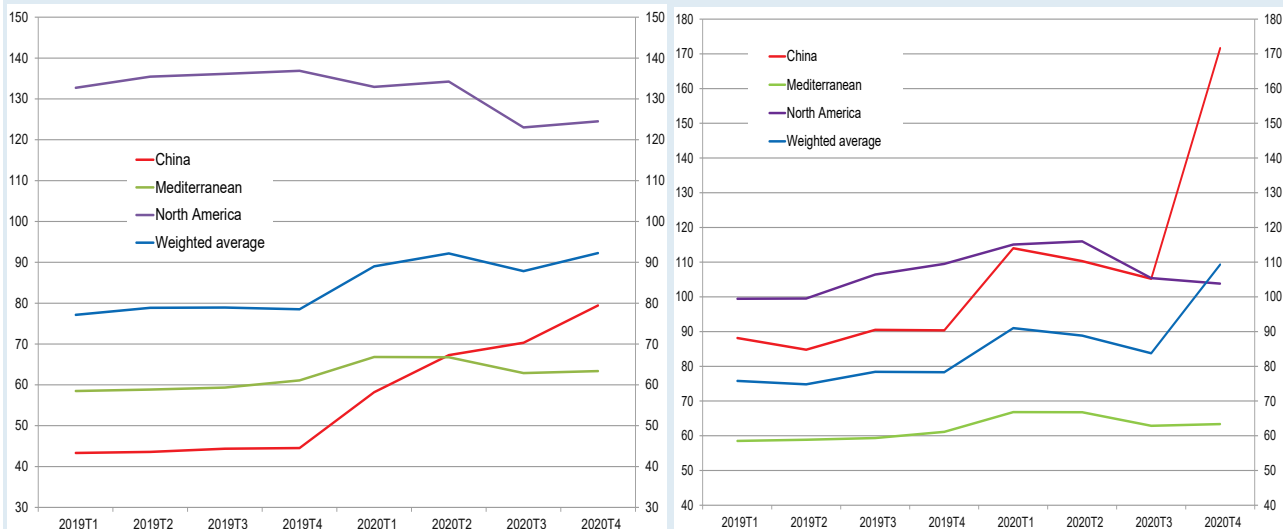
## TRENDS IN SEA AND AIR FREIGHT RATES AND THE EFFECTS OF THE PANDEMIC

The fact that data are available on a quarterly basis for ship containers and bulk freight rates, and half-yearly for air transport, makes it possible to assess the performance of freight rates during the various phases of the pandemic in 2020. Specialized journals and public sources indicate that these trends will continue in the early months of 2021.

Bearing in mind the overall tariffs in euros/tonne, there were considerable increases in container ships in the first and, above all, in the fourth quarter (Figure A). The increases were mainly attributable to the routes with China (and other Asian areas), gradual on the export side and concentrated on the import side at the end of the year; more limited or zero variations were recorded for the other geographical areas. Interviews with ship operators have indicated that the collapse in the demand for cargo in the initial phase of the pandemic caused them to reduce supply, by moving containers to different areas in the Far East and drastically increasing blank sailings. With the rapid recovery of the Chinese economy, the lack of an adequate loading capacity then led to a marked hike in prices, probably fostered by the high concentration among ship operators, which continued in the early months of 2021.

Figure A

**Average container sea freight rates (2019-2020)**  
(quarterly averages per tonne in euros, including ancillary services)



In bulk transport, the infra-annual performance of freight rates was divided between the two main types, liquid and dry. The costs for transporting petroleum and petroleum products rose sharply in the first half of the year – owing to the temporary and unusual use of ships as storage depots because of the fall in demand for these products – followed by a significant decline (see panel (a) of Figure b), which continued in the early months of 2021 as well. Conversely, for dry cargo, freight rates decreased in the first half of the year, reflecting the dramatic fall in global economic activity, and remained stable in the second half; they showed signs of recovery in the early months of 2021, confirmed by the performance of the sectoral indices (for example, the Dry Baltic Index).

In the air transport sector (see panel (b) of Figure B), freight rates increased significantly in the first half of 2020, as a result of the reduced belly cargo of passenger planes, in part because of the use of cargo aircraft for activities for containing the pandemic (such as transporting medical devices). The increase was partly reabsorbed in the second half of the year, when scheduled flights were resumed. In the early months of 2021, there was continued and widespread uncertainty in the cargo freight rates market, which continued to be affected by the still weak performance of international tourism flows.

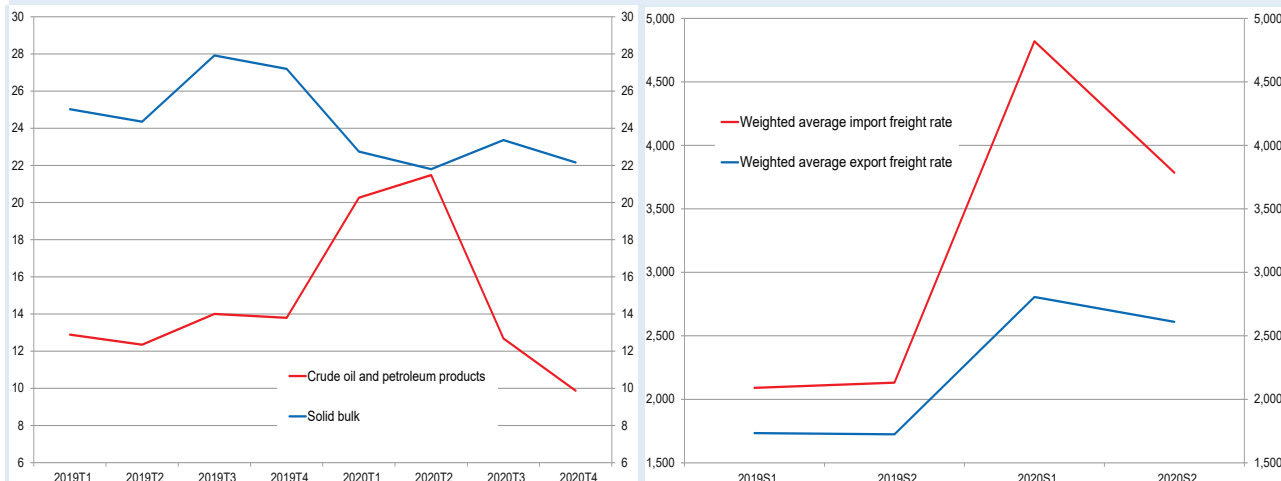


Figure B

**Average rates for bulk sea freight and for air freight (2019-2020)**  
*(weighted averages in euros per tonne, including ancillary services)*

(a) Bulk imports by sea (quarterly data)

(b) By plane (six-monthly data)



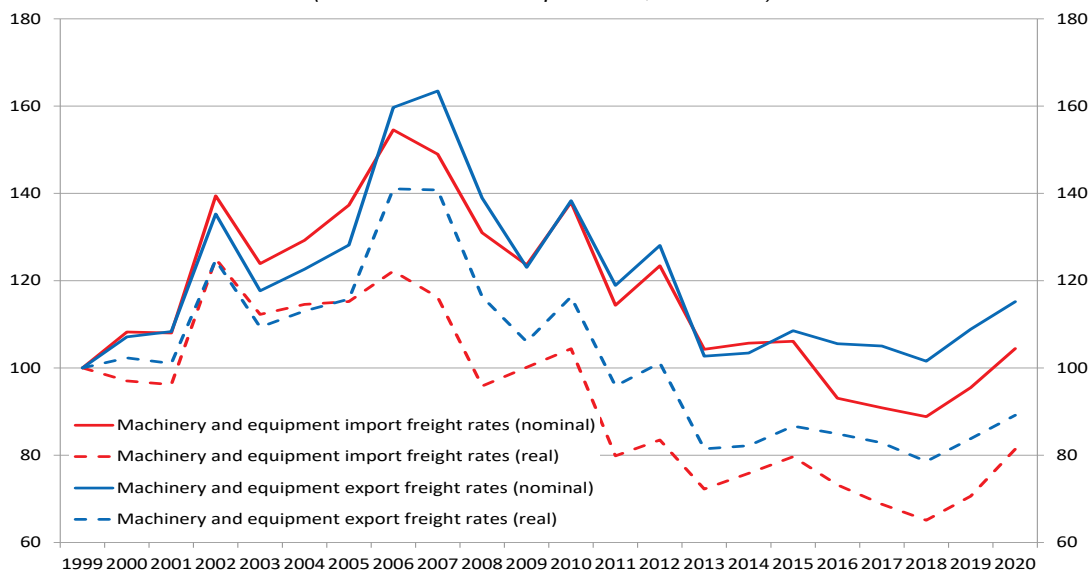
**General cargo and Ro-Ro transport**

**General cargo sea freight rates for the transport of plant, machinery and transport equipment are increasing**

In 2020, the average rates in euros per tonne increased in the most important general cargo categories, in relation to the transport of ‘plant, machinery and transport equipment’ (Table 6). The average rates (including ancillary services and in euros per tonne) in any case remain at historically low levels, in both nominal and real terms (Figure 7). Freight rates instead declined in the remaining categories (‘chemicals, building material, forestry products’ and ‘tubes, pipes and metal products’).

Figure 7

**Average general cargo sea freight rates: plant, machinery and transport equipment (1)**  
*(cost indices in euros per tonne, 1999=100)*



(1) The real costs are obtained by dividing the nominal costs by the export price index and the import price index respectively (source: Istat).

**Ro-Ro sea freight rates have increased**

In the Ro-Ro sector (transport of road vehicles, mainly in the Mediterranean area and with euro-denominated prices), costs increased significantly in 2020 (Table 7); in this sector, the increase in operating expenses linked to the introduction of the obligation to use less polluting fuels (with a low sulphur content<sup>5</sup>) affected freight rates in the first part of the year. The increase

affected almost all geographical areas, except for one of the most important routes (to/from Turkey), whose freight rates had already risen considerably in previous years.

## Natural gas transport

The sample survey has been collecting data on the cost of transporting natural gas via pipelines since 2016. Previously, the information came directly from the firms of the group managing the gas pipelines: when the market was liberalized, other operators were allowed to purchase and transport gas to Italy, making it necessary to extend the survey to include this highly concentrated sector. The costs are those borne from the point of sale (and not the point of production) of the natural gas until the point of entry into Italy<sup>6</sup> and they tend to be the same regardless of the volumes that are actually imported (take-or-pay contracts); changes in unit costs (in euros per tonne) also therefore depend on the actual volumes transported in relation to those agreed in the contract.

**Natural gas transportation rates have declined**

In 2020, costs declined by 2.3 per cent on average compared with the previous year, affected by the considerable reduction in those relative to imports from Algeria, while the cost attributable to another of the main supplier countries (Russia) rose slightly (Table 8). Over the year, the new Trans-Adriatic Pipeline (TAP) became operational, which will enable Italy to

diversify its supply sources (and possibly encourage the re-export of Azerbaijani gas).

## Carriers' market shares

Since 2002, there has also been a sample survey to estimate the distribution of international merchandise sea transport to and from Italy and among Italian and foreign carriers. This survey is a source of information that is not easily available at international level. In fact, the statistics available often refer to shipowners and not to the actual operators of those ships. For balance of payments purposes, it is the residence of the operator that is needed and that is why the Bank of Italy survey addresses the operators. Data from the Bank of Italy's Survey on International Tourism are used for road transport, while data from administrative sources are processed for air transport (see ['Methods and Sources: Methodological Notes'](#)).

In 2020, the overall average market share of Italian carriers, calculated by weighting on the basis of transport costs, remained practically stable compared with the previous year, at 15.6 per cent, from 15.3 per cent in 2019. In the maritime sector, the average share rose to 11.6 per cent, the highest figure for the last ten years (Table 9); the increase in the shares in Ro-Ro, in general cargo and in containers more than offset the contraction in the bulk sectors. At a time when the fleet controlled by resident ship operators had become smaller, however, this increase was reflected in a considerable contraction in cross-trade. In road transport, the market share of Italian carriers fell below 20 per cent for the first time; a historical low was reached in the air transport sector too (15.1 per cent).

Market shares by nationality of carrier recorded limited changes compared with the previous year. Swiss shipping companies hold the highest share in container transport, while Greek and Turkish ship operators prevail in bulk transport and general cargo respectively. In the Ro-Ro sector, the highest share, which is more than 50 per cent, is the preserve of Italian ship operators, who also hold significant shares in bulk liquid transport and in general cargo, in contrast to their marginal

<sup>5</sup> At European level, the obligation was introduced, starting from 1 January 2020, by Directive 2016/802 of the European Parliament and of the Council of 11 May 2016.

<sup>6</sup> Specifically, as regards Russian gas, the point of supply is at the border between Austria and Slovakia; for Algerian gas it is at the border between Algeria and Tunisia; for gas originating in Norway and the Netherlands the supply point is at the border between Germany and Holland; and for gas from Libya, the supply point is on the Libyan coastline.



positions in the container and bulk dry transport sectors (Table 10).

## The merchandise transport balance

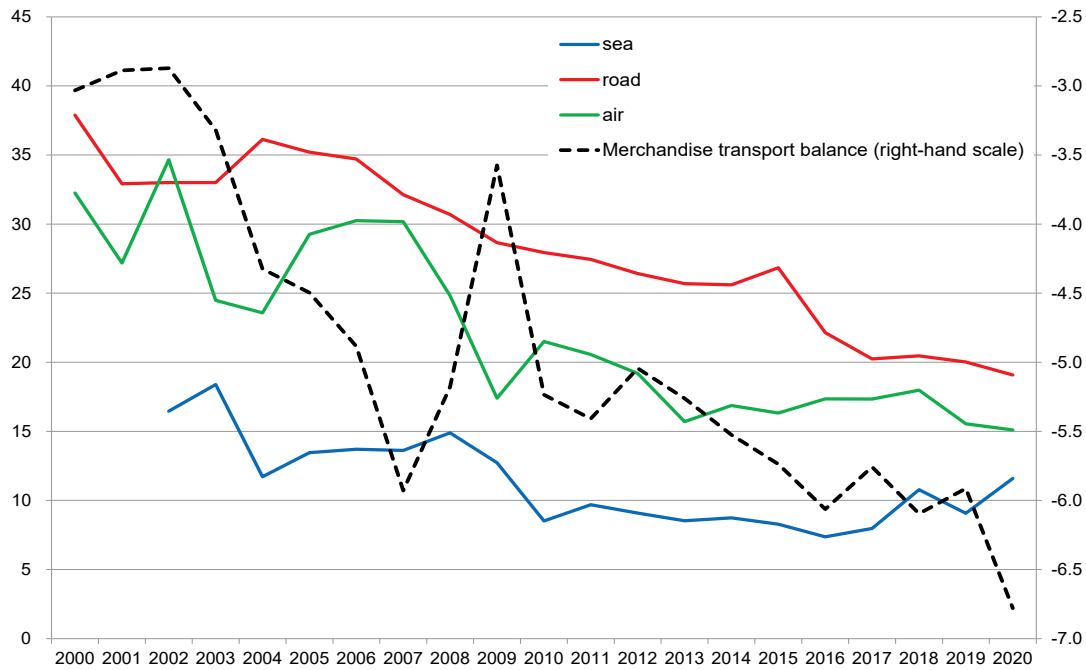
**The deficit in the merchandise transport balance increases slightly in 2020**

Given the small market share of Italian carriers, the balance for merchandise transport has a structural deficit that has fluctuated between €5 billion and €6 billion over the last ten years, accounting on average for about two thirds of the overall deficit in transport services (Table 11). The fluctuations are mainly caused by the effects of the economic cycle on average costs (Figure 8).

The deficit expanded in 2020, reaching its lowest point of the last twenty years (-€6.8 billion). Against a backdrop of generally stable market shares for Italian carriers and a contraction in volumes transported, the deterioration is due to the average increase in freight rates, concentrated in the air and sea sectors; the reduction in cross-trade made by Italian ship operators also contributed to the latter.

**Figure 8**

**Market shares of Italian carriers and balance for merchandise transport**  
(percentage market shares,<sup>1</sup> left-hand scale; balance on merchandise transport in billions of euros, right-hand scale)



(1) The average market share for ships is obtained by weighting with the transport costs.

## Tables

The source of the data for all the tables in this section is the Bank of Italy's Survey on International Merchandise Transport.

Table 1

### Average road freight rates (FTL and groupage)\* (2020)

Geographical area	Average freight rates (all types of load) (including ancillary services)				FTL and groupage freight rates (Average exports and imports, excluding ancillary services)			
	Exports (euros/tonne)	% change on 2019	Imports (euros/tonne)	% change on 2019	FTL (euros/vehicle)	% change on 2019	Groupage (euros/tonne)	% change on 2019
Austria – Switzerland	101.9	-2.3	101.8	-2.2	1,040	5.5	175.5	-3.6
Benelux	117.5	-10.5	117.4	-10.6	1,651	-3.2	175.0	-15.0
Eastern Europe (1)	105.9	0.8	96.9	-0.6	1,157	3.3	166.4	-2.6
France	99.4	2.7	100.0	2.2	1,294	-8.9	155.4	9.5
Germany	107.9	-3.5	107.2	-3.1	1,435	-7.6	165.5	-0.3
Greece – Turkey	127.2	-2.9	135.3	7.5	2,275	0.4	178.3	7.3
Balkan countries	127.7	-13.2	128.2	-13.2	1,391	-0.6	214.0	-17.7
Baltic countries	141.5	-17.1	149.8	-17.4	2,666	-1.9	178.8	-20.0
Former USSR countries	256.4	9.2	195.3	8.4	3,402	-4.4	326.3	15.6
UK - Ireland	184.8	-4.8	159.0	-6.5	2,746	2.3	252.3	-6.1
Scandinavia	151.2	0.3	160.5	1.2	2,463	-5.9	225.7	4.8
Spain - Portugal	117.2	-0.2	105.4	-3.5	1,687	-0.1	162.5	-1.5
<b>Weighted average (2)</b>	<b>117.1</b>	<b>-2.7</b>	<b>111.3</b>	<b>-3.5</b>	<b>1,516</b>	<b>-2.7</b>	<b>177.7</b>	<b>-2.9</b>

\* FTL = Full Truck Loads, while the term 'Groupage' = a partial load.

(1) Eastern Europe includes Poland, the Czech Republic, Slovakia and Hungary. – (2) Weights are based on transported volumes.

Table 2

### Average rail freight rates: total cargo and container cargo (2020)

Geographical area	Overall freight rates (all types of load)				Container cargo rates			
	Exports (euros/tonne)	% change on 2019	Imports (euros/tonne)	% change on 2019	Exports (euros/tonne)	% change on 2019	Imports (euros/tonne)	% change on 2019
Austria – Switzerland	39.1	4.4	38.4	5.7	42.9	-5.3	42.5	-5.6
Benelux	53.6	2.1	49.5	-1.1	59.4	4.1	56.0	2.5
Eastern Europe (1)	54.2	-2.4	54.3	2.1	54.1	-10.7	51.3	-10.3
France	47.4	2.2	43.3	3.1	52.9	0.9	51.8	0.3
Germany	46.1	0.8	45.3	2.8	51.6	0.2	53.5	1.2
Greece – Turkey	70.6	-0.3	68.0	-3.3	78.6	8.7	86.2	10.9
Balkan countries	62.4	-2.7	56.3	2.3	61.2	-11.6	55.2	-10.8
Baltic countries	82.4	-4.8	85.7	0.8	81.0	-13.2	88.4	-13.6
Former USSR countries	93.5	-8.0	93.3	2.2	93.0	-13.8	88.5	-13.6
UK - Ireland	73.3	23.1	66.8	15.2	85.8	38.7	86.9	38.6
Scandinavia	68.5	-0.7	61.3	-8.3	76.0	10.4	74.5	9.9
Spain - Portugal	55.3	2.1	51.3	-4.0	65.4	6.6	57.2	3.1
<b>Weighted average (2)</b>	<b>52.3</b>	<b>2.1</b>	<b>48.2</b>	<b>2.1</b>	<b>57.9</b>	<b>1.2</b>	<b>53.5</b>	<b>-1.5</b>

(1) Eastern Europe includes Poland, the Czech Republic, Slovakia and Hungary. – (2) Weights are based on transported volumes.

Table 3

**Average air freight rates  
(2020)**

Geographical area	Exports (including ancillary services)		Imports (including ancillary services)	
	Euros/tonne	% change on 2019	Euros/tonne	% change on 2019
Europe	3,500	79.5	3,500	79.5
Russia	3,112	-13.5	3,112	-13.5
Mediterranean and Middle East	1,779	12.9	1,779	12.9
Rest of Africa	2,912	41.1	2,912	41.1
India	1,886	58.9	3,801	81.1
Indonesia - Singapore	1,645	4.9	3,801	63.6
China	1,250	-11.8	5,505	118.6
Japan - Korea	2,871	46.5	3,670	43.5
Oceania	6,065	98.5	6,065	98.5
United States and Canada	4,308	126.3	2,395	112.9
Central and South America	4,989	94.7	4,989	94.7
<b>Weighted average (1)</b>	<b>2,879</b>	<b>59.2</b>	<b>4,039</b>	<b>93.1</b>

(1) Weights are based on transported volumes.

Table 4

**Average container sea freight rates  
(2020)**

Geographical area	Average rates (€/tonne) (including ancillary services)				Rates (\$/TEU) (excluding ancillary services)			
	Exports	% change on 2019	Imports	% change on 2019	Exports	% change on 2019	Imports	% change on 2019
Europe - Mediterranean	93.4	6.0	90.9	2.4	456.7	39.8	456.5	36.3
Rest of Africa	140.4	11.8	134.1	5.3	1,130.9	28.0	1,130.6	24.8
Middle East	108.9	23.9	104.8	18.2	728.4	82.3	728.2	77.7
India	104.7	13.6	136.9	24.1	670.8	43.4	1,175.7	65.1
South-East Asia	110.4	43.3	158.1	37.8	750.4	184.1	1,479.1	91.8
China and Japan	97.6	34.4	154.5	32.0	554.2	186.6	1,396.5	76.5
Oceania	167.4	31.5	159.5	23.7	1,404.4	68.3	1,404.1	64.1
USA and Canada	157.1	-4.2	138.5	4.6	1,225.3	-4.0	1,060.5	24.5
Central America	142.8	2.8	137.0	-2.6	1,029.5	10.2	1,029.2	7.5
South America	87.7	6.1	85.4	2.7	407.1	49.9	407.0	46.1
<b>Weighted average (1)</b>	<b>118.8</b>	<b>11.1</b>	<b>122.0</b>	<b>15.6</b>	<b>780.7</b>	<b>32.4</b>	<b>897.5</b>	<b>53.9</b>

(1) Weights are based on transported volumes.

Table 5

**Average rates for bulk sea freight: liquid and dry  
(2020)**

Type of merchandise		Average rates for imports			
		€/tonne (including ancillary services)	% change on 2019	\$/tonne (excluding ancillary services)	% change on 2019
<b>Liquid cargo</b>	Petroleum and petroleum products	15.8	19.4	15.9	24.2
	Chemicals	82.5	-10.3	85.4	-10.3
<b>Dry cargo</b>	Coal/minerals	16.8	-21.5	11.2	-16.9
	Grain	31.6	-8.9	23.8	3.6

Table 6

**Average general cargo sea freight rates**  
(2020)

Type of merchandise	Exports		Imports	
	Euros/tonne	% change on 2019	Euros/tonne	% change on 2019
Plant, machinery and transport equipment (1)	246.4	5.8	228.0	9.4
Chemicals, building materials and forestry products	59.0	-14.9	68.1	-12.0
Tubes, pipes and metal products (2)	67.5	-7.2	65.6	-9.9

(1) 'Plant, machinery and transport equipment' are Categories 11 (Machinery and equipment) and 12 (Transport equipment) of the NST 2007 classification. – (2) 'Tubes, pipes and metal materials' come under Category 10 (Basic metals; manufactured metal products, excluding machinery and equipment) of the NST 2007 classification.

Table 7

**Average Ro-Ro sea transport rates**  
(2020)

Geographical area	Average of exports and imports (including ancillary services)	
	Euros/tonne	% change on 2019
Balkan countries	26.6	17.8
France	21.5	42.4
Greece	50.8	3.5
Northern Europe	263.7	23.4
North Africa (excluding Tunisia)	142.5	23.9
Spain	62.9	7.0
Tunisia - Malta	58.8	8.2
Turkey	70.1	-5.2
Other countries	271.5	22.6
<b>Weighted average (1)</b>	<b>153.9</b>	<b>13.9</b>

(1) Weights are based on transported volumes.

Table 8

**Average rates for natural gas transport via pipeline**  
(2020)

Point of entry	Country of origin of natural gas	Euros/tonne	% change on 2019
Mazara del Vallo	ALGERIA	22.5	-25.9
Gela	LIBYA	32.3	20.5
Passo Gries	NORWAY/NETHERLANDS	61.5	20.8
Tarvisio	RUSSIA	1.5	2.8
<b>Weighted average (1)</b>		<b>18.4</b>	<b>-2.3</b>

(1) Weights are based on transported volumes.

Table 9

**Market shares of Italian carriers for imports and exports of goods to and from Italy**  
(data as a percentage)

YEARS	Sea						Road	Air	Overall averages (1)
	Liquid bulk	Dry bulk	Containers	General cargo	Ro-Ro	Average (1)			
2002	23.3	8.0	16.0	16.0		16.5	33.0	34.7	24.1
2003	27.7	10.3	11.9	24.4		18.4	33.0	24.5	24.6
2004	19.4	12.9	5.7	14.6		11.7	36.1	23.6	22.7
2005	20.8	8.6	8.9	17.7		13.5	35.2	29.3	23.9
2006	19.6	15.5	9.3	16.7		13.7	34.7	30.3	23.9
2007	21.5	13.6	7.9	17.9		13.6	32.1	30.2	23.0
2008	18.2	12.1	10.6	18.6	25.0	14.9	30.7	26.3	22.6
2009	21.2	12.2	5.5	16.7	23.8	12.7	28.6	17.4	20.8
2010	18.9	8.8	1.6	10.0	32.2	8.5	27.9	21.5	18.5
2011	18.0	12.7	2.8	12.9	27.4	9.7	27.4	20.6	19.4
2012	16.6	13.6	3.2	11.6	23.8	9.1	26.4	19.2	18.3
2013	13.8	12.2	2.7	10.1	29.7	8.5	25.7	15.7	18.0
2014	13.7	12.1	2.5	10.5	39.7	8.7	25.6	16.9	17.8
2015	10.7	8.9	2.8	9.7	34.1	8.3	26.8	16.3	18.2
2016	10.8	8.7	1.0	11.4	26.7	7.4	22.1	17.4	16.1
2017	15.5	8.7	1.8	6.1	30.7	8.0	20.2	17.3	14.9
2018	15.7	4.7	3.4	10.5	41.2	10.8	20.5	18.0	16.4
2019	11.6	4.7	1.8	7.9	42.1	9.1	20.0	15.6	15.3
2020	8.2	1.7	2.3	14.3	55.6	11.6	19.1	15.1	15.6

(1) Weights are based on transport costs (unit freight rates for volumes transported).

Table 10

**Market shares by nationality of maritime carriers in 2020**  
(percentages, imports and exports of goods to and from Italy by ship)

Containers	Dry bulk	Liquid bulk	General cargo	Ro-Ro					
Switzerland	30.6	Greece	20.4	Greece	43.9	Turkey	27.4	<b>Italy</b>	<b>55.6</b>
Germany	16.9	Turkey	17.3	<b>Italy</b>	<b>8.2</b>	<b>Italy</b>	<b>14.3</b>	Greece	19.8
Denmark	10.8	Germany	7.6	Switzerland	7.3	Switzerland	7.5	Turkey	8.1
France	8.7	Japan	5.9	United Kingdom	6.9	Norway	6.6	Japan	6.3
Taiwan	8.7	India	4.3	United States	4.8	Netherlands	5.7	Norway	3.3
China	7.6	United States	4.0	Netherlands	3.8	Russia	4.8	Tunisia	3.2
Japan	3.5	Switzerland	3.2	Bermuda	3.8	Germany	3.9	Switzerland	1.8
United States	2.5	Hong Kong	3.2	Japan	3.1	Bulgaria	3.3	United States	0.6
<b>Italy</b>	<b>2.3</b>	Monaco	3.1	Denmark	2.7	Greece	3.2	South Korea	0.4
Israel	2.0	China	2.8	Turkey	1.6	Ukraine	2.8	Croatia	0.4
Turkey	1.7	United Kingdom	2.6	Norway	1.4	South Africa	2.7	Sweden	0.2
Hong Kong	1.5	Bulgaria	2.3	Malaysia	1.2	Cayman Isl.	1.6	Poland	0.1
United Kingdom	1.0	Bermuda	2.2	Russia	1.2	Spain	1.6	France	0.1
South Korea	0.6	<b>Italy</b>	<b>1.7</b>	France	1.2	Lebanon	1.4	Saudi Arabia	0.0
Lebanon	0.5	Canada	1.7	Canada	1.0	China	1.4	Spain	0.0
Romania	0.4	Singapore	1.5	Monaco	1.0	South Korea	1.3	Albania	0.0
Singapore	0.2	Estonia	1.5	Singapore	0.8	Albania	1.3	Cyprus	0.0
<i>Sub-total</i>	<i>99.5</i>	<i>Sub-total</i>	<i>85.4</i>	<i>Sub-total</i>	<i>93.9</i>	<i>Sub-total</i>	<i>90.6</i>	<i>Sub-total</i>	<i>100.0</i>
Other countries	0.5	Other countries	14.6	Other countries	6.1	Other countries	9.4	Other countries	0.0
<b>Total</b>	<b>100.0</b>	<b>Total</b>	<b>100.0</b>	<b>Total</b>	<b>100.0</b>	<b>Total</b>	<b>100.0</b>	<b>Total</b>	<b>100.0</b>

Table 11

**Balance on merchandise transport**

*(millions of euros or per cent, if specified)*

Flows	Mode of transport	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Credit</b>	Sea	3,948	4,006	3,886	3,598	4,055	3,912	4,510	4,241	4,525	3,785
	<i>of which: cross-trade</i>	2,587	2,468	2,518	2,132	2,346	2,030	2,705	2,502	2,802	2,146
	Air	296	281	289	299	286	287	352	376	319	346
	Road	2,733	2,502	2,761	2,889	3,034	3,051	2,974	3,092	3,089	2,718
	Rail	29	29	26	28	30	30	30	30	34	38
	Pipelines	6	6	6	10	11	12	12	15	15	8
	<b>Total</b>	<b>7,011</b>	<b>6,823</b>	<b>6,967</b>	<b>6,825</b>	<b>7,417</b>	<b>7,293</b>	<b>7,878</b>	<b>7,754</b>	<b>7,981</b>	<b>6,894</b>
<b>Debit</b>	Sea	5,836	5,626	5,310	5,274	5,956	5,600	5,568	5,878	5,884	5,607
	Air	645	646	808	864	817	753	906	960	884	1,437
	Road	5,062	4,775	5,131	5,262	5,423	6,061	6,215	6,305	6,300	5,748
	Rail	334	289	342	378	372	380	404	399	384	343
	Pipelines	542	533	639	574	587	563	543	308	443	539
		<b>Total</b>	<b>12,420</b>	<b>11,868</b>	<b>12,229</b>	<b>12,351</b>	<b>13,154</b>	<b>13,356</b>	<b>13,637</b>	<b>13,850</b>	<b>13,895</b>
<b>Balances</b>	Sea	-1,889	-1,620	-1,424	-1,676	-1,901	-1,688	-1,058	-1,637	-1,359	-1,823
	Air	-350	-365	-519	-565	-531	-466	-554	-584	-565	-1,091
	Road	-2,329	-2,273	-2,371	-2,373	-2,388	-3,010	-3,241	-3,213	-3,211	-3,030
	Rail	-305	-260	-316	-350	-342	-349	-374	-369	-351	-305
	Pipelines	-537	-527	-633	-563	-576	-550	-531	-293	-428	-531
		<b>Total (A)</b>	<b>-5,409</b>	<b>-5,044</b>	<b>-5,262</b>	<b>-5,526</b>	<b>-5,737</b>	<b>-6,064</b>	<b>-5,758</b>	<b>-6,096</b>	<b>-5,914</b>
<i>Memorandum item:</i>											
	<b>Overall balance of transport services<sup>1</sup> (B)</b>	<b>-8,677</b>	<b>-8,223</b>	<b>-7,934</b>	<b>-8,286</b>	<b>-8,363</b>	<b>-8,418</b>	<b>-9,228</b>	<b>-9,518</b>	<b>-9,795</b>	<b>-8,009</b>
	<i>A as a percentage of B</i>	62.3	61.3	66.3	66.7	68.6	72.0	62.4	64.0	60.4	84.7
	<b>Current account balance</b>	<b>-46,576</b>	<b>-3,746</b>	<b>17,879</b>	<b>30,904</b>	<b>23,529</b>	<b>43,997</b>	<b>44,763</b>	<b>44,487</b>	<b>57,413</b>	<b>58,585</b>

(1) In addition to international merchandise transport, includes passenger transport and postal services.



## Statistical Appendix

Table A.1

**Import and export volumes by mode of transport (1)**  
(millions of tonnes; if specified, percentage shares for the last year of the time series)

Imports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Container	General cargo	Ro-Ro	Container	Bulk			
1999	127.3	55.7	16.7	19.5		9.1	16.8	35.0	0.4	42.9
2000	129.7	60.1	17.8	20.7		9.8	17.6	38.4	0.5	38.6
2001	124.3	61.1	17.1	21.6		9.9	17.6	40.2	0.4	38.0
2002	121.4	59.9	17.0	21.7		9.8	17.0	42.3	0.3	41.5
2003	117.7	62.7	18.2	22.5		10.1	17.2	44.4	0.4	42.4
2004	114.3	69.8	17.8	23.6		10.7	17.9	47.9	0.4	47.4
2005	113.7	66.5	17.3	23.1		10.8	17.9	50.0	0.4	50.7
2006	111.0	65.8	20.0	23.8	5.1	11.6	19.1	53.9	0.4	54.6
2007	114.0	70.3	21.8	25.0	4.9	11.9	19.9	58.4	0.4	51.5
2008	106.7	68.1	20.8	22.7	4.6	11.0	18.6	54.3	0.3	56.3
2009	99.1	48.9	16.9	14.9	4.2	9.3	15.9	47.9	0.3	50.2
2010	106.0	51.0	21.0	20.3	4.2	10.7	19.1	55.7	0.3	48.0
2011	97.8	55.2	20.2	21.3	4.4	10.7	18.9	55.8	0.3	43.7
2012	78.9	51.4	16.6	17.7	3.9	10.1	17.3	52.7	0.3	41.3
2013	81.9	47.3	17.4	18.4	3.3	11.2	18.0	53.5	0.3	40.7
2014	73.9	44.7	18.2	19.4	3.3	11.8	19.0	55.9	0.3	37.1
2015	83.9	50.1	21.1	11.4	4.5	13.7	17.4	56.8	0.3	39.7
2016	86.4	50.1	22.2	11.9	4.5	13.8	18.1	57.8	0.4	39.0
2017	90.3	47.8	22.6	12.0	4.8	14.4	19.0	60.0	0.4	40.4
2018	88.3	47.6	23.2	12.7	5.0	14.9	19.3	61.7	0.5	39.5
2019	91.5	42.6	23.4	12.6	4.7	14.4	18.8	60.0	0.5	41.2
2020	75.7	34.6	21.9	10.7	4.1	13.4	17.3	55.5	0.4	35.4
2020 (as a %)	28.1	12.9	8.2	4.0	1.5	5.0	6.4	20.6	0.2	13.2
Exports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Container	General cargo	Ro-Ro	Container	Bulk			
1999	18.7	4.5	19.2	8.6		7.9	5.0	36.9	0.4	
2000	18.1	4.4	20.9	9.7		8.7	5.2	39.5	0.4	
2001	18.2	3.9	20.8	9.6		9.2	5.4	40.3	0.4	
2002	18.0	3.3	21.8	9.7		9.3	5.5	40.7	0.5	
2003	21.0	2.6	20.8	9.1		9.5	5.6	40.8	0.4	
2004	21.3	2.4	22.3	9.8		10.3	5.8	43.5	0.5	
2005	24.7	2.1	23.0	10.3		11.1	6.2	45.9	0.5	
2006	23.0	1.7	24.0	9.4	5.3	12.0	6.9	48.1	0.5	
2007	27.2	2.7	25.3	9.5	5.5	12.7	7.4	54.5	0.7	
2008	25.8	2.9	25.5	9.9	5.4	12.1	7.3	52.6	0.5	
2009	24.2	2.4	21.6	7.0	4.2	9.8	6.1	42.2	0.4	
2010	27.7	2.8	24.7	7.7	4.4	12.4	7.9	52.7	0.5	
2011	23.7	2.5	25.8	7.6	4.1	12.6	7.9	53.6	0.5	
2012	25.8	2.4	27.3	8.5	4.1	12.5	7.8	53.3	0.5	
2013	19.1	4.1	25.1	9.9	3.9	10.2	8.6	55.5	0.5	
2014	18.5	4.2	25.4	10.1	3.8	9.3	8.5	52.2	0.5	
2015	23.2	4.8	26.5	9.0	5.1	10.9	7.2	56.3	0.5	
2016	22.8	4.1	25.7	8.6	5.0	12.2	8.0	62.2	0.5	
2017	24.9	3.6	26.6	8.1	4.8	11.6	8.1	60.4	0.6	
2018	22.4	3.3	26.5	7.7	4.7	11.5	8.2	60.5	0.6	
2019	19.9	3.4	25.0	7.7	4.7	11.4	8.0	59.9	0.6	
2020	18.2	2.8	24.2	6.9	4.6	10.9	7.3	56.6	0.4	
2020 (as a %)	13.8	2.1	18.3	5.3	3.5	8.2	5.5	42.9	0.3	

Sources: Based on data from Istat, Alps Crossing, Eurostat and ENAC.

(1) In 2015, there were some breaks in the time series (specifically for general cargo imports and maritime Ro-Ro) because of an update to the methodology for estimating the modal distribution of the foreign trade data. Provisional data for 2020.

Table A.2

**Import and export values by mode of transport (1)**  
(billions of euros; if specified, percentage shares for the last year of the time series)

Imports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Container	General cargo	Ro-Ro	Container	Bulk			
1999	18.0	6.6	41.5	19.1		14.6	18.0	67.9	15.8	
2000	31.3	7.4	47.2	23.0		17.3	20.7	82.5	20.1	
2001	28.2	7.6	44.2	22.3		18.5	21.6	91.2	20.0	
2002	25.3	7.0	40.2	20.2		18.5	21.2	94.8	19.8	
2003	24.5	6.6	37.3	19.4		19.1	21.5	100.2	18.6	
2004	25.6	7.6	37.3	21.4		20.9	23.1	111.7	19.7	
2005	33.6	7.7	36.8	21.3		22.1	23.8	120.3	21.2	
2006	39.9	8.0	38.5	22.0	5.9	24.6	26.6	136.3	22.3	
2007	41.6	9.3	44.0	25.4	6.4	26.3	28.7	153.2	20.5	
2008	49.8	11.2	45.2	24.2	6.3	25.1	27.8	147.8	20.3	
2009	31.2	7.9	36.7	14.6	4.9	20.4	22.5	121.8	18.3	
2010	45.7	9.3	49.7	20.0	6.0	24.0	26.6	144.1	20.9	
2011	54.9	11.8	52.6	22.5	6.7	25.1	27.9	152.9	22.8	
2012	53.8	10.7	44.8	18.9	6.1	22.8	25.4	142.3	23.5	
2013	49.3	7.8	43.5	17.7	5.9	29.2	23.8	138.4	22.5	
2014	40.9	7.5	46.5	18.4	6.3	29.5	24.9	140.4	23.4	
2015	30.7	12.5	50.9	11.9	12.6	33.8	22.6	150.3	27.9	15.5
2016	25.5	11.5	51.0	11.3	13.8	34.7	23.9	156.0	26.5	11.7
2017	33.4	13.1	54.1	12.7	14.8	37.2	26.3	167.8	26.7	13.5
2018	40.1	13.7	56.2	13.8	14.9	38.2	27.2	172.8	29.0	16.0
2019	38.4	12.8	57.1	13.3	14.8	38.4	27.3	173.1	33.0	13.4
2020	22.9	10.6	51.4	11.2	12.0	35.0	23.3	156.0	36.5	8.7
2020 (as a %)	6.2	2.9	14.0	3.0	3.3	9.5	6.3	42.4	9.9	2.4
Exports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Container	General cargo	Ro-Ro	Container	Bulk			
1999	2.9	1.3	43.7	22.0		19.8	10.5	98.7	17.9	
2000	4.9	1.3	52.5	25.6		23.5	11.9	112.4	22.8	
2001	4.5	1.2	54.1	24.9		25.9	12.6	119.1	24.3	
2002	4.2	1.0	53.0	22.7		26.0	12.4	116.7	24.4	
2003	4.9	0.8	48.6	20.1		27.2	12.6	118.4	23.0	
2004	5.6	0.6	50.8	20.3		30.1	13.7	129.0	24.4	
2005	8.7	0.4	52.6	19.3		32.2	14.5	135.3	26.1	
2006	9.5	0.3	57.4	15.3	11.8	36.6	16.2	145.0	28.6	
2007	11.4	0.5	62.2	18.0	13.2	39.8	17.8	169.6	31.7	
2008	13.8	0.7	65.1	19.7	13.6	38.5	17.9	168.7	30.7	
2009	8.4	0.5	54.7	15.3	10.4	30.0	14.1	131.1	25.9	
2010	13.1	0.6	60.9	16.5	11.5	34.2	16.0	151.0	30.8	
2011	14.5	0.7	66.6	17.4	11.9	37.2	17.6	169.0	35.4	
2012	17.9	0.7	72.2	18.9	11.7	37.0	17.4	171.0	38.0	
2013	13.9	1.4	69.8	18.0	10.3	35.1	21.3	176.3	38.9	
2014	12.2	1.4	72.9	18.4	10.4	36.2	21.7	181.3	39.2	
2015	11.2	1.3	70.1	18.1	18.4	42.6	14.7	193.0	44.3	
2016	9.0	1.2	68.4	17.0	17.2	43.1	15.1	195.9	44.1	
2017	11.9	1.3	73.1	17.8	18.1	46.1	16.1	209.2	49.0	
2018	12.7	1.2	76.1	18.0	17.7	47.4	17.1	216.3	51.0	
2019	11.4	1.3	77.8	17.9	16.8	48.8	17.3	222.6	55.9	
2020	7.5	1.1	73.2	16.4	15.7	45.3	16.2	207.4	46.3	
2020 (as a %)	1.7	0.3	17.1	3.8	3.7	10.5	3.8	48.3	10.8	

Sources: Based on data from Istat, Alps Crossing, Eurostat and ENAC.

(1) In 2015, there were some breaks in the time series (specifically for general cargo imports and maritime Ro-Ro) because of an update to the methodology for estimating the modal distribution of the foreign trade data. Provisional data for 2020.

Table A.3

**Import and export unit values by mode of transport (1)**  
(euros/tonne)

Imports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Container	General cargo	Ro-Ro	Container	Bulk			
1999	142	119	2,488	980		1,609	1,072	1,939	36,929	
2000	241	123	2,649	1,112		1,770	1,175	2,148	42,367	
2001	227	124	2,588	1,035		1,862	1,226	2,269	54,425	
2002	209	116	2,361	933		1,896	1,249	2,242	57,581	
2003	209	105	2,047	864		1,884	1,251	2,255	48,422	
2004	224	109	2,103	909		1,945	1,289	2,335	53,762	
2005	295	116	2,121	922		2,042	1,330	2,404	59,066	
2006	360	122	1,928	924	1,158	2,116	1,388	2,528	59,252	
2007	365	133	2,014	1,016	1,302	2,217	1,440	2,621	53,885	
2008	466	164	2,168	1,064	1,384	2,271	1,492	2,723	60,377	
2009	314	161	2,171	984	1,172	2,196	1,414	2,543	52,471	
2010	431	183	2,364	988	1,430	2,233	1,398	2,588	64,753	
2011	561	214	2,608	1,058	1,514	2,338	1,475	2,740	71,558	
2012	681	208	2,696	1,070	1,565	2,268	1,466	2,702	76,457	
2013	601	165	2,495	960	1,800	2,594	1,321	2,585	82,822	
2014	553	167	2,553	948	1,925	2,498	1,311	2,512	76,832	
2015	366	249	2,412	1,042	2,797	2,474	1,299	2,646	81,779	391
2016	296	230	2,294	950	3,074	2,510	1,320	2,698	70,227	300
2017	370	273	2,396	1,065	3,097	2,578	1,383	2,798	64,263	334
2018	454	287	2,420	1,084	2,995	2,560	1,410	2,803	54,684	406
2019	420	302	2,438	1,059	3,129	2,667	1,448	2,886	69,304	325
2020	302	308	2,341	1,046	2,945	2,609	1,344	2,809	84,598	245
Exports	Sea					Rail		Road	Air	Pipelines
	Liquid bulk	Dry bulk	Container	General cargo	Ro-Ro	Container	Bulk			
1999	157	277	2,279	2,545		2,511	2,116	2,677	40,282	
2000	271	287	2,515	2,637		2,717	2,278	2,845	51,982	
2001	249	300	2,594	2,610		2,808	2,340	2,951	54,715	
2002	233	299	2,436	2,336		2,800	2,251	2,868	53,508	
2003	235	291	2,337	2,213		2,863	2,267	2,902	51,256	
2004	263	261	2,275	2,060		2,920	2,339	2,963	51,160	
2005	352	211	2,288	1,868		2,913	2,334	2,950	55,925	
2006	413	157	2,398	1,629	2,237	3,047	2,334	3,015	59,448	
2007	418	186	2,460	1,889	2,393	3,127	2,386	3,114	46,395	
2008	534	221	2,551	1,997	2,519	3,179	2,460	3,209	61,747	
2009	345	217	2,529	2,172	2,455	3,067	2,314	3,105	63,753	
2010	473	212	2,464	2,145	2,606	2,750	2,029	2,865	67,666	
2011	611	270	2,578	2,299	2,907	2,944	2,218	3,155	71,263	
2012	692	300	2,641	2,224	2,854	2,951	2,230	3,209	78,245	
2013	727	349	2,775	1,819	2,617	3,440	2,465	3,175	82,338	
2014	662	343	2,866	1,822	2,767	3,897	2,568	3,472	82,010	
2015	481	281	2,648	2,009	3,612	3,894	2,027	3,426	85,621	
2016	396	304	2,663	1,971	3,433	3,528	1,882	3,151	81,710	
2017	476	358	2,746	2,198	3,760	3,979	1,985	3,466	80,345	
2018	569	378	2,876	2,331	3,780	4,111	2,079	3,576	79,486	
2019	572	378	3,107	2,319	3,604	4,287	2,176	3,719	91,105	
2020	410	400	3,027	2,364	3,405	4,162	2,224	3,660	103,595	

Sources: Based on data from Istat, Alps Crossing, Eurostat and ENAC.

(1) In 2015, there were some breaks in the time series (specifically for general cargo imports and maritime Ro-Ro) because of an update to the methodology for estimating the modal distribution of the foreign trade data. Provisional data for 2020.

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