

# An Analysis of Short Sea Shipping Container Routes in the Mediterranean and in the Black Sea

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*Abstract:* In this paper, an analysis of SSS container routes in the Mediterranean and Black Sea region, with a focus on those routes calling at Italian ports, is performed. Italian container ports are classified in four groupings: Ligurian, north Adriatic and Campanian multi-port gateway clusters, and Italian hub port system. Firstly, the Italian maritime foreign trade is analyzed and it is compared to the total Italian foreign trade carried out by all means of transport. This survey has been accomplished in order to study the effects of the economic and financial crisis in Italy (which began in 2008 and is currently in force) on maritime transport. Then, the container throughput at all Italian ports is studied. From this study, it emerges that the most important Italian port cluster is the Ligurian one: its throughput has shown a positive trend; but the greatest growth rate is shown by the north Adriatic gateway cluster. Italian hub ports register instead a negative trend. Afterwards, SSS container routes of the year 2018 are analyzed. The detected routes are extensively reported in the Appendix of the paper. SSS container routes calling at Italian ports in the year 2018 are compared with those of 2010. The routes comparison has shown that, from 2010 to 2018, the number of routes crossing at least one Italian port, and their frequencies per month have decreased, but, for the majority of Italian ports, the number of routes and the frequencies per month have increased. This occurs because, from 2010 to 2018, routes have increased their length and the number of ports called. Among Italian port clusters, the most important is by far the Ligurian one, as regards both routes and departures, but also the northern Adriatic port cluster is important as regards SSS routes. While the Ligurian gateway cluster is crossed by several DSS routes, the north Adriatic traffic mainly relies on SSS and feeder routes, with transshipment in the Mediterranean hub ports of Gioia Tauro, Malta, Piraeus and Port Said.

*Key-Words:* Short Sea Shipping, SSS, lo-lo, container transport, Mediterranean Sea, Italian ports, maritime routes, Mediterranean routes, container routes.

## 1 Introduction

Short Sea Shipping (SSS) has been defined by the European Commission (1999) [1]: ‘the movement of cargo and passengers by sea between ports situated in geographical Europe or between those ports and ports situated in non-European countries having a coastline on the enclosed seas bordering Europe. Short Sea Shipping includes domestic and international maritime transport, including feeder services, along the coast and to and from the islands, rivers and lakes. The concept of Short Sea Shipping also extends to maritime transport between the Member States of the Union and Norway and Iceland and other States on the Baltic Sea, the Black Sea and the Mediterranean’.

The European Commission has also identified two main SSS regions in Europe: a first region which includes ports located in the North Sea and Baltic

Sea; a second region includes the Mediterranean and Black Sea ports. To the first region belong all the main northern European ports, in particular those of the so-called ‘northern range’: ports from Le Havre to Hamburg. The second region instead includes Mediterranean and Black Sea ports, which are the object of this study.

A port is defined by Notteboom and Rodrigue [2] as ‘a transit area through which goods and people move from and to the sea’. Therefore a port could be seen as the connexion point between maritime and inland transport: briefly, it is an ‘access gate’ to its hinterland. Van Klink and Van Den Berg [3] define as gateway: a node, of a transport network, in which intercontinental traffic flows transfer to links travelled by continental traffic flows, and vice versa. Generally there are multiple ports providing access by sea to a specific region: they can be grouped in

'multi-port gateway regions' (Notteboom [4]). In Notteboom [5] the major European multi-port gateway regions, with regard to container handling, and the hub ports (defined as ports where the incidence of transshipment operation is greater than 75%) are identified.

Basing on this classification, the Italian container ports can be grouped as follows:

- Ligurian multi-port gateway system. It consists of the ports of: Genoa and Savona, which are at an extreme of the Rhine-Alpine Corridor; La Spezia and Livorno, which are along the Scandinavian-Mediterranean Corridor;
- North Adriatic multi-port gateway system: it consists of the ports of Ancona, Ravenna, Venice, Trieste; these ports are at an extreme of the Baltic-Adriatic corridor;
- Campania gateway system: it consists of the ports of Naples and Salerno;
- Italian hub port system: Gioia Tauro and Cagliari. In the past also Taranto used to be part of the Italian hub port system but, currently, its container terminal is no longer in operation.

There are other ports, in Italy, where container traffic plays a not insignificant role, in particular: Civitavecchia, Bari, Palermo, Trapani and Catania. Notably, Civitavecchia, which was almost negligible as a container port, is currently crossed by some SSS and DSS (Deep Sea Shipping) container routes.

The ports of the Ligurian and northern Adriatic gateway systems are the main access gates to the Padan Plain, which is the most industrialized part of Italy. In addition, as reported in Acciaro et al. [6], Ferrari et al. [7] and Lupi et al. [8], they are in a favorable position, on the land side, among Mediterranean ports, to reach several Central-Southern and Central-Eastern European destinations. Ligurian gateway ports are in an advantageous position, among Mediterranean ports, to reach Switzerland and southern Germany, while the northern Adriatic ports of Venice and Trieste are in a favorable position, among Mediterranean ports, to reach southern Germany and Austria; the Adriatic ports of Koper and Rijeka are in an advantageous position, among Mediterranean ports, to get to Central-Eastern European destinations. All these ports are in competition against northern range ones, for all the above mentioned destinations.

Northern Italian ports are already making several attempts to improve their competitiveness, as stated in Lupi et al. [9]: a whole network of rail connections, transporting maritime containers, is based on the port of Trieste and links this port to several destinations in Austria, Germany and

Hungary; while another network of rail connections is based on the port of La Spezia, linking this port to several destinations in Switzerland and Germany.

In the Mediterranean region, Italian ports do not occupy the most remarkable positions with regard to container traffic. In 2017, the main Mediterranean port for container traffic was Valencia with a traffic of about 4.8 million TEUs, of which 2.63 were transshipment traffic (source: Valencia port authority [10], p.11). The other main Mediterranean ports have resulted: the hub ports of Algeciras (4.3 million TEUs), Piraeus (4.0 million TEUs), Tanger Med (3.5 million TEUs), Marsaxlokk (it is the port of Malta, and it will be referred as simply 'Malta' in the following; 3.15 million TEUs) (source: Assoport [11]); the gateway port of Barcelona (3.0 million TEUs, of which 1.1 were transshipment traffic; source: Barcelona port authority [12], p. 9). The most important Italian ports, Genoa and Gioia Tauro, recorded only, respectively, 2.6 and 2.45 million TEUs in 2017 (source: Assoport [13]). However the trend of Genoa has been very positive in the last years: this port has the potential of increasing its importance in the Mediterranean area.

Italian ports are still not very developed in several aspects which affect port competition. Indeed, as for freight rates demanded by shipping companies, Italian and Mediterranean ports are disadvantaged respect to northern European ones. For example, on the Far East – Europe route, the freight rates demanded by shipping company to serve Mediterranean ports are higher than those to serve northern European ports (source: [14]); although the distance of northern European ports to the Far East is greater. Furthermore Italian ports are less competitive than several main Mediterranean ports from other numerous points of view (Musso et al. [15]). In particular: price for port operations, port capacity, productivity of port terminals (for example number of crane movements per hour), reduced competition among companies operating in the ports.

In any case, the traffic of Valencia, the main Mediterranean container port, of 4.8 million TEUs, is much less than that of Rotterdam (13.7 million TEUs), Antwerp (10.45 million TEUs) and Hamburg (8.8 million TEUs).

As far as Black Sea ports are concerned, they are not very important in the overall Mediterranean scenario, as regards container traffic, apart from Istanbul Ambarli, which is actually located in the Marmara Sea. This port recorded a traffic of 2.8 million TEUs in 2016 (2017 data are not available), while the only remarkable Black Sea port is

Novorossiysk (Russia), which recorded almost 600,000 TEUs in 2017 (source: Assoport [11]).

In this paper, lo-lo containerized SSS routes in the year 2018 in the Mediterranean and Black Sea are analyzed, furthermore they are compared with those recorded in 2010. In the comparison, between 2010 and 2018, only routes calling at Italian ports are taken into account.

In the following section (section 2), the trend of Italian trade by sea, and of Italian container traffic in the last years, is examined.

In section 3, SSS Mediterranean – Black Sea container routes, in the period from May to June 2018, are described and their main characteristics are outlined.

In section 4, SSS container routes calling at Italian ports in 2018 are compared with those recorded in 2010.

Conclusions follow.

## 2 The trend of Italian foreign trade by sea and Italian container traffic

In table 1, the total Italian foreign trade, that is the trade between Italy and the other countries, including European ones, from 2007 to 2017, is reported. Data concern the trade expressed both in value (billion €) and in quantity (million tons). In the table, it is shown:

- the global Italian foreign trade, by all transport modes;
- the Italian foreign trade by only the maritime mode.

The Italian foreign trade in value, taking into account all transport modes, has shown a strong decrease from 2008 to 2009, -21.5%, and a general increase from 2009; the pre-crisis value was caught up with in 2011; in 2013 a slight decrease was observed, recovered in 2015. 2017 values are above pre-crisis ones. The average growth rate from 2007 to 2017 has been 2.05%.

As regards the trade, in value, by only maritime mode, a strong decrease was observed in 2009, -26.5%, but in the following years the pre crisis values have been recovered; on the other hand, several fluctuations, from one year to another, in the trade value have been observed. The average growth rate of Italian maritime trade in value from 2007 to 2017 has been 1.62%. Generally, the increase of the trade in value, by all means of transport, has been greater than that by only the maritime mode.

The Italian foreign trade in quantity has instead shown a decrease: particularly as far as the import is concerned.

The average growth rate of the Italian foreign trade in quantity, taking into account all transport modes, from 2007 to 2017, is negative: -1.71%; this decrease is only due to the import (-2.44%), as the growth rate of the export is almost zero. The export values have shown a strong decrease by -15.8% in 2009; in the following years a sharp increase was observed, although some fluctuations from one year to another occurred, and the pre crisis value has been caught up with only in 2017.

As regards the Italian foreign trade in quantity by only the maritime mode, the average growth rate is again negative, -3.02% from 2007 to 2017. The export value has shown a sharp decrease in 2009, but after it has increased, and the 2017 value is slightly below the pre crisis one. Instead the import did not recover the pre crisis values. The average growth rate of the import, from 2007 to 2017, has been of -3.95%, while that of export is -0.2%.

The increase of the foreign trade in value and the decrease of the foreign trade in quantity, show that the Italian foreign trade is becoming more oriented to high value goods.

In tab. 2 the total Italian maritime traffic is reported. It is the sum of the tons, of all freight typologies (liquid bulk, dry bulk, container, ro-ro and conventional general cargo) loaded and unloaded at each Italian port. It comprises not only the freight having origin in Italy and destination in another country, or vice versa, but also:

- the shipments having both origin and destination in Italy: for example having origin in the Italian mainland and destination in Sardinia or Sicily;
- the shipments having both origin and destination outside Italy but crossing Italian ports.

In tab. 2 also the total Italian maritime container traffic is reported: it is the sum of the tons of containerized freight loaded and unloaded at each Italian port.

While the general trend of the total maritime traffic at Italian ports is almost zero (average growth rate of -0.32% from 2007 to 2017), the general trend of container traffic is slightly positive (average growth rate of +2.21% from 2007 to 2017). Indeed the total container traffic in Italy has increased from almost 100 million tons in 2007 to 117.5 in 2016, while it has registered a slight decrease to 115 million tons in 2017. The average percentage of containerized traffic, on the total maritime traffic, at Italian ports, has increased from 19–20% in 2007 to 23–24% in 2017, with an average growth rate of 2.53% from 2007 to 2017. This shows that the degree of

containerization of freight in Italian ports is growing.

year	Italian foreign trade by all modes of transport (value – billion €)			Italian foreign trade by all modes of transport (quantity – million t)			Italian foreign trade by only maritime mode (value – billion €)			Italian foreign trade by only maritime mode (quantity – million t)		
	import	export	total	import	export	import	import	export	total	import	export	total
2007	373.34	364.74	738.08	378.11	153.72	531.83	119.85	93.52	213.38	231.91	67.77	299.67
2008	382.05	369.02	751.07	363.55	148.81	512.36	131.54	100.89	232.43	218.73	65.75	284.49
2009	297.61	291.73	589.34	307.66	125.33	432.99	90.54	80.44	170.98	180.36	56.55	236.92
2010	367.39	337.35	704.74	339.69	142.79	482.49	124.61	90.96	215.58	200.09	62.45	262.54
2011	401.43	375.90	777.33	332.14	141.28	473.43	140.32	98.39	238.71	194.71	59.59	254.30
2012	380.29	390.18	770.47	309.54	146.03	455.56	131.22	109.01	240.23	178.86	65.39	244.25
2013	361.00	390.23	751.23	293.14	142.16	435.31	119.03	108.03	227.05	164.46	59.98	224.44
2014	356.94	398.87	755.81	284.32	134.59	418.91	114.35	107.37	221.73	155.06	58.69	213.76
2015	370.48	412.29	782.78	300.50	147.57	448.07	111.70	111.58	223.28	166.95	64.79	231.74
2016	367.63	417.27	784.89	308.18	151.82	460.00	106.80	107.72	214.52	170.53	64.89	235.41
2017	401.49	449.13	850.62	317.98	153.30	471.27	122.03	116.73	238.76	174.89	66.88	241.77
Average growth rate 2007-2017	1.04%	3.02%	2.05%	-2.44%	-0.04%	-1.71%	0.26%	3.22%	1.62%	-3.95%	-0.19%	-3.02%

Table 1. Total Italian foreign trade, Italian foreign trade by sea, in value and quantity in the years 2007-2017. Value data are expressed in billion € quantity data are expressed in millions of tons. Source: Coeweb [16].

	Total maritime traffic at Italian ports (million tons)	Maritime container traffic at Italian ports (million tons)	% of container traffic on the total maritime traffic
2007	509.55	98.80	19.4%
2008	509.07	101.06	19.9%
2009	437.87	94.34	21.5%
2010	476.15	100.94	21.2%
2011	481.15	101.49	21.1%
2012	463.16	98.96	21.4%
2013	459.44	105.74	23.0%
2014	460.87	108.33	23.5%
2015	479.84	112.45	23.4%
2016	490.02	117.51	24.0%
2017	498.38	115.10	23.1%
Average growth rate 2007-2017	-0.32%	2.21%	2.53%

Table 2. Total maritime traffic, and container traffic, in the years 2007-2017, expressed in million tons, at Italian ports. The total maritime traffic includes not only container but also bulk, ro-ro, and conventional traffic at Italian ports.

In Table 3, the development of containerized traffic in Italian ports, from 2007 (the pre crisis year) to 2017, is reported. Data are reported in thousand TEUs. Before 2007, the overall Italian throughput has registered a constant increase; the maximum throughput, of 10.6 million TEUs, was reached in 2007. After 2008, a long period of crisis has followed, which resulted: in a severe decrease of traffic in 2009, a slight increase in 2010, fluctuations from 2010 to 2015, and finally a slight increase in 2016 and 2017. The pre-crisis traffic, of the year 2007, was caught up with only in 2017. The average growth rate of the Italian throughput, of

container traffic, from 2010 to 2017 has resulted to be +1.23%, but from 2007 to 2017 it is almost zero.

In table 3 it is also reported the total container throughput at Italian ports in million tons. In this regard, it is interesting to note that the total Italian container traffic in unit of tons has shown a slight growth: by 1.89% from 2010 to 2017 and by 1.54% from 2007 to 2017. Indeed the average ratio tons/TEUs has slightly increased from 9.3 in 2007 to 11.1 in 2016 (in 2017 it has slightly decreased to 10.8): this shows an increase in the load factor of containers handled at Italian ports.

The main port of the Ligurian gateway system, but also of the whole Italian port system, is Genoa, which has recorded an almost constant increase in the container throughput in the last years: its average growth rate has been equal to 5.9% from 2010 to 2017 and 3.5% from 2007 to 2017. Moreover, in 2017 Genoa recorded even a higher throughput than Gioia Tauro, which was, in the preceding years, the Italian port with the highest container traffic. However, it must be underlined that Gioia Tauro is a hub port, while Genoa is a gateway port, therefore a traffic comparison between them is not correct. Other two important ports in the Ligurian gateway system are La Spezia and Livorno (which has half the traffic of La Spezia). The Ligurian port system throughput has achieved an average growth rate of 3.35% from 2010 to 2017 and of only 1.9% from 2007 to 2017. The north Adriatic multiport gateway system is composed of: the Italian ports of Ancona, Ravenna, Venice, Trieste; the Slovenian port of Koper; the Croatian port of Rijeka. The most important Italian ports are Venice and Trieste, whose container traffic

refers, in great part, to Short Sea Shipping (SSS) services. The port of Koper experienced an important increase of throughput in the last years: it has become the first container port of the North Adriatic multi-port system with a container throughput of over 900,000 TEUs in 2017. The northern Adriatic gateway cluster has also registered the highest growth rates among the Italian multiport gateway systems: by 7.61% and 6.18%, respectively

from 2010 to 2017 and from 2007 to 2017, as regards Italian ports; and by 9.54% and 9.93%, respectively from 2010 to 2017 and from 2007 to 2017, as regards non Italian ports. Totally, that is Italian and non Italian ports, the northern Adriatic gateway cluster has registered a growth rate: by 8.38% and 7.57%, respectively from 2010 to 2017 and from 2007 to 2017.

PORTS	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average growth rate 2010 - 2017	Average growth rate 2007 - 2017
Genoa	1855.0	1766.6	1533.6	1758.9	1847.1	2064.8	1988.0	2173.0	2242.9	2297.9	2622.2	5.87%	3.52%
La Spezia	1187.0	1246.2	1046.1	1285.2	1307.3	1247.2	1300.4	1303.0	1300.4	1272.4	1473.6	1.97%	2.19%
Savona	242.7	252.8	196.3	196.4	170.4	75.3	77.9	85.3	98.0	54.6	44.1	-19.22%	-15.68%
Livorno	745.6	778.9	592.1	628.5	637.8	549.0	559.2	577.5	780.9	800.5	734.1	2.24%	-0.16%
Total Ligurian gateway	4030.3	4044.5	3368.1	3869.0	3962.6	3936.3	3925.5	4138.8	4422.2	4425.4	4874.0	3.35%	1.92%
Ravenna	206.8	214.3	185.0	183.6	215.3	208.2	226.7	222.6	244.8	234.5	223.4	2.84%	0.78%
Venice	329.5	379.1	369.5	393.9	458.4	429.9	446.5	456.1	560.3	605.9	611.4	6.48%	6.38%
Trieste	265.9	335.9	277.0	281.6	393.2	408.0	458.6	506.0	501.2	486.5	616.2	11.84%	8.77%
Ancona	87.2	119.1	105.5	110.4	120.7	142.2	152.4	164.9	178.5	185.9	168.6	6.24%	6.82%
Total Italian north Adriatic gateway	889.4	1048.4	937.0	969.5	1187.6	1188.3	1284.2	1349.6	1484.8	1512.8	1619.6	7.61%	6.18%
Naples	460.8	481.5	515.9	534.7	526.8	546.8	477.0	431.7	438.3	438.5	509.9	-0.68%	1.02%
Salerno	385.3	330.4	269.3	234.8	235.2	208.6	263.4	320.0	359.3	388.6	454.7	9.90%	1.67%
Total Campanian gateway	846.1	811.9	785.2	769.5	762.0	755.4	740.4	751.7	797.6	827.1	964.6	3.28%	1.32%
Gioia Tauro	3445.3	3467.8	2857.4	2852.2	2305.0	2721.1	3094.3	2969.8	2546.8	2797.1	2448.6	-2.16%	-3.36%
Cagliari	547.3	307.5	737.0	629.3	603.2	627.6	702.1	717.0	748.6	723.0	463.9	-4.26%	-1.64%
Taranto	755.9	786.7	741.4	581.9	604.4	236.5	197.3	148.5	-	0.4	-	-100.00%	-100.00%
Total hub ports	4748.5	4562.0	4335.8	4063.4	3512.6	3585.2	3993.7	3835.3	3295.4	3520.5	2912.5	-4.65%	-4.77%
<b>TOTAL ITALY (thousand TEUs)</b>	<b>10609.1</b>	<b>10549.9</b>	<b>9514.7</b>	<b>9778.0</b>	<b>9526.8</b>	<b>9618.7</b>	<b>10082.0</b>	<b>10224.7</b>	<b>10190.6</b>	<b>10573.4</b>	<b>10651.4</b>	<b>1.23%</b>	<b>0.04%</b>
Koper (SLO)	305.6	353.9	343.2	476.7	589.3	570.7	600.4	674.0	790.7	844.8	911.5	9.70%	11.55%
Rijeka (HR)	145.0	168.8	130.7	137.0	150.7	171.9	169.9	192.0	200.1	214.3	250.0	8.97%	5.60%
Total non Italian Adriatic gateway	450.7	522.6	473.9	613.8	740.0	742.7	770.4	866.0	990.8	1059.1	1161.5	9.54%	9.93%
Total Adriatic Italian + non Italian gateway	1340.1	1571.0	1410.9	1583.3	1927.6	1931.0	2054.6	2215.6	2475.6	2571.9	2781.1	8.38%	7.57%
<b>TOTAL ITALY (million tons)</b>	<b>98.8</b>	<b>101.06</b>	<b>94.34</b>	<b>100.94</b>	<b>101.49</b>	<b>98.96</b>	<b>105.74</b>	<b>108.33</b>	<b>112.45</b>	<b>117.51</b>	<b>115.1</b>	<b>1.89%</b>	<b>1.54%</b>
<b>Ratio tons/TEUs</b>	<b>9.31</b>	<b>9.58</b>	<b>9.92</b>	<b>10.32</b>	<b>10.65</b>	<b>10.29</b>	<b>10.49</b>	<b>10.59</b>	<b>11.03</b>	<b>11.11</b>	<b>10.81</b>	<b>0.66%</b>	<b>1.50%</b>

Table 3: Container throughput at Italian ports, in thousand of TEUs, in the period 2007 – 2017. The average growth rate has been calculated: from 2010 to 2017 and from 2007 to 2017. Source: Assoportri [11],[13]. In the last two rows of the table, they have been reported: the total Italian container throughput in million tons, and the rate tons/TEUs, in the years 2007-2017.

As far as the Campanian gateway ports are concerned, a slight reduction of the container traffic of Naples and a consistent increase of the container traffic of Salerno can be observed.

Regarding the Italian hub ports, Gioia Tauro was characterized by the highest container throughput in Italy. Its maximum traffic was recorded in 2008 with about 3.5 million TEUs. But in the following years, this port registered a serious decrease, while

in 2017 its throughput has been lower than that of Genoa (but, as reported before, the container traffic in the two ports is not really comparable because Gioia Tauro is almost exclusively an hub port, while Genoa is a gateway port). Taranto used to be a hub port, but its container terminal is no longer in operation. The Italian hub port system has shown a general decrease of their container traffic.

Adriatic ports are crossed almost exclusively by SSS feeder routes. The transshipment port for the Adriatic port system used to be Gioia Tauro and, sometimes, Taranto and Malta. Currently, in addition to Gioia Tauro and Malta, also Port Said (Egypt) and in particular Piraeus (Greece) have become transshipment ports for the Adriatic gateway system. Piraeus has experienced a rapid growth in the last years, from 2008 (just above 433,000 TEUs) to 2017 (about 4 million TEUs).

### 3 Analysis of lo-lo containerized Short Sea Shipping (SSS) routes in 2018

Data about SSS container routes currently in operation in the Mediterranean and Black Sea region have been collected, from 1 May to 31 July 2018. Also SSS routes not calling at Italian ports have been taken into account in the study sample.

In the analysis of Deep Sea Shipping (DSS) routes several sources are at disposal, for example the journals 'L'Avvisatore Marittimo' and 'Il Messaggero Marittimo'. As to SSS routes the situation is different. Indeed, these journals report only the main SSS routes: therefore, local SSS services and several feeder routes are not shown. In addition, in the year 2010 a website was available to the public, where all SSS routes were written down: currently this website has been removed.

Consequently, we firstly needed to determine precisely which companies are currently operating lo-lo SSS routes, and, for each company, the contacts and the website. From the companies websites, we could collect all data about routes, i.e. the ports called and the frequency of each route; when some of these data were not available, the companies have been directly interviewed.

In order to determine which companies currently operate lo-lo SSS routes, we consulted: at first the journal 'L'Avvisatore Marittimo'; after, the websites of all remarkable container ports in the Mediterranean and Black Sea region (not only the main ports, as for example Valencia, but also less important ports such as Odessa and Varna).

Finally, some companies operate in code sharing, that is the same ship, or route, is shared by more than one operator. Therefore we identified all these cases of code sharing in order to avoid to count the same route multiple times.

Short Sea Shipping routes, in this analysis, have been grouped as follows:

- the so-called 'purely Mediterranean' SSS routes, calling only at ports located in the Mediterranean and Black Sea region;

- the Mediterranean (and Black Sea) part of DSS routes, where cargo among Mediterranean (and Black Sea) ports was accepted;
- SSS routes connecting the Mediterranean to northern European ports. These will be called 'north-south Europe' SSS routes in the following.

Among 'purely Mediterranean' SSS routes we distinguished between:

- feeder routes, to/from the main hub ports of the Mediterranean;
- routes connecting together only Mediterranean / Black Sea gateway ports: the freight transported on these routes has both origin and destination in Mediterranean or Black Sea ports.

	Routes characteristics	n° routes	frequencies per month
All SSS routes in the Mediterranean and Black Sea region	'purely Mediterranean' SSS routes connecting only gateway ports	99	379
	'purely Mediterranean' feeder routes	103	404
	Total 'purely Mediterranean' SSS routes	202	783
	Mediterranean part of DSS routes	56	213
	'north-south Europe' SSS routes	17	64
	Total routes	275	1060
SSS routes crossing Italian ports	'purely Mediterranean' SSS routes connecting only gateway ports	53	196
	'purely mediterranean' feeder routes	40	153
	Total 'purely Mediterranean' SSS routes	93	349
	Mediterranean part of DSS routes	32	126
	'north-south Europe' SSS routes	5	18
	Total routes	130	493

Table 4. Characteristics of SSS container routes: concerning all SSS routes, and only those routes calling at Italian ports.

As for DSS routes, which accept cargo among Mediterranean ports, it should be remarked that shipments having origin and destination in ports close to each other, for example Genoa and La Spezia, are never accepted; only shipments between ports quite far from each other, for example Genoa and Piraeus, are transported. DSS routes accepting cargo among Mediterranean ports have been identified from operators websites and by interviews.

All SSS routes considered in the study are extensively reported in the appendix. For each route, the ports crossed and the frequency per month are written down.

A synthesis of SSS routes characteristics is provided in table 4.

The total number of SSS routes is 275, with an overall frequency per month of 1060. The frequency per month of a route is the number of times that a route is carried out in a month. 1060 is the sum of the frequencies per month of each of the 275 routes. These 275 SSS routes are operated by 32 companies. None of these companies is by far the most important, as instead occurs in the case of Motorways of the Sea, whose routes are operated in great part by Grimaldi: this is described in detail in Lupi et al. [17]. The most important companies are four: Metz Container Line, CMA CGM, Unimed Feeder Services and Arkas, which offer 27 (the first 3 companies) and 26 (Arkas) routes. The longest route is offered by Arkas and crosses 16 ports: Genoa, La Spezia, Salerno, Piraeus, Istanbul, Gebze, Mersin, Beirut, Alexandria, Salerno, La Spezia, Genoa, Casablanca, Leixoes, Setubal, Genoa.

Among SSS routes, 202 are 'purely Mediterranean' ones (that is they are comprised completely in the Mediterranean and Black Sea region), with an overall frequency of 783 services per month (783 is the sum of the frequencies of each of 202 routes). 56 SSS routes are parts of longer DSS container routes; they have an overall frequency per month equal to 213 (213 is the sum of the frequencies of each of 56 routes). Instead, 17 routes, with an overall frequency per month equal to 64, are the Mediterranean parts of 'north-south Europe' SSS routes (64 is the sum of the frequencies of each of 17 routes). Among 'purely Mediterranean' SSS routes, 103 are feeder (with an overall frequency per month of 404) and 99 connect only Mediterranean / Black Sea gateway ports (with an overall frequency per month of 379). All these data are summarized in table 4.

It should be remarked that some feeder routes serve only one geographical area, for example the Adriatic Sea; other routes serve two geographical areas, for example the Adriatic Sea and the Aegean. An example of such routes is: Rijeka, Koper, Venice, Ancona (Adriatic Sea), Piraeus (hub), Thessaloniki, Istanbul, Izmit, Izmir (Aegean Sea), Piraeus (hub), Rijeka (Adriatic Sea).

Some routes connecting Mediterranean gateway ports are quite long and connect western Mediterranean ports to ports located in the east Mediterranean and in the Marmara Sea. Other routes instead are quite short and connect, for example, France to Algeria and Tunisia, or Black Sea ports to Istanbul (see Appendix).

Italian port	n° 'purely Mediterranean' SSS routes	frequencies per month, of 'purely Mediterranean' SSS routes	n° routes being part of DSS routes + n° 'north-south Europe' SSS routes	frequencies per month of routes being part of DSS routes + frequencies per month of 'north-south Europe' SSS routes	Total n° routes	Total frequencies per month
Ancona	12	50	0	0	12	50
Bari	2	8	1	1	3	9
<b>Cagliari</b>	<b>18</b>	<b>71</b>	<b>8</b>	<b>32</b>	<b>26</b>	<b>103</b>
Catania	5	20	0	0	5	20
Civitavecchia	3	12	1	5	4	17
<b>Genoa</b>	<b>36</b>	<b>131</b>	<b>37</b>	<b>150</b>	<b>73</b>	<b>281</b>
<b>Gioia Tauro</b>	<b>26</b>	<b>101</b>	<b>12</b>	<b>59</b>	<b>38</b>	<b>160</b>
<b>La Spezia</b>	<b>19</b>	<b>72</b>	<b>22</b>	<b>97</b>	<b>41</b>	<b>169</b>
<b>Livorno</b>	<b>10</b>	<b>34</b>	<b>16</b>	<b>69</b>	<b>26</b>	<b>103</b>
Naples	10	34	5	25	15	59
Palermo	1	4	0	0	1	4
Ravenna	14	59	0	0	14	59
<b>Salerno</b>	<b>13</b>	<b>49</b>	<b>12</b>	<b>46</b>	<b>25</b>	<b>95</b>
Trapani	1	4	0	0	1	4
Trieste	7	29	3	17	10	46
Vado Ligure	3	12	3	12	6	24
<b>Venice</b>	<b>19</b>	<b>75</b>	<b>1</b>	<b>6</b>	<b>20</b>	<b>81</b>
<b>Italy (at least 1 Italian port)</b>	<b>93</b>	<b>349</b>	<b>37</b>	<b>144</b>	<b>130</b>	<b>493</b>

Table 5: n° of SSS routes crossing each Italian port and their frequencies per month. Data refer to May – July 2018. Source: SSS companies websites [21]. In the row Italy, the number of routes crossing at least one Italian port, and their frequencies per month, are reported.

Among all SSS routes, 130 (47.3% of the total 275 routes) cross at least one Italian port, with an overall frequency per month equal to 493 (46.5% of the total 1060). Among these, 93 routes are 'purely Mediterranean' SSS ones with an overall frequency of 349 services per month (349 is the sum of the frequencies of each of 93 routes); 32 routes, with an overall frequency of 126 services per month, are parts of DSS routes (126 is the sum of the frequencies of each of 32 routes); while 5 routes, with an overall frequency of 18 services per month (18 is the sum of the frequencies of each of 5 routes), are 'north-south Europe' SSS routes.

All these data are summarized in table 4.

Nearly all DSS routes, calling at Italian ports, accept cargo having both origin and destination in the Mediterranean. Indeed, the total number of DSS

routes, crossing at least one Italian ports, is 35, among these 32 accept cargo having both origin and destination in the Mediterranean. The overall frequency per month of the 35 DSS routes, crossing at least one Italian port, is equal to 132 services per month; among these 132 services per month, 126 accept cargo having both origin and destination in the Mediterranean. However, it must be underlined that cargo is accepted only if the origin and destination ports are far enough, for example Genoa and Piraeus: cargo having origin in Genoa and destination in La Spezia is never accepted.

Among Italian 'purely Mediterranean' SSS routes, 40 ones, with an overall frequency per month of 153, are feeder, while 53 ones, with an overall frequency per month equal to 196, are SSS routes calling at only Mediterranean gateway ports.

In table 5, the number of routes crossing each Italian port, and their frequencies per month, are reported.

In all the rows, apart 'Italy', it is reported: the number of routes crossing the given port, and the overall frequencies per month of SSS routes at the given port. For example, the port of Ancona is crossed by 12 SSS routes; the sum of the frequencies per month of the 12 SSS routes calling at the port of Ancona is equal to 50.

In the row 'Italy', it is reported:

- the number of SSS routes crossing at least one Italian port; Italian ports are considered together, as if they were a single port. 130 SSS routes cross at least one Italian port. 130 is the sum of the following:
  - n° of 'purely Mediterranean' SSS routes, crossing at least one Italian port: 93;
  - n° of routes being part of DSS routes, and n° of 'north-south Europe' SSS routes, crossing at least one Italian port: 37.
- the overall frequency per month of SSS routes crossing at least one Italian port. 493 is the sum of the frequencies of each of the 130 routes crossing at least one Italian port. In particular, 493 is the sum of the following:
  - overall frequency per month of 'purely Mediterranean' SSS routes, crossing at least one Italian port: 349 (349 is the sum of the frequencies of each of 93 'purely Mediterranean' routes)
  - overall frequency per month of routes being part of DSS routes, and n° of 'north-south Europe' SSS routes, crossing at least one Italian port: 144 (144 is the sum of the frequencies of each of the routes being part of DSS routes, 32, and of each of 'north-south Europe' SSS routes, 5).

The table 5 shows that the majority of routes and frequencies per month involve the Ligurian ports of Genoa and La Spezia and the hub port of Gioia Tauro. Genoa is by far the most important Italian port, concerning both the number of routes and the frequencies per month. The ports of La Spezia and Gioia Tauro follow: they have almost the same number of routes and frequencies, but the first is a gateway port, while the second is a transshipment port. Other important Italian ports, whose number of routes and frequencies is however lower, are the Ligurian port of Livorno, the hub port of Cagliari, the Campanian port of Salerno and the Adriatic port of Venice. It must be underlined that while Livorno, Cagliari and Salerno are crossed also by several routes which are the Mediterranean part of DSS routes, the container traffic of Venice relies at most on 'purely Mediterranean' SSS routes.

As regards the Italian port clusters, it emerges that the Ligurian one is by far the most important: 80 routes, with an overall frequency of 302 services per month, cross at least one Ligurian gateway port. Ligurian ports are crossed by 61.5% of routes and 61.3% of services per month: that is, 61.5% of routes and 61.3% of services per month calling at least at one Italian port, cross at least one Ligurian port.

North Adriatic gateway ports are crossed by a minor number of routes: 26 routes cross at least one north Adriatic port (20% of routes crossing at least one Italian port), with an overall frequency of 96 services per month (19.5% of services per month crossing at least one Italian port). As regards the other port clusters, 37 routes (28.5%) cross at least one Campanian gateway port, with an overall frequency of 131 services per month (26.6%); 42 routes (32.3%), with an overall frequency of 174 services per month (35.3%), cross at least one hub port.

#### 4 Comparison between 2010 and 2018 data

The comparison between SSS services in 2010 and 2018 concerns only routes calling at Italian ports. Indeed the 2010 data, reported in detail in Danesi et al. [18] and more briefly in Lupi et al. [19], do not include routes calling at Mediterranean non Italian ports.

Some aggregate data about 2010 and 2018 SSS routes are shown in table 6. The number of routes from 2010 to 2018, crossing at least one Italian ports, has decreased, from 149 to 130, but routes have become longer. In 2010, nearly 50% of SSS



routes crossed less than 5 ports, while in 2018 only 36%. In addition, while the number of routes calling at more than 10 ports has decreased from 5 to 1, the percentage of routes calling at 5 to 10 ports has increased from 47% to 63%. Point-to-point routes, which were not rare in 2010, in 2018 are only two: Ravenna – Piraeus and Naples – Piraeus, both feeder ones. In the number of ports crossed by each route are computed not only Italian ports but also Mediterranean non Italian ports. For example, a route calling at Ancona, Ravenna, Venice, Trieste, Koper, Rijeka, Piraeus, Ancona, calls at 7 ports (and not 4, which are the Italian ports).

n° ports crossed by each route	2010		2018	
< 5	74	49.7 %	47	36.2%
from 5 to 10	70	47.0%	82	63.1%
> 10	5	3.3%	1	0.8%
Total	149		130	

Table 6: Comparison of lo-lo SSS routes crossing at least one Italian port in 2010 and 2018. Sources: [18],[21]. In the number of ports crossed by each route are computed not only Italian ports but also Mediterranean non Italian ports.

In table 7, the number of SSS routes calling at each Italian port, in 2010 and 2018, and their frequencies, are displayed.

In the table 7, in the row ‘Italy’ it is reported:

- the number of routes crossing at least one Italian port (that is considering all Italian ports as if they were a single port) in 2010 and 2018.
- the overall frequency per month, of routes crossing at least one Italian port: 542 is the sum of the frequency per month of the 149 routes of the year 2010, while 493 is the sum of the frequencies of the 130 routes of the year 2018.

For example, in 2018 it is operated a route calling at Gioia Tauro, La Spezia and Genoa: it is computed once in the row ‘Italy’ as regards the n° of routes (that is, it contributes by 1 to 130), but it contributes by 1 also to the number of routes of each of the three Italian ports crossed: Gioia Tauro, La Spezia and Genoa (that is, it contributes: by 1 to 38, by 1 to 41 and by 1 to 73).

If the sample route, calling at Gioia Tauro, La Spezia and Genoa, has a frequency of 4 services per month, it contributes by 4 to 493 (the overall frequency per month of SSS routes crossing at least one Italian port in 2018), but it contributes by 4 also to the frequencies per month of Gioia Tauro, La Spezia and Genoa, that is to, respectively, 160, 169 and 281.

Italian port	n° of SSS routes	SSS frequencies per
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	calling at the given port			month at the given port		
	2010	2018	%	2010	2018	%
Ancona	12	12	0.0	46	50	8.7
Bari	0	3	100.0	0	9	100.0
Cagliari	22	26	18.2	85	103	21.2
Catania	3	5	66.7	12	20	66.7
Civitavecchia	4	4	0.0	13	17	30.8
<b>Genoa</b>	<b>49</b>	<b>73</b>	<b>49.0</b>	<b>170</b>	<b>281</b>	<b>65.3</b>
Gioia Tauro	37	38	2.7	146	160	9.6
La Spezia	32	41	28.1	128	169	32.0
Livorno	23	26	13.0	80	103	28.8
Marina Carrara	1	0	-100.0	2	0	-100.0
Monfalcone	1	0	-100.0	4	0	-100.0
Naples	18	15	-16.7	54	59	9.3
Palermo	3	1	-66.7	12	4	-66.7
Ravenna	14	14	0.0	56	59	5.4
Salerno	21	25	19.1	68	95	39.7
Taranto	7	0	-100.0	24	0	-100.0
Trapani	1	1	0.0	8	4	-50.0
Trieste	12	10	-16.7	51	46	-9.8
Vado Ligure	3	6	100	10	24	140.0
Venice	19	20	5.3	74	81	9.5
<b>Italy (at least 1 Italian port)</b>	<b>149</b>	<b>130</b>	<b>-12.8</b>	<b>542</b>	<b>493</b>	<b>-9.0</b>

Table 7: n° of SSS routes and total SSS services per month calling at each Italian port, in 2010 and 2018, and their percentage of growth. Sources: [18],[21]. In the row ‘Italy’ it is reported the number of routes crossing at least one Italian port and their overall frequency per month.

Although the number of routes crossing at least one Italian port has decreased, the majority of Italian ports, but in particular Ligurian ones, have registered an increase in the number of routes crossing them from 2010 to 2018: this occurs because routes call at a greater number of ports. This phenomenon is even more marked as regards the frequencies per month: although the overall frequency per month of the routes that cross at least one Italian port has decreased, for the great majority of Italian ports the frequencies per month have instead increased.

Table 7 shows the remarkable growth of Genoa, which confirms the trend of the total container throughput, shown in table 2: the number of routes calling at this port has increased by 49%, while the frequencies per month have increased by 65%.

## 6 Conclusion

In this paper, an analysis on SSS container routes in the Mediterranean and Black Sea region, with a focus on routes calling at Italian ports, has been performed.

Firstly, the Italian maritime foreign trade, from 2007 (the pre crisis year) to 2017 (the last year of which data are available), has been analyzed and it has been compared to the Italian foreign trade by all

means of transport. This survey has been performed in order to study the effects of the economic and financial crisis in Italy on maritime transport, which began in 2008 and is currently in force.

From this survey it resulted that, from 2007 to 2017, the foreign trade in quantity has reduced, while that in value has grown: this happened for both the trade by only maritime mode and all means of transport. This shows that the Italian foreign trade is becoming more oriented to high value goods.

Moreover, the growth rate of the foreign trade by all means of transport is higher than that by only maritime mode. Finally, the growth rate of the export is higher than the growth rate of the import.

After, SSS container routes in the Mediterranean and Black Sea region, in the year 2018, have been analyzed. This analysis has involved also SSS routes not calling at Italian ports.

Among SSS routes, it was distinguished among: 'purely Mediterranean' SSS routes, which are routes calling only at Mediterranean and Black Sea ports; the Mediterranean (and Black Sea) parts of the DSS routes where cargo having both origin and destination in Mediterranean (and Black Sea) ports is accepted; SSS routes connecting Mediterranean and Black Sea ports to northern European ones.

The great majority of SSS routes are the 'purely Mediterranean' ones: 202; the total number of SSS routes is 275 (that is 73.45% of SSS routes are 'purely Mediterranean'). DSS routes, accepting cargo between pairs of Mediterranean ports, are 56, while north-south Europe SSS routes are 17.

The same can be stated as regards SSS routes crossing at least one Italian port: 93 of 130 routes, that is 71.54%, are 'purely Mediterranean' ones.

After, the analysis has focused only on SSS routes calling at Italian ports, in order to compare 2018 services with 2010 ones: the analysis of 2010 SSS services regarded only those calling at Italian ports.

This comparison has shown that, from 2010 to 2018: on one hand the number of routes, crossing at least one Italian port, as well as their frequencies per month, have decreased; but on the other hand, for the majority of Italian ports, in particular Genoa, the number of routes and the frequencies per month have increased. This happened because routes have increased their length and, in particular, the number of ports called: therefore they are less in number and their frequency has decreased, but they contribute more times to the number of routes calling at each Italian port, and to the frequencies of SSS services of each Italian port.

This choice, of increasing the number of ports crossed by each route, has been performed by lo-lo SSS companies in order to maximize the load factor

of ships by serving a large number of markets. This has been performed not only for lo-lo SSS routes, but also for lo-lo DSS ones, as underlined in Lupi et al. [20], and for Motorways of the Sea (ro-ro SSS) services, as shown in Lupi et al. [17], in order to cope with the economic and financial crisis.

The main Italian port is Genoa: it is crossed by 73 routes, with an overall frequency of 281 services per month (56% of routes crossing at least one Italian port and 57% of services per month). The Ligurian gateway system is the major Italian port cluster: it is crossed by 80 routes (61.5% of routes crossing at least an Italian port) with an overall frequency of 302 services per month.

The importance of Ligurian ports as regards DSS services is even more marked. Indeed, 132 DSS services per month cross at least one Italian port: among these, 117 (88.6%) cross at least one Ligurian port, and in particular 94 services per month (71.2%) call at the port of Genoa (Lupi et al. [20]).

The north Adriatic gateway cluster is also important as regards SSS services, although, currently, much less than the Ligurian one: 20% of routes, and 19.5% of services per month, crossing at least one Italian port, call at least at one Adriatic port. But as regards DSS services, north Adriatic ports play only a minor role. Indeed, only 7 services per month cross at least one Adriatic port, that is 5.3% of DSS services per month crossing at least one Italian port (Lupi et al. [20]). But, as regards the container throughput, in TEUs, north Adriatic ports register the highest growth rate, in percentage, among the Italian port clusters: +6.18% from 2007 to 2017 and +7.61% from 2010 to 2017. Ligurian gateway ports have registered a lower growth rate: +1.92% from 2007 to 2017 and +3.35% from 2010 to 2017. But, in absolute values, the growth of Ligurian ports has been greater than that of Adriatic ones: from 2007 to 2017, the overall throughput of Ligurian ports has grown by 844,000 TEUs, while that of Italian north Adriatic ports has grown by 730,000 TEUs. Moreover, the pre-crisis throughput of north Adriatic ports has been caught up with already in 2011, and after that year, the throughput of north Adriatic ports continued growing; as regards Ligurian ports, the pre crisis throughput has been caught up with only in 2014.

On the contrary, Italian hub ports have decreased relevantly their throughput: not only Taranto is no longer a container port, but also the traffic trend of Gioia Tauro, the main Italian hub port, and of Cagliari, is not positive. Indeed, while in 2010 the Italian transshipment traffic took place at most at the Italian hub port of Gioia Tauro and Malta, now also

Piraeus and Port Said are often used, especially for routes to/from Far East.

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*Appendix 1: Short Sea Shipping routes calling at Italian ports reported extensively*

<b>Route</b>	<b>Operator</b>	<b>Freq. by month</b>
Ambarli, Gebze, Gemlik, Izmir, Mersin, Haifa, Ashdod, Ambarli	Admiral Container Lines, Turkon	4
Gebze, Ashdod, Gebze	Admiral Container Lines	3
Ambarli, Gebze, Gemlik, Izmir, Mersin, Alexandria, Ambarli	Admiral Container Lines	5
Ambarli, Gebze, Gemlik, Izmir, Damietta, Port Said, Ambarli	Admiral Container Lines	4
Mersin, Damietta, Port Said, Mersin	Admiral Container Lines	4
Ashdod, Haifa, Novorossiysk, Odessa, Constanta, Ashdod	Admiral Container Lines	3

Alexandria, Port Said, Damietta, Novorossiysk, Odessa, Constanta, Alexandria	Admiral Container Lines	3
Gebze, Gemlik, Izmir, Mersin, Novorossiysk, Odessa, Constanta, Gebze	Admiral Container Lines	3
Ambarli, Novorossiysk, Odessa, Ambarli	Admiral Container Lines	3
Ashdod, Haifa, Alexandria, Damietta, Port Said, Ashdod	Admiral Container Lines	1
Far East, Port Said, Beirut, Piraeus, Izmit, Istanbul, Constanta, Odessa, Istanbul, Mersin, Port Said, Far East	American President Line, OOCL, CMA CGM, Evergreen	4
Arabic-Persian Gulf, Damietta, Piraeus, Malta, Aliaga, Mersin, Port Said, Far East	American President Line	2
Far East, Malta, Valencia, Barcelona, Fos, Genoa, Malta, Beirut, Far East	American President Line, CMA CGM, Cosco, OOCL	4
Far East, Piraeus, La Spezia, Genoa, Fos, Valencia, Far East	American President Line, Cosco, OOCL	4
Barcelona, Valencia, Casablanca, Algeciras, Genoa, Alexandria, Haifa, Genoa, Fos, Barcelona	Arkas Line, EMES Feeder, Maersk	5
Genoa, La Spezia, Salerno, Piraeus, Istanbul (Marport), Gebze (Yilport), Mersin, Beirut, Alexandria, Salerno, La Spezia, Genoa, Casablanca, Leixoes, Setubal, Genoa	Arkas Line, Tarros	4
Salerno, La Spezia, Genoa, Gemlik (Rodaport), Gebze (Yilport), Istanbul (Marport), Izmir (Aliaga), Salerno	Arkas Line, Tarros	5
Marseilles, Casablanca, Marseilles	Arkas Line, CMA CGM	3
Istanbul (Marport), Samsun, Istanbul (Marport), Poti, Samsun, Istanbul (Marport), Gemlik, Istanbul (Marport)	Arkas Line, EMES Feeder	5
Valencia, Barcelona, Algeciras, Casablanca, Algeciras, Tangier, Vigo, Leixoes, Lisbon, Casablanca, Algeciras, Valencia	Arkas Line	4
Valencia, Barcelona, Las Palmas, Valencia	Arkas Line	5
Istanbul (Marport), Burgas, Varna, Istanbul (Marport)	Arkas Line, EMES Feeder, Hapag Lloyd	4
La Spezia, Genoa, Malta, Tripoli, Misurata, La Spezia	Arkas Line, Tarros	3
Istanbul (Marport), Varna, Constanta, Istanbul (Marport), Gemlik, Piraeus, Tangier, Casablanca, Piraeus, Gemlik, Kocaeli, Istanbul (Marport)	Arkas Line, EMES Feeder, CMA CGM, Hapag Lloyd	4
Istanbul (Marport), Constanta, Odessa, Istanbul (Marport)	Arkas Line, Unimed Feeder Services, Y.M.L., Turkon	5
Tangier, Algeciras, Casablanca, Agadir, Tangier	Arkas Line	4
Algeciras, Marin, Vigo, Algeciras	Arkas Line	5
Tangier, Algeciras, Valencia, Castellon, Barcelona, Alexandria, Mersin, Beirut, Iskenderun, Mersin, Aliaga, Izmir, Algeciras, Tangier	Arkas Line, EMES Feeder	5
Valencia, Castellon, Barcelona, Fos, Piraeus, Istanbul (Marport), Kocaeli, Gemlik, Aliaga, Izmir, Valencia	Arkas Line, CMA CGM	4
Izmir, Mersin, Gemlik, Kocaeli, Istanbul (Marport), Annaba, Misurata, Khoms, Sousse, Bizerte, Istanbul (Marport), Izmir	Arkas Line	4
Izmir, Kocaeli, Istanbul (Marport), Piraeus, Skikda, Bejaia, Annaba, Bizerte, Algiers, Izmir	Arkas Line	4
Venice, Koper, Ravenna, Ancona, Istanbul (Marport), Kocaeli, Gemlik, Aliaga, Izmir, Misurata, Koper, Venice	Arkas Line	3
Barcelona, La Spezia, Vado Ligure, La Spezia, Barcelona, Algiers, Barcelona	Arkas Line	4
Haifa, Ashdod, Haifa, Iskenderun, Antalya, Istanbul (Marport), Gemlik, Kocaeli, Gemlik, Istanbul (Marport), Piraeus, Izmir, Ashdod, Haifa	Arkas Line, EMES Feeder, ZIM	5
Tangier, Algeciras, Leixoes, Lisbon, Leixoes, Vigo, Lisbon, Tangier	Arkas Line	5
Constanta, Istanbul (Marport), Gemlik, Arzew, Constanta	Arkas Line	5
Damietta, Port Said, Alexandria, Mersin, Haifa, Damietta	Arkas Line, Unimed Feeder Services	2
Istanbul (Marport), Limassol, Istanbul (Marport), Novorossiysk, Istanbul (Marport),	Arkas Line	4
Piraeus, Istanbul (Marport), Odessa, Constanta, Istanbul (Marport), Piraeus	Arkas Line	3

Fos, Genoa, Livorno, Algeciras, Isole Canarie, Algeciras, Fos	Boluda	2
Alicante, Barcelona, Valencia, Isole Canarie, Alicante	Boluda	2
North Europe, Limassol, Ashdod, (Haifa), Alexandria, Haifa, North Europe	Borchard Lines, Seago line, ZIM	4
North Europe, Piraeus, Izmir, (Valencia), North Europe	Borchard Lines	4
Barcelona, Marseilles, Genoa, (Limassol), Haifa, Ashdod, Alexandria, Salerno, Barcelona	Borchard Lines	4
Ravenna, Venice, Limassol, Alexandria, Ashdod, Haifa, Limassol, Ravenna	Borchard Lines	5
Casablanca, Barcelona, Marseilles, Genoa, Piraeus, Ambarli, Gebze (Yilport), Izmir, Salerno, Marseilles, Barcelona, (Genoa), Castellon, Casablanca	Borchard Lines	2
North Europe, Leixoes, Castellon, Salerno, Piraeus, Limassol, (Alexandria), (Izmir), Ashdod, Haifa, Mersin, Salerno, Castellon, (Leixoes), North Europe	Borchard Lines	5
(Far East), La Spezia, Oran, Algiers, La Spezia	Brointermed	2
(North America), La Spezia, Algiers, Oran	Brointermed	3
North Europe, Tripoli, Misurata, Ras Lanuf, Marsa El Brega, Benghazi, North Europe	Brointermed	2,5
Far East, La Spezia, Malta, Tripoli, Misurata, Ras Lanuf, Marsa El Brega, Benghazi, Far East	Brointermed	4
Genoa, La Spezia, Salerno, Istanbul, Gebze, Mersin, Beirut, Alexandria, Genoa	Brointermed	4
Aliaga, Salerno, La Spezia, Genoa, Aliaga	Brointermed	4
North Europe, Malta, Piraeus, Gebze, Istanbul, Ambarli, Gemlik, Aliaga, Izmir, Piraeus, Malta, Valencia, Tanger Med, North Europe	CMA CGM	4
Malta, Genoa, Barcelona, Valencia, Tanger Med, South America, Tanger Med, Algeciras, Malta	CMA CGM	4
Piraeus, Istanbul, Novorossiysk, Odessa, Constanta, Istanbul, Piraeus	CMA CGM, EMES Feeder, Unimed Feeder Services	4
Genoa, Salerno, Naples, Trapani, Malta, Tripoli, Misurata, Malta, Genoa	CMA CGM	4
Malta, Bar, Ancona, Ravenna, Split, Ploce, Malta, Rijeka, Koper, Venice, Malta	CMA CGM	4
Malta, Catania, Dures, Malta	CMA CGM	4
Malta, Catania, Salerno, Naples, Livorno, Genoa, Livorno, Naples, Salerno, Trapani, Malta	CMA CGM, Unimed Feeder Services	4
Ancona, Venice, Koper, Ravenna, Piraeus, Limassol, Alexandria, Beirut, Mersin, Piraeus, Ancona	CMA CGM	4
Marseilles, Barcelona, Valencia, Algeciras, Casablanca, Tanger Med, Ghazaouet, Marseilles	CMA CGM	4
Odessa, Constanta, Istanbul, Aliaga, Malta, Bejaia, Algeciras, Casablanca, Malta, Odessa	CMA CGM	4
Malta, Piraeus, Istanbul, Poti, Varna, Malta	CMA CGM, Unimed Feeder Services	4
Beirut, Limassol, Latakia, Tartous, Antalya, Beirut	CMA CGM	4
Port Said, Damietta, Beirut, Latakia, Port Said	CMA CGM	4
Izmit, Istanbul, Gemlik, Istanbul, Ambarli, Aliaga, Izmir, Alexandria, Port Said, Damietta, Izmit	CMA CGM	4
Port Said, Damietta, Alexandria, Port Said	CMA CGM	4
Malta, Sousse, Sfax, Malta	CMA CGM	4
Tanger Med, Algeciras, Casablanca, Agadir, Tangier Med	CMA CGM	4
Marseilles, Skikda, Alger, Mostaganem, Marseilles	CMA CGM	3
Piraeus, Thessaloniki, Istanbul Ambarli, Izmit, Piraeus	CMA CGM, EMES Feeder	4
Izmir, Piraeus, Thessaloniki, Istanbul, Gemlik, Malta, Alger, Malta, Izmir	CMA CGM	4
Marseilles, Genoa, Livorno, Civitavecchia, Malta, Mersin, Iskenderun, Tripoli, Beirut, Damietta, Alexandria, Malta, Alger, Marseilles	CMA CGM	4
Salerno, La Spezia, Genoa, Casablanca, Setubal, Genoa, La Spezia, Salerno	CMA CGM, Tarros	4
La Spezia, Bejaja, Djen Djen, Skikda, La Spezia	CNAN	4
La Spezia, Genoa, Algeri, Orano, La Spezia	CNAN	4
Genoa, Algeri, Mostaganem, Genoa	CNAN	4
Far East, Port Said, Malta, Koper, Trieste, Rijeka, Venice, Koper, Malta, Port Said, Far East	Cosco, Evergreen, OOCL	4

Piraeus, Rijeka, Koper, Venice, Ancona, Piraeus, Thessaloniki, Kumpport, Haydarpasa, Izmit, Izmir, Piraeus	Cosco	4
Piraeus, Ravenna, Piraeus	Cosco	4
Vado Ligure, Genoa, Castellon, Valencia, Algeciras, West Africa, Algeciras, Genoa	Cosco	4
Malta, Salerno, Livorno, Genoa, Fos, Barcelona, Valencia, North America, Algeciras, Malta	Cosco, OOCL	4
Ashdod, Haifa, Fos, Genoa, Livorno, Naples, Ashdod	Cosco, ZIM	4
Arabic-Persian Gulf, Malta, La Spezia, Genoa, Barcelona, Valencia, Tanger Med, Fos, Genoa, Malta, Damietta, Arabic-Persian Gulf	Cosco, OOCL	4
North Europe, Cagliari, Piraeus, Kumpport, Gebze, Izmir, Salerno, North Europe	Cosco, OOCL	4
Piraeus, Naples, Piraeus	Cosco	4
South America, Valencia, Salerno, Livorno, Vado Ligure, Barcelona, Valencia, South America	CSAV	2
Central America, Cagliari, Livorno, Genoa, Barcelona, Valencia, Central America	CSAV	4
South America, Tangier, Valencia, Gioia Tauro, Arabic-Persian Gulf	CSAV	4
South America, Tangier, Algeciras, Valencia, Arabic-Persian Gulf	CSAV	4
South America, Tangier, Valencia, Gioia Tauro, Livorno, Genoa, Fos, Barcelona, Valencia, South America	CSAV	4
Beirut, Piraeus, Istanbul, Evyap, Piraeus, Far East, Beirut	CSAV	4
Alexandria, Naples, La Spezia, Alexandria	East Mediterranean Container Line	4
Damietta, Istanbul, Constanta, Ilyichevsk, Damietta	EMCL	4
Alexandria, Istanbul, Odessa, Alexandria	EMCL	4
Port Said, Istanbul, Odessa, Ilyichevsk, Constanta, Port Said	EMCL	4
Port Said, Malta, North Europe, Port Said	EMCL	4
Damietta, Beirut, Latakia, Damietta	EMCL	4
Koper, Venice, Ravenna, Istanbul, Yarimca, Gemlik, Aliaga, Misurata, Koper	EMES Feeding	4
Valencia, Castello de la Plana, Barcelona, Fos, Piraeus, Istanbul, Yarimca, Gemlik, Aliaga, Valencia	EMES Feeding	4
Piraeus, Istanbul, Poti, Novorossiysk, Piraeus	EMES Feeding, Evergreen, ZIM	5
Piraeus, Limassol, Piraeus	EMES Feeding, ZIM	4
Mersin, Ashdod, Haifa	EMES Feeding	4
Genoa, Livorno, Salerno, Cagliari, Alexandria, Damietta, Beirut, Mersin, Izmir, Piraeus, Genoa	EMES Feeding, Hapag Lloyd, Unimed Feeder Services	5
Gemlik, Yarimca, Istanbul, Misurata, Khoms, Gemlik	EMES Feeding	4
Tangier, Cagliari, Livorno, Genoa, Fos, Algeciras, Tangier	EMES Feeding, Hapag Lloyd	4
Tangier, Algeciras, Valencia, Rades, Tunisi, Tangier	EMES Feeding, Hamburg Sud	4
Izmir, Yarimca, Istanbul, Piraeus, Alger, Izmir	EMES Feeding	4
Yarimca, Gemlik, Istanbul, Aliaga, Piraeus, Mersin, Alexandria, Port Said, Damietta, Beirut, Latakia, Mersin, Yarimca	EMES Feeding	4
Barcelona, Valencia, Oran, Barcelona	EMES Feeding	4
Far East, Suez Canal, Ashdod, Haifa, Alexandria Dekheila, Mersin, Piraeus, Suez Canal, Far East	Evergreen, OOCL	4
Far East, Suez Canal, Malta, Barcelona, Valencia, Fos, Genoa, Malta, Beirut, Suez Canal, Far East	Evergreen	4
Far East, Suez Canal, Piraeus, La Spezia, Genoa, Fos, Valencia, Piraeus, Suez Canal, Far East	Evergreen, Y.M.L.	4
Piraeus, Mersin, Misurata, Algiers, Bizerte, Piraeus	Evergreen	4
Koper, Ravenna, Venice, Piraeus, Haifa, Ashdod, Koper	Evergreen	4
Venice, Trieste, Koper, Ravenna, Ancona, Piraeus, Dekheila, Alexandria, Limassol, Beirut, Izmir, Piraeus, Venice	Evergreen	4
Piraeus, Gebze, Haydarpasa, Bosphorus, Odessa, Constanta, Varna, Bosphorus,	Evergreen	4

Piraeus		
Piraeus, Istanbul, Gemlik, Thessaloniki, Piraeus	Evergreen	4
Piraeus, Izmir, Mersin, Ashdod, Haifa, Iskenderun, Piraeus	Evergreen	4
Piraeus, Ancona, Bari, Piraeus	Evergreen	4
North Europe, Casablanca, Piraeus, Dekheila, Alexandria, Haifa, Mersin, Piraeus, Casablanca, North Europe	Evergreen, Y.M.L.	4
Far East, Piraeus, Ambarli, Novorossiysk, Ambarli, Far East	Fesco	4
North Europe, Limassol, Ashdod, Haifa, Alexandria, Damietta, Ashdod, North Europe	Hamburg Sud, ZIM	4
North America/Central America, Lisbon, Tangier, Valencia, Cagliari, Livorno, Genoa, Fos, Barcelona, Valencia, North Europe	Hamburg Sud, Hapag Lloyd	4
La Spezia, Vado Ligure, Barcelona, Valencia, Tangier, Algiers, La Spezia	Hamburg Sud	4
Far East, Beirut, Gioia Tauro, La Spezia, Genoa, Fos, Valencia, Barcelona, Malta, Far East	Hamburg Sud, MSC	4
Valencia, Salerno, La Spezia, Fos, Algeciras, North America, Valencia	Hamburg Sud	4
Ancona, Koper, Rijeka, Venice, Piraeus, Damietta, Ancona	Hapag Lloyd, Unimed Feeder Services, Y.M.L.	4
Novorossiysk, Odessa, Constanta, Istanbul, Piraeus, Istanbul, Novorossiysk, Odessa, Constanta	Hapag Lloyd	4
Genoa, Damietta, Malta, Genoa	Hapag Lloyd	4
Alexandria, Beirut, Mersin, Port Said, Algeciras	Hapag Lloyd	4
Cagliari, Piraeus, Istanbul, Gebze, Izmir, Salerno	Hapag Lloyd	4
Izmit (Evyap), Gemlik, Istanbul, Piraeus, Izmir, Haifa, Ashdod, Antalya, Izmit	Hapag Lloyd	4
Tangier, Cagliari, Tangier	Hapag Lloyd	4
Cagliari, Livorno, Genoa, Barcelona, Valencia, North America, Valencia, Cagliari	Hapag Lloyd, ZIM	4
Tangier, Valencia, Gioia Tauro, Livorno, Genoa, Fos, Barcelona	Hapag Lloyd	4
Far East, Suez Canal, Port Said, La Spezia, Genoa, Fos, Valencia, Barcelona, Suez Canal, Far East	Hyundai Merchant Marine	4
Genoa, Castellon, Valencia, Algeciras, West Africa, Castellon, Genoa	Ignazio Messina	3
Naples, Gioia Tauro, Tunisi, Naples	Ignazio Messina	1
Genoa, Tunisi, Genoa	Ignazio Messina	3
Salerno, Antwerp, Southampton, Salerno	Ignazio Messina	4
Salerno, Antwerp, Salerno	Ignazio Messina	1
Genoa, Casablanca, Leixoes, Setubal, Genoa	Ignazio Messina	3
Piraeus, Mersin	Ignazio Messina	1
Algeciras, Leixoes	Ignazio Messina	1
Barcelona, Genoa, Barcelona	Ignazio Messina	1
Castellon, Genoa, Salerno, Port Said, Arabic-Persian Gulf, Suez, Misurata, Castellon	Ignazio Messina	2
Genoa, La Spezia, Algiers, La Spezia	Ignazio Messina	1
Genoa, Alexandria, Beirut, Misurata, Tripoli, Naples	Ignazio Messina	1
Barcelona, Marseilles, Genoa, Salerno, Alexandria, Mersin, Port Said, Arabic-Persian Gulf, East Africa, Suez, Barcelona	Ignazio Messina	2
Far East, Port Said, Haifa, Koper, Trieste, Rijeka	Maersk, MSC	4
Far East, Suez, Malta, Barcelona, Valencia, La Spezia, Gioia Tauro, Port Said, Far East	Maersk, MSC	4
Far East, Port Said, Beirut, Gioia Tauro, La Spezia, Genoa, Fos, Barcelona, Far East	Maersk	4
Koper, Trieste, Rijeka, Gioia Tauro, Port Said, Far East	Maersk	4
North America, Algeciras, Barcelona, Gioia Tauro, Naples, La Spezia, Valencia	Maersk	4
North America, Tangier, Valencia, Salerno, Livorno, Genoa, Fos, Algeciras, Tangier, Vigo, North America	Maersk	4
South America, Algeciras, Malta, Izmit (Korfezi), Ambarli, Novorossiysk, Yuzhny	Maersk	4
Central America, Vado Ligure, Livorno, Civitavecchia, Naples, Salerno	Maersk	4
Alexandria, Port Said, Haydarpassa, Marport, Kumport, Izmir, Port Said,	Metz Container Line	4



Damietta, Alexandria		
Barcelona, Valencia, Genoa, Gioia Tauro, La Spezia, Fos, Barcelona	Metz Container Line	4
Barcelona, Piraeus, Thessaloniki, Marport, Haydarpara, Izmir, Valencia, Barcelona	Metz Container Line	4
Barcelona, Valencia, Lisbon, Bilbao, Vigo, Lisbon, Cagliari, Barcelona	Metz Container Line	4
Cagliari, Odessa, Constanta, Varna, Cagliari	Metz Container Line	4
Cagliari, Gioia Tauro, Tunisi, Cagliari	Metz Container Line	4
Cagliari, Limassol, Beirut, Lattakia, Mersin, Gioia Tauro, Malta, Cagliari	Metz Container Line	4
Cagliari, Alexandria, Port Said, Gioia Tauro, Cagliari	Metz Container Line	4
Cagliari, Genoa, Livorno, Malta, Cagliari	Metz Container Line	4
Damietta, Port Said, Limassol, Beirut, Lattakia, Damietta	Metz Container Line	4
Damietta, Port Said, Dekheila, Alexandria, Damietta	Metz Container Line	4
Damietta, Port Said, Odessa, Chornomorsk, Constanta, Varna, Damietta	Metz Container Line	4
Genoa, Livorno, Cagliari, Malta, Genoa	Metz Container Line	4
Gioia Tauro, Piraeus, Gemlik, Marport, Haydarpara, Izmir, Piraeus, Gioia Tauro	Metz Container Line	4
Gioia Tauro, Thessaloniki, Gioia Tauro	Metz Container Line	4
Gioia Tauro, Piraeus, Izmir, Gioia Tauro	Metz Container Line	4
Gioia Tauro, Malta, Varna, Constanta, Novorossiysk, Poti, Chornomorsk, Odessa, Gioia Tauro	Metz Container Line	4
Gioia Tauro, Cagliari, Tunisi, Cagliari, Gioia Tauro	Metz Container Line	4
Gioia Tauro, Catania, Palermo, Salerno, Naples, Gioia Tauro	Metz Container Line	4
Gioia Tauro, Koper, Trieste, Gioia Tauro	Metz Container Line	4
Gioia Tauro, Venice, Ancona, Gioia Tauro	Metz Container Line	4
Gioia Tauro, Ravenna, Bari, Gioia Tauro	Metz Container Line	4
Malta, Trieste, Koper, Venice, Ancona, Malta, Naples, Malta	Metz Container Line	4
Piraeus, Malta, Haydarpara, Istanbul, Ambarli, Gemlik, Thessaloniki, Izmir, Piraeus	Metz Container Line	4
Piraeus, Thessaloniki, Damietta, Port Said, Piraeus	Metz Container Line, Unimed Feeder Services	4
Port Said, Cagliari, Gioia Tauro, Alexandria, Port Said	Metz Container Line	4
Valencia, Barcelona, Piraeus, Thessaloniki, Marport, Haydarpara, Izmir, Valencia	Metz Container Line	4
Piraeus, Damietta, Koper, Venice, Piraeus	Mitsui O.S.K. Lines	5
Far East, Suez Canal, Damietta, Barcelona, Valencia, Fos, Genoa, Damietta, Suez Canal, Far East	MOL, NYK Line, Y.M.L.	4
Far East, Suez Canal, Genoa, La Spezia, Barcelona, Valencia, Suez Canal, Far East	MOL, NYK Line, Y.M.L.	4
Far East, Suez Canal, Ashdod, Piraeus, Istanbul, Izmir, Mersin, Suez Canal, Far East	MOL, Y.M.L.	5
Far East, King Abdullah, Yarimca, Istanbul, Tekirdag, Piraeus, King Abdullah, Far East	MSC	4
North America, Tangiers, Gioia Tauro, Naples, Livorno, Genoa, Valencia, Algeciras, Sines, North America	MSC	4
Gioia Tauro, Naples, La Spezia, Barcelona, Valencia, Algeciras, Sines, Central America, Sines, Algeciras, Barcelona, Gioia Tauro	MSC	4
Far East, Ashdod, Piraeus, Istanbul, Aliaga, Mersin, Far East	NYK Line	4
Damietta, North America, Port Said	Orient Overseas Container Line	4
Port Said, Beirut, Limassol, Porto Said	Safmarine, Unimed Feeder Services	4
Port Said, Latakia, Mersin, Porto Said	Safmarine	4
Chornomorsk, Piraeus	Safmarine	4
Malta, Bar	Safmarine	4
Malta, Catania, Livorno, Catania, Malta	Safmarine	4
Port Tangier, Algeciras, Valencia, Barcelona, Genoa, Port Said, Arabic-Persian Gulf, Port Said, Malta, Port Tangier	Safmarine	4
Malta, Genoa, Barcelona, Valencia, Algeciras, Port Tangier, South America, Port Tangier, Algeciras, Malta	Safmarine	4

Arabic-Persian Gulf, Port Said, Damietta, Ambarli, Izmit, Odessa, Chornomorsk, Constanta, Ambarli, Iskenderun, Damietta, Port Said, Arabic-Persian Gulf	Safmarine	4
Algeciras, Vado Ligure, Naples, Salerno, Catania, Malta, Rijeka, Koper, Venice, Ancona, Malta, Naples, Algeciras	Safmarine	4
Casablanca, Port Tangier	Safmarine	4
Istanbul, Gemlik, Istanbul, Poti, Constanta, Istanbul	Safmarine	4
Istanbul, Mersin, Iskenderun, Istanbul	Safmarine	4
Port Said, Damietta, Alexandria, Porto Said	Safmarine	4
Port Said, Dekhila	Safmarine	4
Port Said, Damietta, Ashdod, Haifa, Porto Said	Safmarine, Unimed Feeder Services	4
Ashdod, Izmir	Safmarine	4
Istanbul, Azov	Safmarine	4
Koper, Trieste, Venice, Ravenna, Haifa, Ashdod, Trieste	Seago line	4
Ravenna, Koper, Trieste, Venice, Mersin, Alexandria, Ravenna	Seago line	4
Venice, Ravenna, Ancona, Piraeus, Limassol, Alexandria, Beirut, Latakia, Izmir, Venice	Seago line	4
Trieste, Venice, Ravenna, Koper, Piraeus, Izmir, Gemlik, Izmit, Istanbul, Trieste	Seago line	4
North Europe, Casablanca, Port Tangiers, Algeciras, Cartagena, North Europe	Seago Line	4
North Europe, Malta, Piraeus, Gebze, Ambarli, Gemlik, Izmir, Malta, Valencia, North Europe	Seago line, Turkon	4
Ashdod, Alexandria, Novorossiysk, Ashdod, Alexandria	Seago line	4
North Europe, Port Tangier, Malta, Alexandria, Beirut, Mersin, Port Said, Salerno, Algeciras, North Europe	Seago line	4
Algeciras, Oran, Algeciras	Seago line	4
Bejaia, Skikda, Malta, Skikda, Bejaia, Malta, Skikda	Seago line	4
Algiers, Malta, Algiers	Seago line	4
Annaba, Sfax, Malta, Annaba, Sfax	Seago line	4
Misurata, Al Khoms, Malta, Misurata	Seago line	4
Sfax, Malta, Sfax	Seago line	4
Valencia, Malta, Tunisi, Valencia	Seago line	4
Damietta, Iskenderun, Mersin, Port Said East, Damietta	Seago line	4
Salerno, La Spezia, Genoa, Gemlik, Gebze, Ambarli, Izmir, Salerno, La Spezia, Genoa	Seago line	4
Valencia, Barcelona, Fos, Piraeus, Ambarli, Izmit (Korfezi), Gemlik, Izmir, Valencia, Barcelona, Fos	Seago line	4
Valencia, Barcelona, Alexandria, Mersin, Beirut, Latakia, Iskenderun, Mersin, Izmir, Port Tangier, Algeciras, Valencia	Seago line	4
Fos, Barcelona, Valencia, Port Tangier, Casablanca, Algeciras, Genoa, Alexandria, Haifa, Genoa, Fos	Seago line	4
North Europe, Algeciras, Oran	Seago line	4
Port Said, Izmir, Haifa, Port Said	Seago line	4
Venice, Ancona, Koper, Istanbul, Yarimca, Gemlik, Aliaga, Koper, Venice	Tarros	4
Istanbul, Gebze, Piraeus, Mersin, Beirut, Alexandria, Salerno, La Spezia, Genoa, Casablanca, Leixoes, Setubal, Genoa, La Spezia, Salerno, Piraeus, Istanbul	Tarros	4
La Spezia, Genoa, Alger, Genoa, La Spezia	Tarros	3
Istanbul, Poti, Istanbul	Tarros, ZIM	3
North Europe, Istanbul, Izmit, Izmir, North Europe	Turkon	4
Genoa, La Spezia, Gemlik, Izmit, Istanbul, Izmir, Genoa	Turkon	4
Alexandria, Porto Said, Damietta, Beirut, Mersin, Istanbul, Izmit, Gemlik, Izmir, Mersin, Alexandria	Turkon	4
Kocaeli, Yarimca, Istanbul (Haydarpasa), Gemlik, Istanbul (Marport), Istanbul (Kumport), Izmir, Aliaga, Piraeus, Mersin, Beirut, Alexandria, Port Said, Damietta, Kocaeli, Yarimca	Turkon	4

Mersin, Lattakia	Turkon	5
La Spezia, Genoa, Gemlik (Rodaport), Gebze (Yilport), Istanbul (Marport), Aliaga, La Spezia	Turkon	5
Valencia, Barcelona, Fos, Istanbul (Marport), Yarimca, Gemlik (Rodaport), Izmir, Aliaga, Valencia	Turkon	5
Alexandria, Mersin, Evyap, Istanbul, Gemlik, Izmir, Aliaga, Algeciras, North America, Algeciras, Alexandria	Turkon	4
Genoa, Fos, Barcelona, Valencia	Unimed Feeder Services	4
Valencia, Barcelona, Casablanca, Valencia	Unimed Feeder Services	4
Malta, Gebze, Kumport, Gemlik, Aliaga, Malta	Unimed Feeder Services	4
Malta, Izmir, Thessaloniki, Malta	Unimed Feeder Services	4
Malta, Mersin, Beirut, Malta	Unimed Feeder Services	4
Yarimca, Istanbul (Haydarpara), Gemlik, Ambarli, Aliaga, Port Said, Damietta, Yarimca	Unimed Feeder Services	4
Alexandria, Damietta, Evyap, Istanbul (Haydarpara), Gemlik, Mardas, Aliaga, Alexandria	Unimed Feeder Services	4
Port Said, Damietta, Lattakia, Port Said	Unimed Feeder Services	4
Damietta, Alexandria, Lattakia, Tripoli, Beirut, Damietta	Unimed Feeder Services	4
Damietta, Port Said, Tobruk, Tripoli, Khoms, Misurata, Damietta	Unimed Feeder Services	4
Piraeus, Limassol, Lattakia, Piraeus	Unimed Feeder Services	4
Malta, Odessa, Constanta, Malta	Unimed Feeder Services	4
Port Said, Alexandria, Port Said	Unimed Feeder Services	4
Damietta, Port Said, Alexandria, Damietta	Unimed Feeder Services	4
Port Said, Damietta, Port Said	Unimed Feeder Services	4
Marport, Kumport, Mardas, Istanbul (Haydarpara), Evyap, Gemlik, Marport	Unimed Feeder Services	4
Ambarli, Piraeus, Malta, Annaba, Bizerte, Algier, Ambarli	Unimed Feeder Services	4
Far East, Suez Canal, Ashdod, Istanbul, Evyap, Aliaga, Mersin, Suez Canal, Far East	Yang Ming marine transportation	4
North Europe, Gioia Tauro, Piraeus, Thessaloniki, Izmir, Piraeus, North Europe	ZIM	4
Barcelona, Genoa, Livorno, Valencia, South America, Valencia, Barcelona	ZIM	4
Haifa, Ashdod, Alexandria, Koper, Venice, Ravenna, Antalya, Haifa	ZIM	4
Piraeus, Novorossiysk, Constanta, Istanbul, Ambarli, Piraeus	ZIM	4
Valencia, Yarimca, Gemlik, Valencia	ZIM	4
Piraeus, Thessaloniki, Istanbul, Ambarli, Gemlik, Piraeus	ZIM	4
Alexandria, El Dekheila, Ashdod, Novorossiysk, Alexandria	ZIM	4
Mersin, Ashdod, Haifa, Izmir, Aliaga, Piraeus, Barcelona, Valencia, Algeciras, North America, Valencia, Tarragona, Mersin	ZIM	4
Far East, Suez Canal, Ashdod, Haifa, Istanbul, Ambarli, Novorossiysk, Odessa, Istanbul, Ambarli, Haifa, Far East	ZIM	4
Arabic-Persian Gulf, Suez Canal, Haifa, Mersin, Alexandria, Istanbul, Ambarli, Izmir, Aliaga, Suez Canal, Arabic-Persian Gulf	ZIM	4
Salerno, Livorno, La Spezia, Genoa, Fos, North America, Salerno	ZIM	4