BANCA D'ITALIA
EUROSISTEMA

Statistics

Survey on International Merchandise Transport

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www.bancaditalia.it/statistiche/index.html

The main results

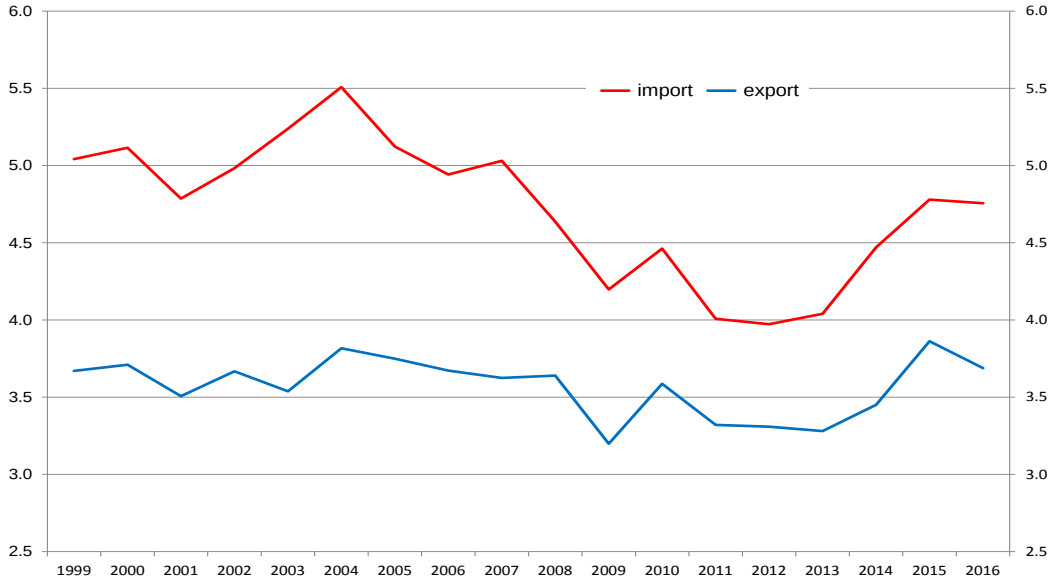
In 2016 Italy's balance of payments recorded a freight transport deficit of almost €6 billion, marginally up on last year. The country's consistent deficit is associated with the small market shares of Italian carriers in international freight transport; these shares fell slightly in almost all sectors, with the exception of the air freight and general cargo maritime sectors.

Transport costs amounted to 3.6 per cent of the value of the goods exported and to 4.7 per cent of that of imported goods (excluding those transported via pipelines, principally of imports of natural gas; Table 1). The brief upward trend observed in the two years 2014-15, after almost ten years of contraction in the *ad valorem* share of transport costs, appears to have come to a halt, especially for purchases of goods from abroad.

In 2016 air freight rates were down on 2015, owing to low fuel prices and weak world trade. These factors also affected the maritime sector, characterized by a glut in supply, at least for containers and liquid commodities transport, sectors in which there was a notable decline in freight rates; the longer this phase continues, the more profitability will suffer, with corporate crises of foreign firms in the shipping sector. By contrast, rail and road freight rates increased, benefiting from the favourable trends in the volumes transported in Europe.

Figure 1

Share of transport costs relative to Italian imports and exports (1)
(per cent)



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

(1) Excludes goods transported by pipeline; the costs include ancillary and logistical services linked to international transport and any transit routes supporting other forms of transport (container ships, bulk railways and containers). For 2016, provisional data.

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1. Introduction

As part of its activities directed at collecting information for compiling the balance of payments, since 1999 the Bank of Italy has conducted sample surveys of international freight transport operators. In 2016 around 200 transport firms operating in Italy took part in the survey.

The survey's main purpose is to estimate the unit cost of transport to and from Italy by how the freight is loaded. Carriers' market shares by nationality are also estimated. The tonnage of the imports and exports to and from Italy is estimated using Istat data on Italy's foreign trade. On the basis of the market shares and tonnage, the quantities transported by foreign and Italian carriers are calculated. The freight rates, multiplied by the quantities obtained, yield an estimate of the transport services purchased or sold abroad. Other elements, such as cross-trade by Italian carriers, play a role in the estimates.[1] The findings of the survey are also used to extend the data on foreign trade flows by type of cargo and to adjust the breakdown by mode of transport, which overestimates road transport to the detriment of other modes of transport, especially rail freight.[2]

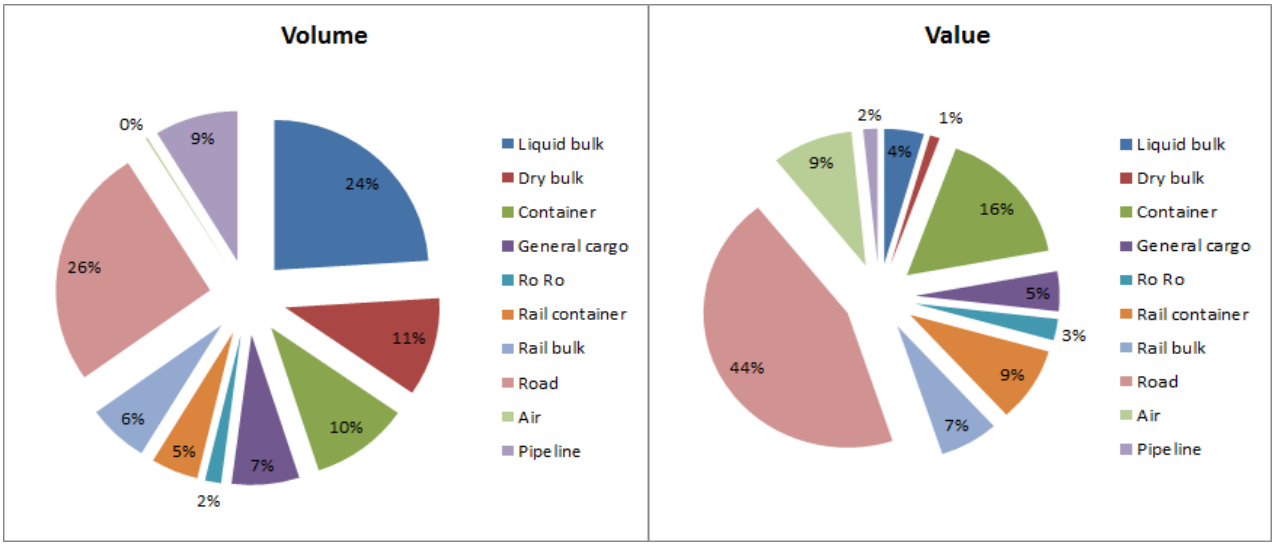
The next section illustrates the main findings of the 2016 survey by mode of transport and by area of origin/destination with reference to over 7,400 'standard consignments'.[3] Freight rates are shown at market prices in euros per metric tonne and include ancillary transport costs (cargo handling, motorway tolls, carrier fees etc.), for which data are also gathered in interviews with transport operators. In specific cases, the prices are reported in the currency in which they were negotiated – 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 the volumes transported; the trends over time accordingly also reflect the geographical composition of the quantities transported.

Individual modes of transport expressed as a share of the quantities and value of Italy's commercial trade in 2016 are shown in Figure 2.

Figure 2

Breakdown by mode of transport of Italy's commercial trade in 2016

(percentages, averages of imports and exports)



[1] For further insight into cross-trade, see the methodological note published on the Bank of Italy's website at http://www.bancaditalia.it/statistiche/tematiche/rapporti-estero/trasporti-internazionali/armatori.pdf (only in Italian).

[2] The data are reported in the Statistical Appendix and the method of correction is described in the Methodological Note.

[3] The survey of freight rates is quarterly for container ships and bulk transport, six-monthly for air, and annual for road freight, rail, and the remaining sea modalities; for the sake of brevity, only the annual averages are given.

Considering the volumes imported and exported, ships are the main form of transport (54 per cent of the total, compared with 26 per cent for road and 11 per cent for rail transport). In value terms, however, its share declined to 29 per cent, against 44 per cent for road freight and 16 per cent for railways. The share of air transport was significant only as a proportion of the value of trade (9 per cent) while for pipelines the opposite was true (2 per cent and 9 per cent in value and volume terms respectively).

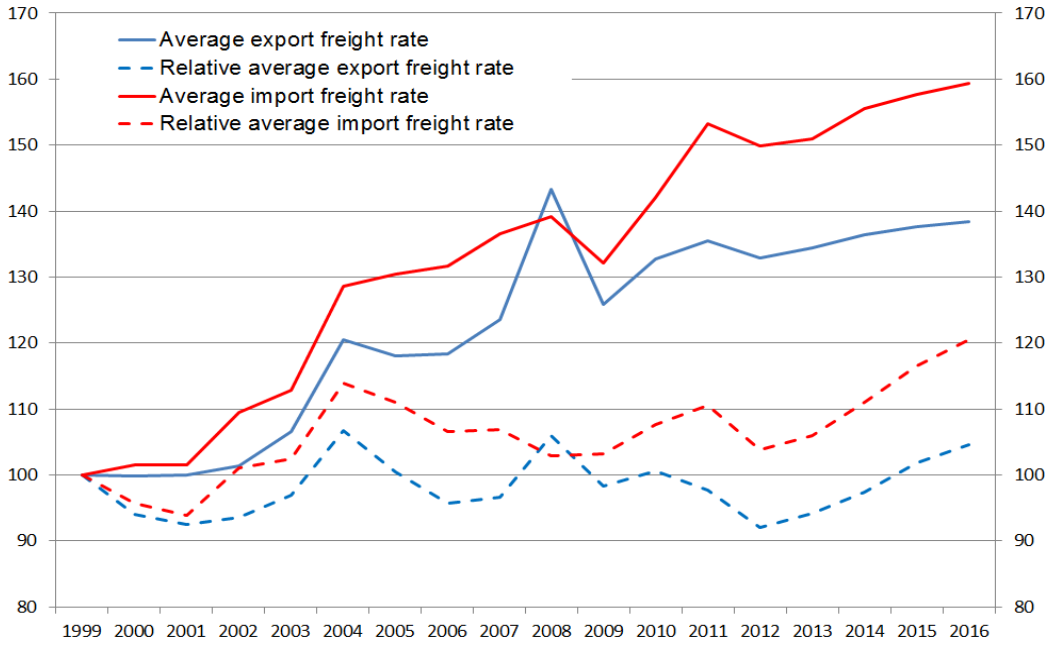
2. International freight rates

2.1 Road freight rates

Average road freight rates in euros per metric tonne between 1999 and 2016 show an upward trend in nominal terms, in particular for imports (Figure 3). Relative to the producer price index (PPI), by now export freight rates have risen to a level close to that reached in 2008, while those for imports stand at the highest levels recorded since the start of the time series.

Figure 3

Average road freight rates (1)
(euros/tonnes, 1999=100)



(1) The relative freight rates are obtained dividing by Istat's producer price index; the average freight rates by mode of transport are calculated as the average of the rates by area of origin/destination, weighted by the volumes transported.

In 2016 full truck load freight rates rise while groupage rates decline

Last year, against a background of rising volumes of transported goods, and of imports especially (Table A1 in the Appendix), there was a slight increase in average overall freight rates (Table 1). This reflected different trends for full truck load rates, which increased, and groupage rates, which declined. In 2014-15, instead, it was the growth in rates for groupage freight, which ultimately came to 40 per cent of the total volumes transported, that boosted the increase in road freight rates.

Full truck load freight rates (net of ancillary services) rose in almost all geographical areas of origin/destination of goods, including France and Germany, Italy's main trading partners. On the other hand, and especially with respect to these countries, groupage freight rates recorded the sharpest fall, leading to a significant decrease also in average overall rates. The other geographical areas, with the exception of the Balkans, instead registered an increase in total average rates, both for imports and exports.

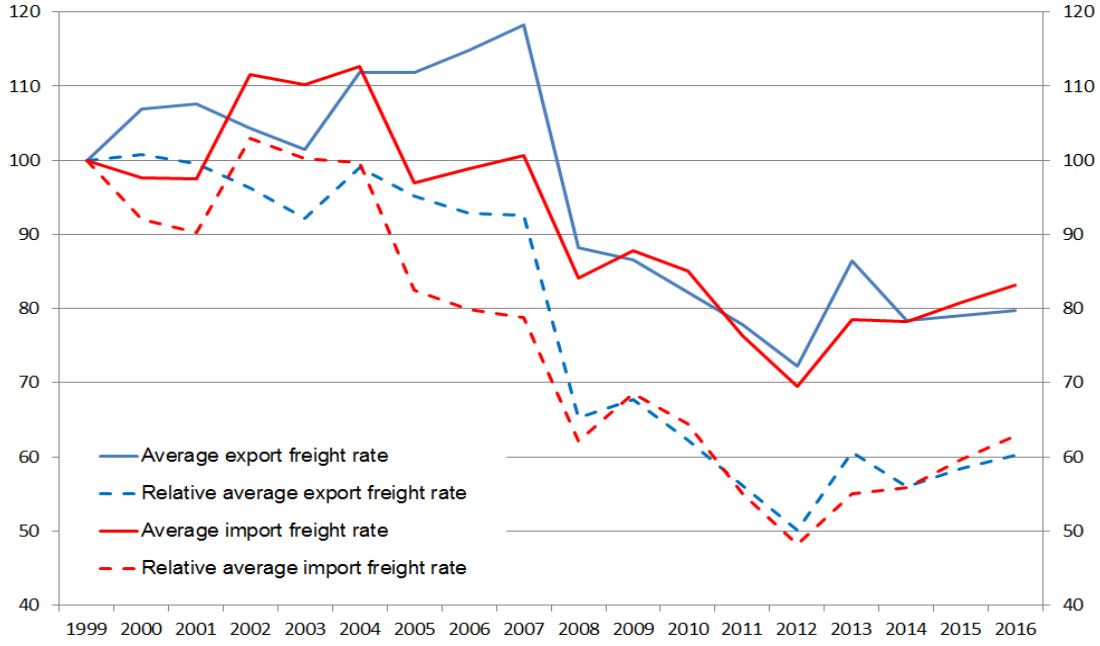
2.2 Rail freight rates

Despite making a modest recovery in recent years, average rail freight rates are still far off the levels recorded at the start of the last decade and continue to suffer from the steep drop recorded between 2008 and 2012 (Figure 4). The sector is increasingly contestable, with the market share of the former monopolist, the Italian state railways, in constant decline, while transport demand appears to have been hindered both by modal competition with road transport and by infrastructural shortcomings in interoperability between railways and the other transport modes.

Figure 4

Average rail freight rates (1)

(euros per metric tonne; averages, weighted by container and bulk transport flows, 1999=100)



(1) The relative freight rates are obtained dividing by Istat's producer price index; the average freight rates by mode of transport are calculated as the average of the rates by area of origin/destination, weighted by the volumes transported.

In 2016 rail freight rates go up

Container rail freight rates increased with respect to 2015 (Table 2), more markedly for imports (in concomitance with a modest increase in the volume of goods transported; Table A.1). These trends reflect very different patterns worldwide. While imports from the countries of Eastern Europe (including the former USSR countries and the Balkans) fell sharply, those from Italy's main trading partners instead recorded significant increases. For rail freight transport overall, price increases were lower for imports, owing to the greater share of bulk transport and slower growth of the relative freight rates.

2.3 Air freight rates

After falling sharply between 2008 and 2009, air freight rates returned to the levels preceding the global crisis and then declined again more recently (Figure 5). With respect to the producer price index, in 2016 they stood at the minimum recorded in 2009.

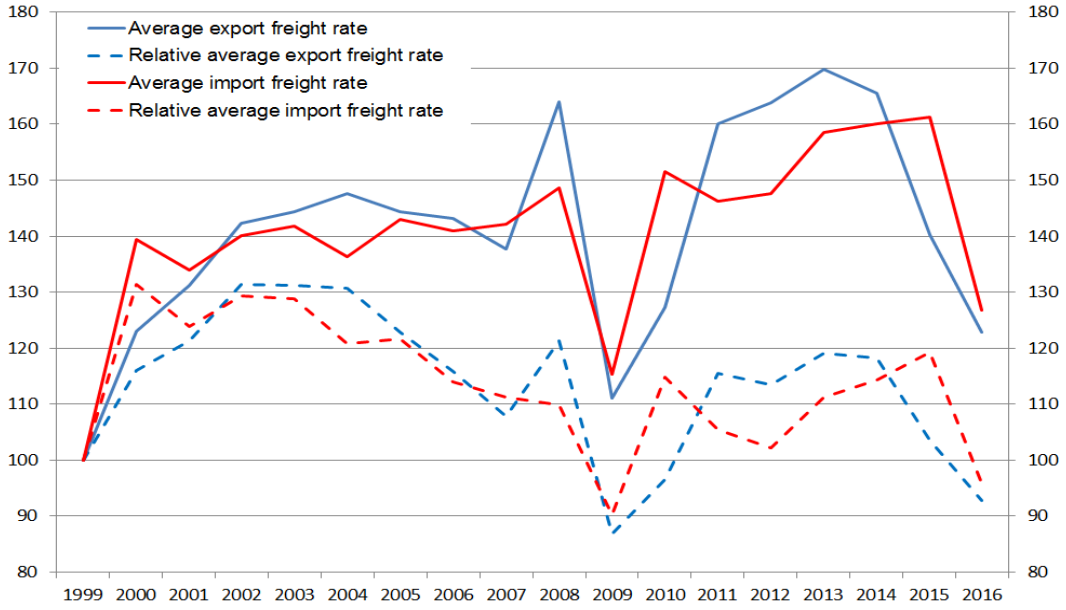
Air freight rates fall markedly

In 2016 air freight rates (including ancillary services) fell considerably with respect to 2015, both for exports and, more markedly, imports (Table 3). The reduction was quite widespread from a geographical perspective; in the first half of the year, it was mostly linked to the fall in fuel prices and the weakness of world trade, while in the second half of the year air freight rates were stable.

Figure 5

Average air freight rates (1)

(euros per metric tonne; averages, weighted by flows, 1999=100)



1) The relative freight rates are obtained dividing by Istat's producer price index; the average freight rates by mode of transport are calculated as the average of the rates by area of origin/destination, weighted by the volumes transported.

2.4 Sea freight rates

In order to account for the different features of the various market segments, data on sea freight rates are collected separately for each type of cargo (container, bulk, general and Ro-Ro; see the Methodological Note).

2.4.1 Container sea freight

In the past two years container sea freight rates, including ancillary services, have fallen considerably, after recovering in the previous three years (Figure 6). With respect to the producer price index, freight rates are a little higher than the lows recorded in 2009.

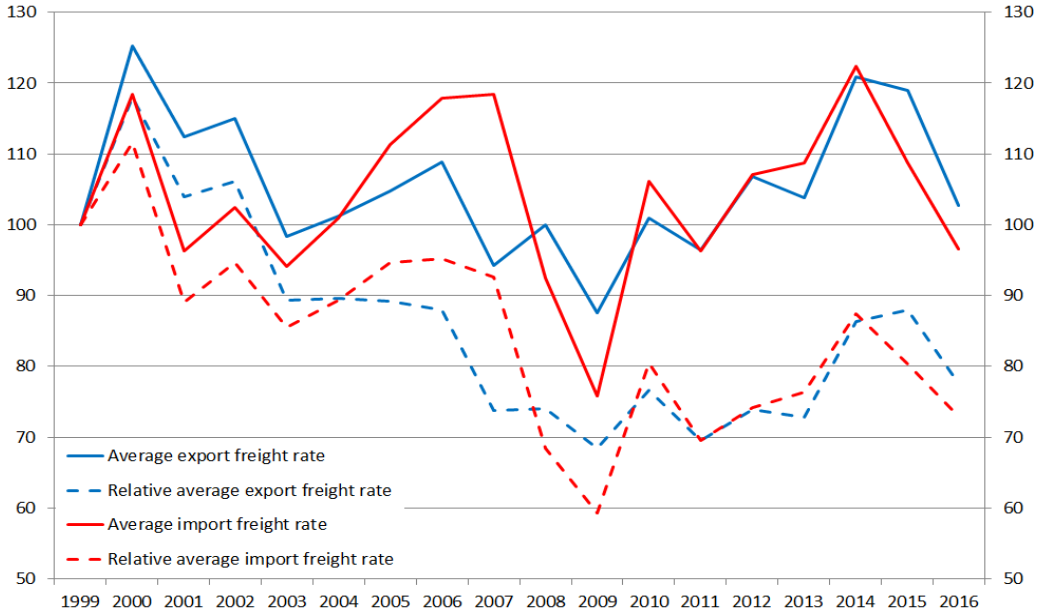
Container sea freight rates fall sharply

In 2016, even though the volumes transported increased for imports (Table A.1), the rates in euros per metric tonne fell by more than 10 per cent (Table 4). The market rates surveyed – in dollars per container (TEU, *twenty-foot equivalent unit*) and net of ancillary services – recorded

much steeper falls, averaging 35-40 per cent; taken together with the fall in fuel prices, the glut in the supply of cargo hold contributed to this outcome, by putting pressure on the sector's profitability and sparking a series of corporate crises of foreign carriers.

Figure 6

Average container sea freight rates (1)
(euros per metric tonne, 1999=100)



(1) The relative freight rates are obtained dividing by Istat's producer price index; the average freight rates by mode of transport are calculated as the average of the rates by area of origin/destination, weighted by the volumes transported.

2.4.2 Bulk sea freight (liquid and dry)

Turning to average bulk sea freight (including ancillary services), the downward trend that followed the peak in dry bulk cargo at the start of 2008 came to a halt (Figure 7); the market may have struck a balance between cargo demand and supply, which declined following the faster pace of shipping divestment. Relative to the producer price index, the level returned to that recorded at the start of the last decade, prior to the extended phase of price increases linked to greater demand in China and from the other emerging countries. Liquid bulk freight rates recorded similar, if less marked, trends; the signs of a recovery recorded in 2015 appeared to recede in 2016, suggesting the market is still struggling to find a good balance between cargo demand and supply.

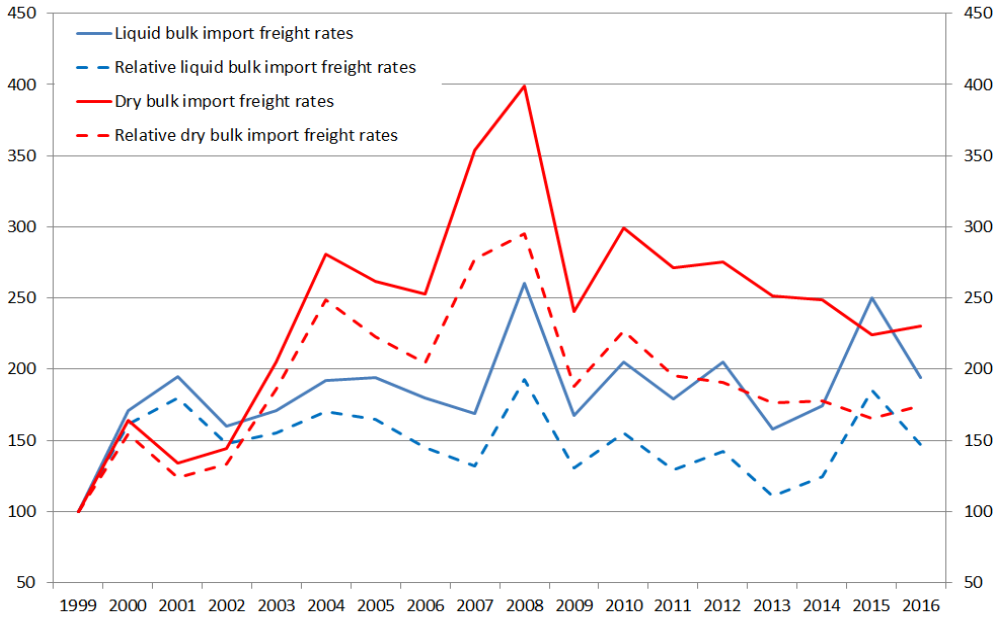
Bulk freight rates decline, except those for transporting coal and minerals

In 2016, as the volume of trade in oil and oil products remained stable (Table A.1), both dollar- and euro-denominated freight rates declined, especially for the transport of oil and oil products. The reduction is linked to that in operating costs (fuel prices) and does not appear to have dampened the profitability of ship owners; medium and long-term agreements continue to decline, however (time charters for two to 3 years), leading to increased volatility of prices.

Regarding the dry bulk sector, in conjunction with a slight increase in the volumes imported, in 2016 market freight rates (denominated in dollars and excluding auxiliary services) rose for the transport of coal and minerals while they fell for agricultural commodities. Trends in euros per metric tonne (including auxiliary services) were similar (Table 5). In the fossil commodities sector, the downward trend in freight rates came to end, which are now at rather low levels compared with the costs of operating the fleets (notwithstanding lower fuel costs).

Figure 7

Average sea freight rates: *bulk* imports (liquid and dry) (1)
(euros per metric tonne, 1999=100)



(1) The relative freight rates are obtained dividing by Istat's producer price index; the average freight rates by mode of transport are calculated as the average of the rates by area of origin/destination, weighted by the volumes transported.

2.4.3 General cargo and Ro-Ro

The decline in general cargo freight rates comes to a halt

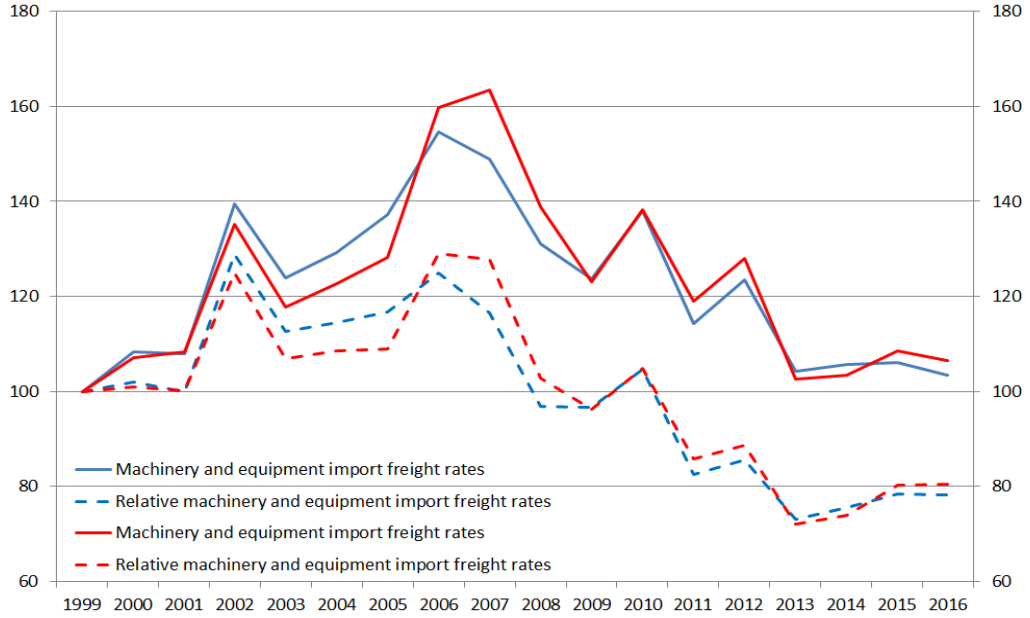
With regard to the goods sectors of greatest interest (i.e. the transport of machinery, equipment and transport equipment), though at historically low levels, trends in average general cargo freight rates (including auxiliary services and measured in euros per metric tonne), remained basically stable in the last three years. This was after the sharp decline that followed the peak of 2006-07 (Figure 8).

Notwithstanding an increase in the volumes imported via general cargo (Table A.1), freight rates denominated in euros per metric tonne came down (Table 6) as a result of lower operating costs.

In 2016, while the volumes transported remained unchanged overall (Table A.1), Ro-Ro sea freight rates (i.e. the transport of road vehicles by ship, usually in the Mediterranean area) recorded a small increase overall, though with very different trends across geographical areas: routes to Greece and Spain experienced a sharp decline, those towards the Balkans rose sharply, and those for the other areas involved in this type of transport remained stable (Table 7).

Figure 8

Average sea freight rates: general cargo (1)
(transport of machinery and equipment; euros per metric tonne, 1999=100)



(1) The relative freight rates are obtained dividing by Istat's producer price index; the average freight rates by mode of transport are calculated as the average of the rates by area of origin/destination, weighted by the volumes transported.

2.5 Natural gas transport costs

For the first time as part of the sample survey, last year data was collected on the costs of transporting natural gas via pipeline, mostly in the form of imports. In previous years analysis was based on the information provided directly by the companies of the group that managed the natural gas pipelines; with the liberalization of the market, more operators can buy and import this commodity into Italy, which is why it has become necessary to extend the inquiry to this sector, which is highly concentrated.

The prices reflect the costs sustained by the place of sale (and not of production) up to the point of entry to Italy (Table 8). In particular, for Russian gas the point of supply is located at the border between Austria and the Slovak Republic, for Algerian gas on the border between Algeria and Tunisia, for gas from Norway and the Netherlands, at the border between Germany and the Netherlands and for Libyan gas on the Libyan coastline. Transport costs tend to remain fixed irrespective of quantities (*take or pay contracts*); fluctuations in unit prices accordingly depend on the actual volumes imported with respect to those negotiated.

3. Carriers' market shares

Starting in 2002 a special section of the survey has focused on estimating the distribution of international freight trade to and from Italy between Italian and foreign carriers.

For air transport the data are drawn from administrative sources, while for those by ship and road specific sample surveys are used. The latter constitute an innovative source of information, including in the international arena, insofar as the statistical information available for the maritime sector often refer to the ship owner and not the actual ship operator, on the basis of which residence is determined for the purposes of the balance of payments (see Methods and sources:

methodological note).

On average the market shares of Italian carriers have declined slightly

In 2016 the average market share of Italian carriers in the maritime sector, which by now stand at just over 9 per cent (Table 9) continued to decline; in the container sector, resident ship owners are practically absent. In the road transport sector the share of Italian carriers fell to 22.2 per cent, reprising a downward trend which had come to a halt in 2015. The air transport sector, instead, registered a small recovery, rising to 17.3 per cent.

Also considering the market shares estimated for foreign sea carriers, the main ship-owning companies in the container transport sector are of Swiss nationality (Table 10); in the bulk sectors Greek ship owners habitually occupy first place (with a very high share in liquid bulk), while Italy is ranked second (liquid bulk) and fourth (dry bulk). For general cargo transport the Turkish carriers are ranked first (Italians fourth) and in Ro-Ro the resident ship owners are in second position, overtaken by the Turkish ship owners for the first time.

4. Transport balance of payments

As mentioned in the introduction, the market shares form the basis for assigning the quantities (see Table A.1) of goods transported by foreign and Italian carriers. The freight rates, multiplied by these quantities, enable an estimation to be made of the transport services purchased from and sold abroad; other items are also included in this estimate, such as cross-trade by Italian ship owners in the shipping sector.

In 2016 the deficit on the sea freight balance of trade widens slightly

Given the low share of Italian carriers, the mercantile transport balance of payments has a structural deficit that between 2007 and 2016 has almost always oscillated between €5 billion and €6 billion (Table 11).

In 2016 the deficit widened slightly with respect to the previous year; the significant worsening in the road balance of payments, linked to the fall in the share of Italian carriers, more than made up for the reduction in the deficits of all the other sectors.

The drop in the majority of maritime freight rates reduced both the payments made to foreign carriers and the revenues realized by Italian carriers, including those deriving from the transport of goods outside of Italy's commercial cross-trade.

Tables

The source of the data for all the charts and tables in this section is the survey on Italy's international freight transport conducted by the Bank of Italy.

Table 1

Average road freight rates (FTL and groupage)
(2016)

Geographical area	Average freight rates (all loads) *(including auxiliary services)*				Freight rates (FTL and groupage) *(average export and import; excluding auxiliary services)*			
	Exports (euro/tonne)	Per cent change on 2015	Imports (euro/tonne)	Per cent change on 2015	FTL (euro/vehicles)	Per cent change on 2015	Groupage (euro/tonne)	Per cent change on 2015
Austria – Switzerland	116	11.2	116	11.2	1,087	-0.2	195	1.9
Benelux	126	8.3	126	8.3	1,663	3.8	189	3.1
Eastern Europe (1)	117	8.5	107	4.5	1,252	-1.8	182	-1.5
France	103	-11.0	104	-10.5	1,328	7.6	159	-24.5
Germany	108	-9.5	107	-10.2	1,394	9.3	165	-23.7
Greece – Turkey	143	-4.0	140	9.2	2,158	7.8	206	-0.8
Balkans	101	-15.6	102	-16.1	1,213	-9.7	166	-24.0
Baltic countries	159	15.7	160	13.6	2,445	22.9	236	5.2
Former USSR	216	8.4	197	16.8	3,957	7.1	261	14.0
UK – Ireland	197	6.3	178	20.8	2,585	1.5	296	15.3
Scandinavia	171	22.6	171	20.1	2,646	11.8	246	18.6
Spain – Portugal	127	17.3	118	17.8	1,740	5.8	185	20.1
Weighted average (2)	**121**	**0.5**	**116**	**1.1**	**1,519**	**4.7**	**185**	**-8.4**

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

Table 2

Rail freight rates: total and container
(2016)

Geographical area	Average freight rates (all loads)				Container freight rates			
	Exports (euro/tonne)	Per cent change on 2015	Imports (euro/tonne)	Per cent change on 2015	Exports (euro/tonne)	Per cent change on 2015	Imports (euro/tonne)	Per cent change on 2015
Austria – Switzerland	38.3	8.2	36.1	8.5	46.0	5.5	46.0	5.7
Benelux	47.2	8.3	46.7	13.5	53.0	5.8	55.0	12.7
Eastern Europe (1)	57.8	-18.7	56.9	-12.9	62.0	-18.5	66.0	-7.4
France	44.2	7.3	40.6	10.0	51.0	7.1	52.0	10.4
Germany	43.1	10.6	41.7	8.7	52.0	10.6	51.0	6.7
Greece – Turkey	62.0	21.5	58.4	13.6	69.0	21.3	65.0	8.5
Balkans	61.7	-26.2	67.5	-5.3	68.0	-22.9	77.0	-1.3
Baltic countries	103.4	-12.3	94.5	-26.6	116.0	-4.9	105.0	-22.1
Former USSR	112.5	-19.3	109.8	-14.9	117.0	-18.0	123.0	-8.8
UK – Ireland	52.9	13.7	51.0	13.3	59.0	11.7	58.0	8.8
Scandinavia	58.6	15.1	57.0	23.1	63.0	11.1	64.0	14.1
Spain – Portugal	48.4	8.2	48.0	17.0	54.0	2.9	58.0	17.6
Weighted average (2)	**48.5**	**0.9**	**46.8**	**2.9**	**55.6**	**1.1**	**56.1**	**4.7**

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

Table 3

Air freight rates

(2016)

Geographical area	Exports		Imports	
	Freight rates (euro/tonne)	Per cent change on 2015	Freight rates (euro/tonne)	Per cent change on 2015
Europe	1,875	9.2	1,875	9.3
Russia	2,000	22.8	2,000	20.5
Mediterranean and Middle East	1,445	-15.6	1,445	-13.2
Rest of Africa	2,395	0.2	2,395	17.4
India	1,215	-14.5	3,330	14.6
Indonesia – Singapore	1,320	-13.3	2,590	-26.3
China	1,125	-13.2	2,510	-31.3
Japan – Korea	1,600	-12.4	1,860	-44.1
Oceania	2,985	-5.1	2,985	-5.1
United States and Canada	1,475	-20.6	1,635	-14.8
Central and South America	2,455	-12.0	3,100	11.1
Weighted average (1)	**1,544**	**-12.4**	**2,228**	**-21.4**

(1) The weights are based on the volumes transported.

Table 4

Container sea freight rates

2016

Geographical area	Freight rates (including auxiliary services)				Freight rates (excluding auxiliary services)			
	Exports (euro/tonne)	Per cent change on 2015	Imports (euro/tonne)	Per cent change on 2015	Exports (dollar/TEU)	Per cent change on 2015	Imports (dollar/TEU)	Per cent change on 2015
Europe	73.9	-31.0	77.9	-25.0	235.3	-54.4	233.5	-54.6
Mediterranean	113.4	14.8	117.6	22.9	369.1	-16.6	359.7	-18.5
Rest of Africa	122.2	-20.7	129.3	-13.0	774.7	-35.3	769.2	-35.7
Middle East	105.1	-11.4	109.9	-4.1	413.9	-40.5	408.8	-41.1
India	114.0	-1.2	110.4	5.6	548.2	-25.0	431.0	-32.7
South East Asia	76.8	-7.5	109.1	-12.2	202.3	-28.0	546.2	-36.2
China and Japan	72.9	-11.5	102.5	-13.9	138.5	-46.4	456.0	-41.2
Oceania	104.7	-39.6	110.0	-34.4	580.2	-52.6	568.0	-53.5
USA and Canada	149.4	-20.6	135.4	-9.6	816.3	-40.0	551.7	-40.8
Central America	136.5	-13.6	144.4	-5.3	919.0	-23.8	912.5	-24.2
South America	103.6	-25.7	108.7	-19.5	477.5	-46.1	470.7	-46.8
Weighted average (1)	**106.6**	**-13.6**	**107.5**	**-11.2**	**450.7**	**-36.9**	**442.2**	**-40.7**

(1) The weights are based on the volumes transported.

Table 5

Liquid and dry bulk sea freight rates

(2016)

Type of ship		Average import freight rates			
		Euro/tonne (including auxiliary services)	Per cent change on 2015	Euro/tonne (excluding auxiliary services)	Per cent change on 2015
Liquid loads	Oil and oil products/	12.4	-23.3	11.7	-24.9
	chemical products	69.7	-11.7	70.0	-12.7
Dry loads	Coal/minerals/	17.0	4.9	8.8	7.4
	grains	28.5	-6.1	16.1	-12.5

Table 6

General cargo sea freight rates

(2016)

Type of freight	Exports		Imports	
	Freight rates (euro/tonne)	Per cent change on 2015	Freight rates (euro/tonne)	Per cent change on 2015
Plant, machinery and transport equipment (1)	227.8	-1.9	225.7	-2.6
Chemical products, building materials, forestry products	70.0	-4.8	75.7	-9.4
Pipes and metallic materials (2)	66.0	1.8	69.1	-6.6

(1) 'Plant, machinery and transport equipment' means categories 11 (Machinery and equipment) and 12 (Transport equipment) of the NST2007 Classification – (2) 'Metallic tubes' mean category 10 (Basic metals; fabricated metal products, except machinery and equipment) of the NST2007 Classification.

Table 7

Ro-Ro sea freight rates

(2016)

Geographical area	Average freight rates *(exports and imports, including auxiliary services)*	
	Freight rates (euro/tonne)	Per cent change on 2015
Balkans	31.4	19.1
France	25.0	-0.1
Greece	39.9	-10.9
North Africa	130.8	0.0
Spain	53.3	-6.7
Tunisia-Malta	63.4	0.1
Turkey	73.3	0.1
Weighted average (1)	**100.7**	**0.3**

(1) The weights are based on the volumes transported.

Table 8

Transport via pipeline

(2016)

Point of entry	Countries that produce natural gas	Freight rates (euro/tonne)
Tarvisio	Russia	14.4
Passo Gries	Norway and the Netherlands	98.2
Mazara del Vallo	Algeria	31.0
Gela	Libya	31.1
Weighted average (1)		**30.9**

(1) The weights are based on the volumes transported.

Table 9

Market shares of Italian carriers for imports and exports of goods from Italy

(weighted by the volumes transported; per cent)

	Ship						Road	Air
	Liquid bulk	Dry bulk	Container	General cargo	Ro-Ro	Average (1)		
2002	23.3	8.0	16.0	16.0		17.5	33.0	34.7
2003	27.7	10.3	11.9	24.4		20.6	33.0	24.5
2004	19.4	12.9	5.7	14.6		15.0	36.1	23.6
2005	20.8	8.6	8.9	17.7		15.5	35.2	29.3
2006	19.6	15.5	9.3	16.7		16.5	34.7	30.3
2007	21.5	13.6	7.9	17.9		17.0	32.1	30.2
2008	18.2	12.1	10.6	18.6	25.0	15.8	30.7	26.3
2009	21.2	12.2	5.5	16.7	23.8	16.6	28.6	17.4
2010	18.9	8.8	1.6	10.0	32.2	14.1	27.9	21.5
2011	18.0	12.7	2.8	12.9	27.4	13.9	27.4	20.6
2012	16.6	13.6	3.2	11.6	23.8	13.2	26.4	19.2
2013	13.8	12.2	2.7	10.1	29.7	11.5	25.7	15.7
2014	13.7	12.1	2.5	10.5	39.7	11.6	25.3	16.9
2015	10.7	8.9	2.8	9.7	34.1	9.4	26.8	16.3
2016	10.8	8.7	1.0	11.4	26.7	9.1	22.2	17.3

(1) The weights are based on the volumes transported.

Table 10

Market shares by nationality of naval carriers in 2016

(percentages, imports and exports of goods from Italy via ship)

Container		Dry bulk		Liquid bulk		General cargo		Ro-Ro	
Switzerland	29.7	Greece	18.9	Greece	34.9	Turkey	23.3	Turkey	29.8
Israel	9.1	Turkey	10.5	**Italy**	**10.8**	Norway	14.3	**Italy**	**26.7**
Kuwait	9.0	Germany	9.9	United States	8.5	Germany	13.8	Greece	16.0
Denmark	8.8	**Italy**	**8.7**	UK	6.8	**Italy**	**11.4**	Japan	7.0
France	7.2	Japan	8.2	Turkey	6.5	Netherlands	7.6	Norway	4.9
China	6.7	United States	7.0	Denmark	4.6	UK	5.1	Ukraine	3.4
Germany	6.5	China	4.0	Russia	4.5	Russia	3.5	Switzerland	2.2
Singapore	3.9	Canada	3.4	Hong Kong	3.9	Ukraine	2.1	Tunisia	2.1
Japan	3.8	Denmark	3.2	Canada	2.1	Albania	2.0	Sweden	2.0
Taiwan	3.6	Isle of Man	3.2	Japan	2.0	Denmark	2.0	Belgium	1.6
South Korea	3.3	Switzerland	2.7	Netherlands	1.6	Switzerland	2.0	Taiwan	0.7
Greece	1.3	Poland	2.3	Cyprus	1.5	Singapore	1.3	Not classified	0.6
Netherlands	1.2	Taiwan	1.8	Monaco	1.4	Greece	1.3	Denmark	0.6
Hong Kong	1.1	Bermuda	1.7	Romania	1.2	Bulgaria	1.0	Croatia	0.6
Italy	**1.0**	Bulgaria	1.6	Germany	1.1	Spain	0.9	Saudi Arabia	0.5
UK	0.9	Russia	1.6	Libya	0.9	Japan	0.8	France	0.4
Turkey	0.7	Hong Kong	1.5	Finland	0.8	United States	0.7	Montenegro	0.3
Partial total	*97.8*	*Partial total*	*90.2*	*Partial total*	*93.0*	*Partial total*	*93.0*	*Partial total*	*99.4*
Other countries	2.2	Other countries	9.8	Other countries	7.0	Other countries	7.0	Other countries	0.6
Total	***100.0***	***Total***	***100.0***	***Total***	***100.0***	***Total***	***100.0***	***Total***	***100.0***

Table 11

Balance on freight transport account

(millions of euros)

Flows	Mode of transport	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Credits	Ship	4,948	4,987	3,585	4,641	3,948	4,006	3,887	3,601	4,058	3,727
	of which: cross-trade	*3,000*	*3,426*	*2,395*	*3,217*	*2,587*	*2,468*	*2,518*	*2,132*	*2,346*	*1,794*
	Air	446	348	191	701	296	281	289	299	286	287
	Road	2,810	2,906	2,260	2,779	2,733	2,502	2,761	2,889	3,034	2,955
	Rail	35	41	32	32	29	29	26	28	30	30
	Pipeline	-	5	5	5	6	6	6	10	11	12
	Total	**8,240**	**8,287**	**6,073**	**8,158**	**7,011**	**6,823**	**6,969**	**6,828**	**7,420**	**7,011**
Debits	Ship	8,126	7,407	4,452	6,685	5,836	5,626	5,312	5,276	5,959	5,460
	Air	704	642	542	1,103	645	646	808	864	817	740
	Road	4,290	4,490	3,782	4,776	5,062	4,775	5,131	5,262	5,423	5,956
	Rail	565	333	295	370	334	289	342	378	414	334
	Pipeline	485	593	577	422	542	533	639	574	587	488
	Total	**14,169**	**13,465**	**9,648**	**13,357**	**12,420**	**11,868**	**12,231**	**12,354**	**13,200**	**12,979**
Balances	Ship	-3,178	-2,420	-867	-2,045	-1,889	-1,620	-1,425	-1,676	-1,901	-1,732
	Air	-258	-294	-351	-403	-350	-365	-519	-565	-531	-454
	Road	-1,480	-1,585	-1,522	-1,997	-2,329	-2,273	-2,371	-2,373	-2,388	-3,001
	Rail	-530	-292	-263	-338	-305	-260	-316	-350	-384	-304
	Pipeline	-485	-588	-572	-416	-537	-527	-633	-563	-576	-476
	Total	**-5,929**	**-5,178**	**-3,575**	**-5,199**	**-5,409**	**-5,044**	**-5,263**	**-5,526**	**-5,780**	**-5,967**

Statistical Appendix

Table A.1

Exported and imported volumes by mode of transport

(millions of tonnes)

Imports	Sea					Rail		Road	Air	Pipeline
	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	
2000	129.7	60.1	17.8	20.7		9.8	17.6	38.4	0.5	
2001	124.3	61.1	17.1	21.6		9.9	17.6	40.2	0.4	
2002	121.4	59.9	17.0	21.7		9.8	17.0	42.3	0.3	
2003	117.7	62.7	18.2	22.5		10.1	17.2	44.4	0.4	
2004	114.3	69.8	17.8	23.6		10.7	17.9	47.9	0.4	
2005	113.7	66.5	17.3	23.1		10.8	17.9	50.0	0.4	
2006	111.0	65.8	20.0	23.8	5.1	11.6	19.1	53.9	0.4	
2007	114.0	70.3	21.8	25.0	4.9	11.9	19.9	58.4	0.4	
2008	106.7	68.1	20.8	22.7	4.6	11.0	18.6	54.3	0.3	
2009	99.1	48.9	16.9	14.9	4.2	9.3	15.9	47.9	0.3	
2010	106.0	51.0	21.0	20.3	4.2	10.7	19.1	55.7	0.3	
2011	97.8	55.2	20.2	21.3	4.4	10.7	18.9	55.8	0.3	
2012	78.9	51.4	16.6	17.7	3.9	10.1	17.3	52.7	0.3	
2013	81.9	47.3	17.4	18.4	3.3	11.2	18.0	53.5	0.3	
2014	73.9	44.7	18.2	19.4	3.3	11.8	19.0	55.9	0.3	
2015	84.5	43.3	18.6	21.2	3.3	11.8	18.7	57.1	0.3	39.7
2016	84.8	43.7	19.3	21.9	3.5	12.0	19.4	58.4	0.4	38.8
Exports	**Sea**					**Rail**		**Road**	**Air**	**Pipeline**
	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	22.6	4.1	27.0	10.0	4.2	10.5	8.8	57.3	0.5	0.1
2016	22.4	3.8	27.0	9.7	4.0	10.2	9.3	57.5	0.5	0.1

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

Note: provisional data for 2016.

Table A.2

Value of goods exported and imported by mode of transport

(billions of euros)

Imports	Sea					Rail		Road	Air	Pipeline
	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	31.0	7.5	51.2	19.9	7.3	31.4	27.1	150.9	26.6	15.5
2016	25.4	7.1	51.1	18.7	8.6	31.9	28.5	154.6	26.4	12.1
Exports	**Sea**					**Rail**		**Road**	**Air**	**Pipeline**
	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	11.1	1.5	76.4	18.8	11.1	36.9	22.3	186.0	43.0	0.3
2016	9.1	1.4	77.8	18.4	11.4	37.6	23.0	190.9	44.5	0.4

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

Note: provisional data for 2016.

Average unitary values by mode of transport

(euro/tonne)

Imports	Ship					Rail		Road	Air	Pipeline
	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	368	174	2,747	939	2,206	2,653	1,445	2,642	96,224	391
2016	300	163	2,649	854	2,418	2,668	1,470	2,646	70,684	310
Exports	Ship					Rail		Road	Air	Pipeline
	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	490	359	2,829	1,875	2,666	3,524	2,531	3,249	85,039	2,035
2016	406	368	2,881	1,899	2,881	3,692	2,477	3,322	82,291	3,198

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

Note: provisional data for 2016.

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