LOGISTICS AND INFRASTRUCTURE

2020

ITA
ITALIAN TRADE AGENCY

FOREWORD ON METHODOLOGY

The data contained in and employed for the present report were collected by Cerved Group through the exclusive processing of information from both public and private sources. The term 'public sources' is intended here as those publicly available from institutions including, but not limited to Assaeroporti, Assoporti, ENAC, Eurostat, ESPO, ISTAT, the Italian Ministry of Infrastructure and Transport (MIT), and the OECD. The term 'private sources' is intended here as Cerved Group's proprietary databases on the major companies that operate in the sector.

The data collected has been cross-checked in the following ways:

- Comparison of data from various sources
- Supplementation of data and information through direct requests to sector operators enabling verification of the data collected.

This has allowed the avoidance of overlap and duplications.

The data collected has then been aggregated to build a complete picture of the logistics and infrastructure industry. In detail this report considers:

- Integrated logistics, including basic and value-added services typically provided by 3PL and 4PL (e.g. storage/warehousing, goods receipt, order management and preparation, packaging, picking, ancillary activities such as assembly, labelling, customer services, reverse logistics). Simple transport services provided by carriers are not included;
- Port, dry ports and airport infrastructure.

FOREWORD ON METHODOLOGY

The graphs presented have been prepared by Cerved Group based on proprietary data and/or public sources listed above.

With regard to aggregation criteria, the following economic activity (Ateco) categories have been included in the analysis:

- 52.1 – *Warehousing and storage (and all relevant sub-categories)*
- 52.21.4 – *Operation of terminal facilities for the handling of goods (dry ports)*
- 52.22 – *Service activities incidental to water transportation*
- 52.22.09 – *Other service activities incidental to water transportation*
- 52.23 – *Service activities incidental to air transportation*
- 52.29.22 – *Logistics services related to the distribution of goods*

This enables our analysis to begin with a brief introduction to the logistics and infrastructure industry as a whole and then proceed to examine each specific segment.

Below we report the meaning of the main acronyms used in this report

- *3PL: Third Party Logistic Service Provider*
- *4PL: Fourth Party Logistics Service Provider*
- *AIV: Autonomous Intelligent Vehicle*
- *B2C: business to consumer*
- *ITU: Intermodal Transport Unit*
- *LED: Light Emitting Diode*
- *RFID: Radio Frequency Identification*
- *Ro-Ro: Roll on/Roll off*
- *TEN-T: Trans European Network – Transport*
- *TEU: Twenty-foot Equivalent Unit*
- *WCS: Warehouse Control Systems*
- *WES: Warehouse Execution Systems*
- *WMS: Warehouse Management Systems*

LOGISTICS AND INFRASTRUCTURE AT A GLANCE

THERE ARE ROUGHLY 5,400 INTEGRATED LOGISTICS COMPANIES OPERATING IN ITALY, OF WHICH 336 HAVE ANNUAL TURNOVER IN EXCESS OF €10 MILLION WITH 58,349 EMPLOYEES IN TOTAL.

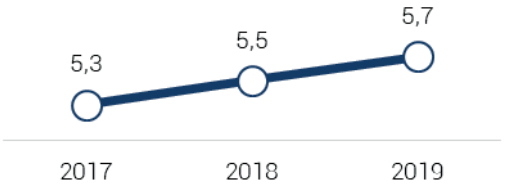
FDI STOCKS CAME TO €2,439 MILLION IN 2018, 0.7% OF THE TOTAL.

THE INFRASTRUCTURE NETWORK COMPRISES 126 DISTINCT PORTS, AIRPORTS AND DRY PORTS

58	44	24
PORTS	AIRPORTS	DRY PORTS

INTEGRATED LOGISTICS TURNOVER IN ITALY

€ bn



SEGMENTS

Mld. €

LOGISTICS AND INFRASTRUCTURE AT A GLANCE

STRATEGIC JUNCTIONS ARE LOCATED IN 4 REGIONS OF NORTHERN ITALY

THE PORT OF TRIESTE IS THE 2ND LARGEST IN THE MEDITERRANEAN FOR LIQUID BULK VOLUMES AND THE 3RD LARGEST FOR RO-RO TRAFFIC AND NON-CONTAINERISED CARGO

MILANO MALPENSA IS THE 7TH LARGEST AIRPORT IN EUROPE FOR GOODS TRAFFIC

VERONA RANKS SECOND AMONG THE 20 BEST DRY PORTS IN EUROPE

HIGHLIGHTS

In Italy **integrated logistics is taking on an increasingly important role in helping manufacturers achieve the highest levels of efficiency in inventory management and product distribution.** The rate of outsourcing, currently at 42%, continues to expand, and offers **significant scope for further development in the coming years**.

The sector features a fairly limited number of companies that generate significant turnover and are capable of offering 3PL or 4PL services. There is a richer, more fragmented cluster of small and very small companies that largely operate as subcontractors, specialising in individual stages of the logistics process or single activities.

The **infrastructure** network spreads across the whole of Italy. Nevertheless, the key strategic junctions are concentrated in the north, close to the areas with the highest concentration of manufacturing companies:

- the port of **Trieste**, the sea outlet for the Baltic-Adriatic Corridor.
- The port of **Genoa**, one end of the Rhine-Alpine Corridor. Along with the port of Trieste, it is one of the main intersections on the Mediterranean Corridor.
- **Milan Malpensa** airport, key for domestic and European air traffic. According to Airports Council International (ACI) it is the **seventh largest freight airport in Europe.**
- **Verona** dry port, located at the crossing point of the Mediterranean Corridor and the Scandinavian-Mediterranean Corridor. According to Deutsche GVZ-Gesellschaft mbH (DGG) it is the **second-ranked dry ports** in Europe.

Constant investment is required to ensure the continued efficiency of the infrastructure network and guarantee appropriate support for the transit of goods.

In the ports sector, **Port Authorities invested €433.9 million in 2018, a 41.8% increase on the previous year. Airports benefited from €378.1 million of planned or completed investments into air traffic infrastructure. On top of this, further resources were allocated to cargo areas (€13.3 million in total, both planned and completed)**.

HIGHLIGHTS

The trends that are set to influence the logistics market in the coming years are:

- Technological developments in the logistics arena (Logistics 4.0);
- Increased focus on sustainable logistics;
- Growing propensity for manufacturers to outsource logistics.

Logistics operators are investing in **hardware automation solutions** for warehouse services, both in terms of storage equipment and machinery and systems to work alongside or replace human operators, enhancing overall efficiency and communication between the various phases. Latest generation **software** enables optimisation of the flow of goods and activity within storage areas and improves the exchange of information with the client, allowing real-time tracking of the location and status of goods in transit.

HIGHLIGHTS

The main opportunities for the sector are:

- expansion of e-commerce;
- reshoring of manufacturing;
- infrastructure development in southern Italy;
- increased transit of goods in the Mediterranean.

The critical success factors within the industry are:

- territorial dominance;
- process innovation;
- extensive service portfolio

CONTENTS

INDUSTRY OVERVIEW

KEY CHARACTERISTICS

Integrated logistics turnover, with reference exclusively to the outsourcing of a significant part of the logistics process to a single supplier, and therefore excluding transfers within the transit chain, subcontracting and simple transport services, **amounted to €5.7 billion in 2019 (+2.7%).** 336 sector companies generated turnover in excess of €10 million, with 58,349 employees.

The value of services linked to the **cold chain** is estimated at around 14% of overall turnover.

The **infrastructure network** in Italy comprises 58 ports, 44 airports and 24 dry ports.

Goods traffic in and out of the leading domestic **ports** came to 472.2 tonnes in 2019. The main strategic junctions, in terms of volumes, were the ports of Trieste and Genoa. Other ports play a key role in Southern European commercial traffic: Ravenna heads the top 5 Mediterranean ports for dry bulk, followed by Taranto. In the Ro-Ro segment, Ravenna is in first place, followed by Genoa and Trieste.

In 2019, freight traffic in Italian **airports** exceeded 1 million tonnes, of which 52.1% went through Milan Malpensa, the largest domestic freight terminal, which is strategically positioned to serve the country's main productive area.

The **dry ports** network manages around 65 million tonnes of goods traffic per year. The main dry port are Verona (Quadrante Europa dry ports), which ranks second among the leading European dry ports.

KEY CHARACTERISTICS

KEY LOGISTICS FIGURES

336
TOP COMPANIES

58,349
EMPLOYEES (in top companies)

€5.7 bn
2019 TURNOVER

KEY INFRASTRUCTURES FIGURES 2019

58
PORTS
472.2 Mn. tonnes

44
AIRPORTS
1,046,756 Mn. tonnes

24
DRY PORTS
65 Mn. tonnes

KEY CHARACTERISTICS

SUPPLY SIDE CHARACTERISTICS

The supply of logistics services is **fragmented,** with a very high number of operators. The majority are small or medium-sized companies specialising in basic services, such as warehousing. On top of these there are a smaller but still sizable number of companies that generate significant turnover and provide a rich offer of value-added services, such as order management and preparation, picking, additional processing, inventory management, distribution and returns handling. In some cases, these companies oversee the entire logistics chain on behalf of the client, qualifying as integrated logistics partner (3PL) or Lead logistics provider (4PL). Overall, there are c.8,600 sector operators, of which over 6,200 classified under the ATECO code relating to logistics services and more than 2,300 linked to the ATECO code for warehousing. Some of the leading operators are domestic representatives of major international sector players.

The largest companies frequently resort to subcontracting, entrusting various warehouse activities to third-party suppliers (predominantly cooperatives).

In terms of geographical distribution, the main concentration of logistics operators is in the north of Italy, where there is the greatest presence of manufacturers.

The **dry ports** network shows similar geographical distribution, with most of the infrastructure located in Northern Italy. Management companies are small or medium-sized. Competition plays out through infrastructure capabilities, which influence the volume of traffic that can be managed each day, and above all on the location in relation to the destination of the goods in transit and the main transport corridors.

These factors are also significant for **ports** and **airports**, which appear more evenly distributed across the peninsula, but which feature a greater concentration of traffic around key strategic junctions.

In port management, the supply is massively fragmented, with a predominance of small and very small operators specialising in specific functions, and a limited cluster of mid-sized companies.

As for **airport management services** there are very few companies with significant turnover, followed by a group of smaller companies. The overall number of operators is limited.

KEY CHARACTERISTICS

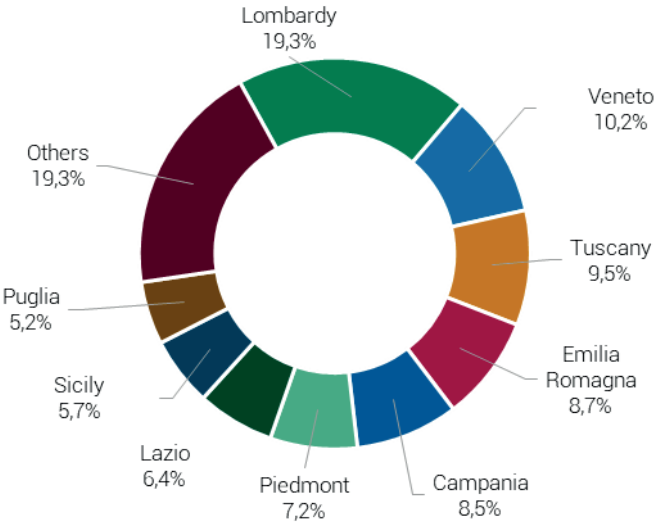
DEMAND SIDE CHARACTERISTICS

The market is made up of domestic manufacturers and large retailers.

In 2019, there were 556,188 domestic manufacturing companies, of which nearly 30% were based in two regions (Lombardy and Veneto). There was also significant concentration in other regions, such as Tuscany (9.5%) and Emilia Romagna (8.7%). In Southern Italy, Campania (8.5%) stands out.

A significant portion of manufacturing companies operate in the manufacture of metal products, food and apparel, coming to 47.8% of the overall total (Source: InfoCamere - Movimprese).

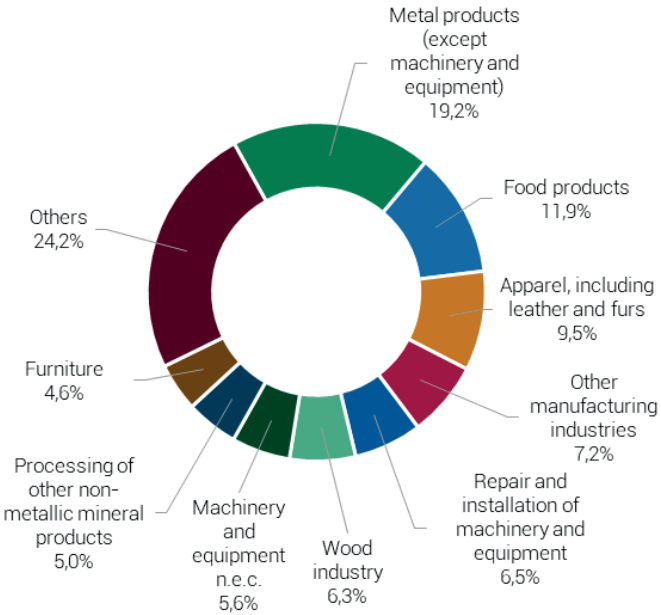
BREAKDOWN OF MANUFACTURING COMPANIES BY REGION, 2019
100% = 556,188



Source: InfoCamere-Movimprese

KEY CHARACTERISTICS

BREAKDOWN OF MANUFACTURING COMPANIES BY GOODS SECTOR, 2019
100% = 556.188



Source: InfoCamere-Movimprese

Cerved estimates that there are around 320 major food retailers in Italy. According to the Ministry for Economic Development, as at 31st December 2018 20,460 large food retail outlets were trading (hypermarkets, supermarkets, mini-markets and department stores). On top of this, there were 335 large specialist food retailers, with a combined network of 1,847 stores (latest available figures).

KEY CHARACTERISTICS

OPERATOR CATEGORISATION

Various categories of operators work in the logistics industry:

- Generalist warehouses, specialising in the storage of goods;
- Value-added operators, which in addition to warehousing, also carry out ancillary activities, further segmented as follows:
  - ◊ companies specialising by product type or client sector;
  - ◊ integrated logistics companies that cover all phases of the logistics chain for all goods categories;
  - ◊ integrated logistics companies that manage all phases of the logistics chain for specific goods categories (e.g. frozen products, dangerous goods, ready to wear garments, pharmaceuticals).

There is frequent diversification into goods transport and deliveries, especially among the largest companies and integrated logistics companies.

Within ports and dry ports logistics operators, freight forwarders, road haulage companies, terminal operators (rail and sea) and rail transport companies work alongside each other, as well as integrated manufacturing companies at the end of the logistics chain.

In airports there are:

- airport management companies that also provide handling services;
- specialist handling companies.

Operators are often organised into groups in which the various companies carry out different activities within the same airport, or provide handling services in a number of different airports.

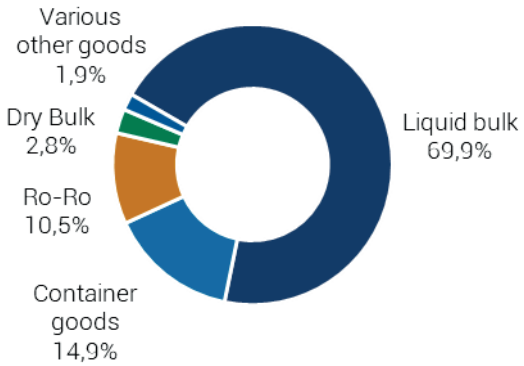
KEY CHARACTERISTICS

KEY STRATEGIC JUNCTIONS: PORTS

The port of Trieste is under the jurisdiction of the Port Authority of the Eastern Adriatic Sea. Together with the port of Monfalcone, it is the leading Italian maritime hub, managing roughly 62 million tonnes of goods, just under 70% of which are liquid bulk (Source Assoporti, 2019 figures). It is the leading sea port in Italy for this category of goods, for which it has 9 dedicated berths (8 of which are allocated to oil and gas products).

BREAKDOWN OF GOODS TRANSPORTED THROUGH PORT OF TRIESTE BY CATEGORY, 2019

100% = 62.0mn tonnes



Source: Assoporti

KEY CHARACTERISTICS

Covering c.2.3mn square metres, it has 12km of quays with 70 berths (for conventional and multifunctional vessels, container ships, RO-RO ferries, oil tankers, chemical tankers, passenger vessels, etc.). There are 20 dedicated freight terminals managed by private operators in the port area. Furthermore, the port has a 70km internal rail network. The port has a maximum depth of 18 metres (Source: Port Authority of the Eastern Adriatic Sea).

The port has an important strategic location due to the links with Central and Eastern Europe along two main axes:

- the **Baltic–Adriatic Corridor,** which connects the Mediterranean to Northern Europe. The Corridor was identified by the European Commission as an EU development priority, offering important opportunities thanks to goods arriving from China through the Suez Canal;
- the **Mediterranean Corridor**, planned to connect Spain and Hungary through a high-speed, high-capacity rail line that passes through France, Italy and Slovenia.

KEY CHARACTERISTICS OF PORT OF TRIESTE

Key characteristics	
Average distance of closest railway station	0.4
Average distance of closest airport (km)	37
Average distance of closest motorway junc-	25
Number of berths serving	
Oil & gas products	8
Other liquid goods	1
Dry bulk	5
Packaged goods	18
Containers	7
Ro-Ro	7
Other goods	4
Number of berths with dedicated railway	
Connected to the railway network	30
Not connected to the railway network	34

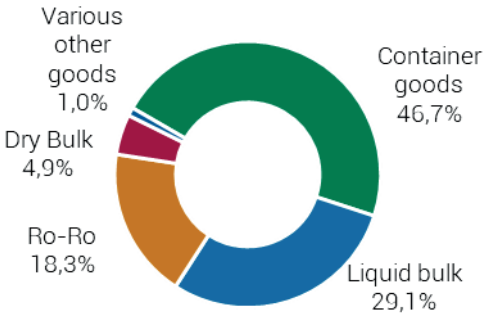
Source: Italian Ministry of Infrastructure and Transport (MIT)

KEY CHARACTERISTICS

GENOA

The port of Genoa ranks second among domestic ports in terms of goods volumes (52.8mn tonnes). Along with the port of Savona-Vado, it is under the jurisdiction of the Western Ligurian Sea Port Authority. It predominantly handles container goods (46.7%), but also liquid bulk (29.1%) and Ro-Ro goods (18.3%). (Source: Assoporti – 2019 figures).

BREAKDOWN OF GOODS TRANSPORTED THROUGH PORT OF GENOA BY CATEGORY, 2019



Source: Assoporti

The port covers an area of around 7mn square metres, with c.22km of quays. It has 76 berths, of which 58 dedicated to goods traffic.

It has two container terminals, 5 multipurpose terminals, 4 dry bulk terminals and 6 liquid bulk terminals in which private companies operate.

KEY CHARACTERISTICS

The port of Genoa is a strategic junction for North-West Italy and an important link between Europe and the Far East (primarily China), as well as North America and the Middle East, especially in terms of exports, which made up 60% of overall container traffic through the port in 2018 (Source: Western Ligurian Sea Port Authority).

Furthermore, it is a strategic crossroads for the **Rhine-Alpine Corridor,** which links Belgium and Netherlands to Italy; Genoa is its only Mediterranean port.

KEY CHARACTERISTICS OF PORT OF GENOA

Key characteristics	
Average distance of closest railway station (Km)	0.9
Average distance of closest airport (km)	0.4
Average distance of closest motorway junction (km)	0.6
Number of berths serving	
Oil & gas products	6
Other liquid goods	6
Dry bulk	8
Packaged goods	9
Containers	10
Ro-Ro	19
Other goods	-
Number of berths with dedicated railway	
Connected to the railway network	20
Not connected to the railway network	34

Source: Italian Ministry of Infrastructure and Transport (MIT)

KEY CHARACTERISTICS

THE ITALIAN PORT SYSTEM IN THE MEDITERRANEAN CONTEXT

Eurostat's classification of ports for goods transported, net of the unladen weight of the container ships or Ro-Ro vessels used, ranks **the ports of Trieste and Genoa among the top 20 in Europe.** Analysing the volume of goods arriving, Trieste is in ninth place, making it one of the three main Southern points of entry to Europe, along with Marseille (France) and Algeciras (Spain) (2018 figures – the latest available).

The Italian port system is strategically important within the Mediterranean basin. Trieste is the second largest port for liquid bulk and third for other non-containerised cargo and Ro-Ro traffic, in which it is only surpassed by Livorno and Genoa. Ravenna and Taranto are among the largest ports for dry bulk, while Gioia Tauro is in the top 5 for container traffic (2018 figures - Source: European Sea Ports Organization (ESPO) based on data for the Eurostat Annual Report 2018-2019).

RANKING OF LEADING MEDITERRANEAN PORTS IN EUROPE BY CATEGORY OF GOODS[(a)]

Ranking	Category of goods				
	Liquid Bulk	Dry Bulk	Ro-Ro	Non - containerised cargo	Container
1	Marseille (FR)	**Ravenna (IT)**	**Livorno (IT)**	Valencia (ES)	Valencia (ES)
2	**Trieste (IT)**	**Taranto (IT)**	**Genoa (IT)**	Barcelona (ES)	Piraeus (GR)
3	Algeciras (ES)	Marseille (FR)	**Trieste (IT)**	**Trieste (IT)**	Algeciras (ES)
4	Agii Theodori (GR)	Tarragona (ES)	Palma de Mallorca (ES)	Algeciras (ES)	**Gioia Tauro (IT)**
5	Cartagena (ES)	Koper (SI)	Piraeus (GR)	Marseille (FR)	Barcelona (ES)

(a) 2018 figures. Ranking of volumes net of unladen weight of transport vessels

Source: European Sea Ports Organization (ESPO) based on Eurostat data

KEY CHARACTERISTICS

KEY STRATEGIC JUNCTIONS: DRY PORTS

QUADRANTE EUROPA

The **Quadrante Europa dry port** is located in Verona, and is an important intersection point on the Mediterranean Corridor, which links Spain and Hungary, and the Scandinavian-Mediterranean Corridor, which links Italy to Northern Europe.

It is also strategically placed in light of the structure of the Italian manufacturing industry; according to ISTAT, North-Eastern Italy has the largest number of industrial districts in the country: 45, including 28 in the Veneto region.

In 2019 15,950 trains, of which 14,102 intermodal trains, carried a total of 8.4mn tonnes of goods (8.2mn tonnes of intermodal goods traffic) through the Quadrante Europa dry port. The main destination was Germany.

As for the road segment, in 2019 the dry ports handled over 22mn tonnes of goods, in line with the previous year. 75% of road traffic volumes came on articulated lorries, 22.8% on transporters and the remaining 2.2% on vans (Source: Interporto Quadrante Europa).

KEY CHARACTERISTICS

ITALIAN DRY PORTS IN THE EUROPEAN CONTEXT

According to the rankings drawn up by Deutsche GVZ-Gesellschaft mbH (DGG), there are 6 Italian entries in the list of the 20 leading European dry ports; only Germany appears more frequently, with 7 places. The classifications rank dry ports on a number of criteria, including strategic positioning, volumes of goods transported, efficiency, sustainability, and services provided in support of logistics and transport.

Interporto Quadrante Europa in Verona is the leading Italian dry port in the rankings, taking second place.

EUROPEAN DRY PORTS: TOP 20

Ranking	Dry Ports	Country
1	BREMEN	Germany
2	**INTERPORTO QUADRANTE EUROPA**	**Italy**
3	NÜRNBERG	Germany
4	ZARAGOZA (PLAZA)	Spain
5	BERLIN SÜD GROßBEEREN	Germany
6	CLIP LOGISTICS	Poland
7	**INTERPORTO DI PARMA**	**Italy**
8	**INTERPORTO BOLOGNA**	**Italy**
9	CARGO CENTER GRAZ	Austria
10	**INTERPORTO PADOVA**	**Italy**
11	**INTERPORTO CAMPANO**	**Italy**
12	BERLIN WEST WUSTERMARK	Germany
13	RRT KOUVOLA	FInland
14	**INTERPORTO DI TORINO**	**Italy**
15	LEIPZIG	Germany
16	GVZ JADE WESER PORT	Germany
17	ENNSHAFEN	Austria
18	BILK	Hungary
19	ERFURT	Germany
20	ZAL BARCELONA	Spain

Source: Deutsche GVZ-Gesellschaft mbH (DGG) 2020 rankings based on 2019 figures

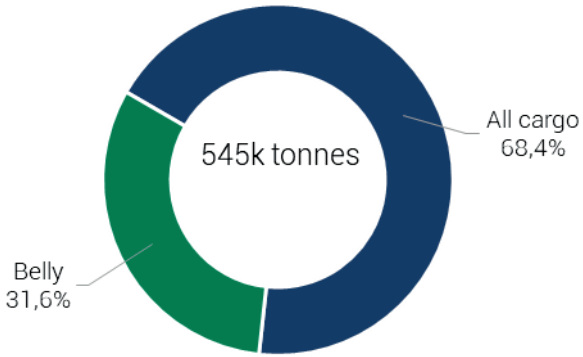
KEY CHARACTERISTICS

KEY STRATEGIC JUNCTIONS: AIRPORTS

Milan Malpensa is the most important Italian airport, accounting for over 52% of all goods transported through Italian airports. Lombardy, the region in which the airport is located, is the leading Italian region in terms of the number of industrial districts (29 – Source: ISTAT).

In 2019 it managed 545k tonnes, of which 372.8k in cargo planes and 172.2k belly freight (Source: SEA).

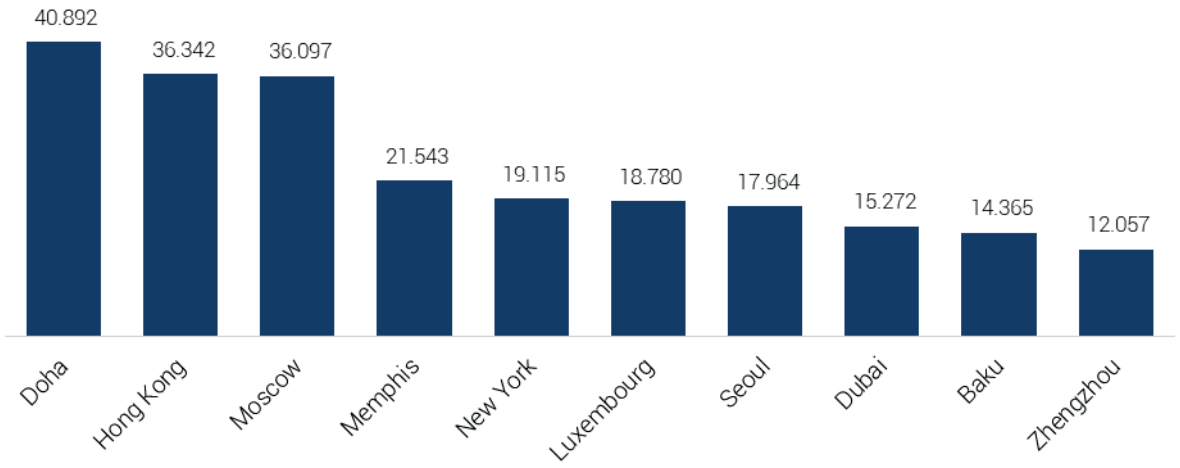
BREAKDOWN OF GOODS TRANSPORTED THROUGH MILAN MALPENSA AIRPORT BY CATEGORY, 2019



Source: SEA

KEY CHARACTERISTICS

LEADING 10 DESTINATIONS FOR MILAN MALPENSA GOODS TRAFFIC(a)

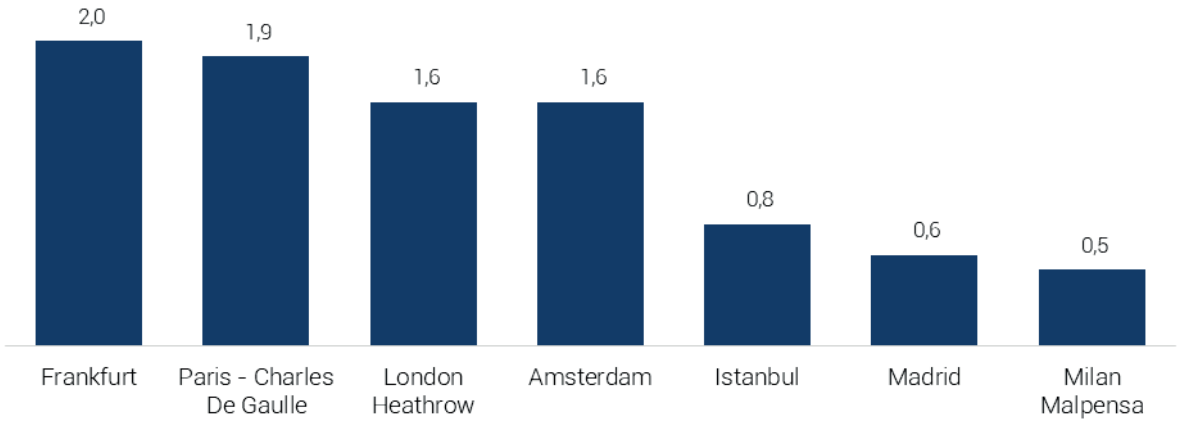


a) – Tonnes. Figures updated to 12/12/2019
Source: Confetra on SEA data

KEY CHARACTERISTICS

According to Airports Council International (ACI) World, Milano Malpensa ranks seventh among European airports for traffic volumes.

GOODS TRAFFIC THROUGH MAIN EUROPEAN AIRPORTS(a)



a) – Million tonnes. Figures updated to 12/12/2019

Source: Airports Council International (ACI) World

KEY CHARACTERISTICS

The main origins/ destinations of goods are the Middle East and Europe, followed by the Far East and North America, with marginal volumes for Central and South America, Africa and other domestic airports.

The airport's cargo zone covers 400k square metres, and contains:

- three buildings dedicated to goods handling, covering 55,000m^2 in total;
- two temperature-controlled buildings for perishable goods (4,500m^2);
- two buildings for pharmaceutical products;
- a 15,000m^2 structure for express couriers (Source: SEA).

According to the 2020-2035 airport development masterplan, approved by ENAC, the space dedicated to goods traffic will be expanded, with 3 new front-line buildings to be constructed (alongside the apron), each covering 15,000m^2. Further new buildings will be constructed away from the apron, up to a maximum of 9. Moreover, there are plans to build a new Service Centre for hauliers, with parking, repair shops and catering.

KEY SECTOR DATA

INTEGRATED LOGISTICS

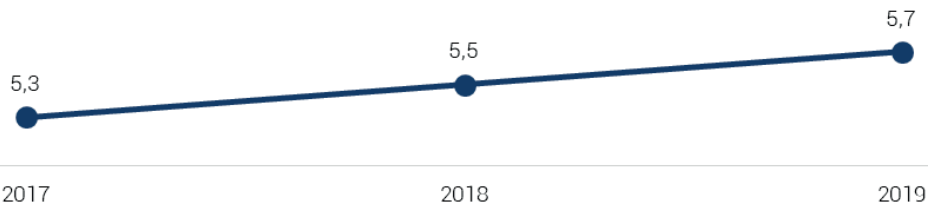
According to Milan Polytechnic University's Contract Logistics monitor, the logistics industry, comprising warehouse management services, goods transport and integrated logistics (excluding simple transport services) generated €17.8 billion in turnover in 2017, a 2.2% increase on the previous year (latest available figures).

With reference exclusively to the outsourcing of a significant part of the logistics process to a single supplier, and therefore excluding transfers within the transit chain, subcontracting and simple transport services, estimated turnover **amounted to €5.7 billion in 2019,** a 2.7% increase on the previous year.

Overall, there are over 5,400 companies operating in the sector. Nevertheless, the highly fragmented structure of the sector is demonstrated by the fact that only 336 sector companies generated turnover in excess of €10 million, with 58,349 employees in total.

INTEGRATED LOGISTICS TURNOVER, 2017-2019

€ bn

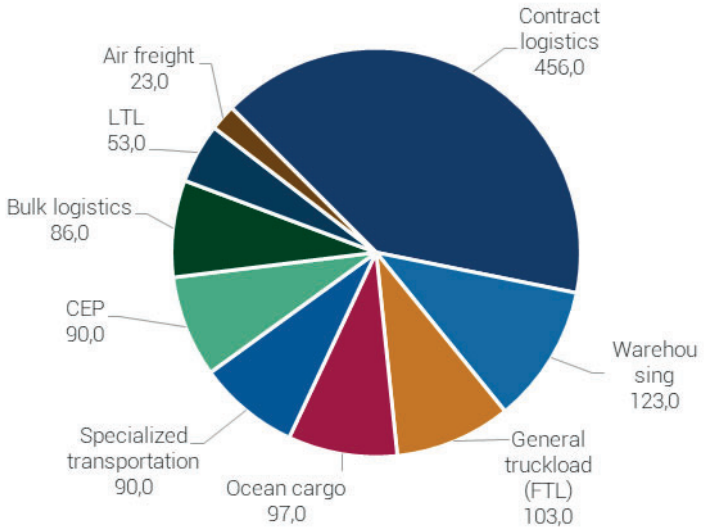


KEY SECTOR DATA

According to Statista, the **value of the global logistics market,** in its broadest sense, i.e. including warehousing, sea, land and air transport, product distribution and delivery of post and parcels, exceeded €5,582 billion in 2018.

The equivalent figure for Europe is c.€1,100 billion, of which €456 billion relative to contract logistics and €123 billion to warehousing activity.

BREAKDOWN OF EUROPEAN LOGISTICS TURNOVER BY SEGMENT, 2018
Total: €1,121.0 bn



Source: Statista based on data from Fraunhofer, DVZ, Bundesvereinigung Logistik

KEY SECTOR DATA

THE COLD CHAIN

The provision of logistics services dedicated to **refrigerated and frozen products** is a niche market occupied by highly-specialised companies. There are 46 major companies (i.e. joint stock companies with annual turnover in excess of €10mn), with 7,295 employees.

KEY SECTOR DATA

Cerved estimates that the **national turnover** generated in 2018 by logistics services for refrigerated and frozen products (e.g. food and pharmaceuticals) net of transfers within the transit chain, subcontracting and simple transport services, **came to c.€800 million, corresponding to 14% of total integrated logistics turnover** (estimate based on annual reports and proprietary data). The majority of this turnover is generated by a small group of players.

There is significant growth potential in the frozen segment, where trade is expanding, while opportunities in refrigerated food products are fewer, given more uncertain consumption trends: in 2019 Italian spending on fresh fish products (-1%), milk and milk derivatives (-0.1%) and meat (-0.8%) fell slightly, while consumption of cold cuts rose (+1.3) (Source: ISMEA based on Nielsen data).

According to the latest figures issued by the Italian frozen food institute (Istituto Italiano Alimenti Surgelati - IIAS) domestic consumption of frozen products came to 849,900 tonnes in 2019, up 1.3% on the previous year. Looking exclusively at the retail channel consumption came to 531,400 tonnes, up 1.5%.

In 2019, the **global cold chain logistics market,** including transport services, exceeded US$188 billion, well up on around US$160 billion the previous year. Global storage capacity for refrigerated products came to 616mn m^3 in 2018 (+2.7%). The leading countries were India (150mn m^3), the USA (131mn m^3) and China (105mn m^3) (Source: Statista and Global Cold Chain Alliance).

Statista figures show that the **European** cold chain logistics market is worth US$75.1 bn, and is expected to grow to as much as US$112.8 bn by 2025.

KEY SECTOR DATA

INFRASTRUCTURE: PORTS

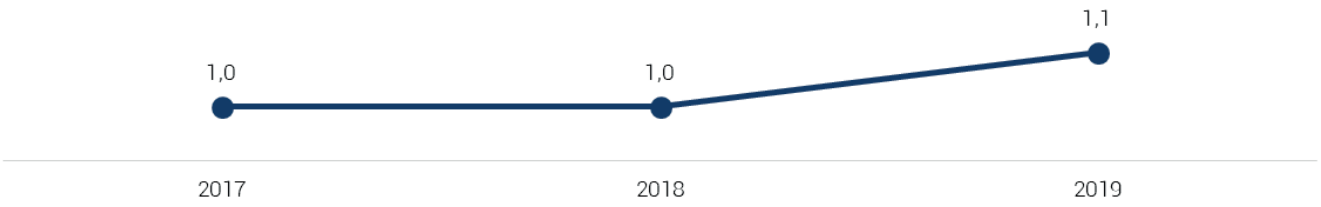
KEY SECTOR DATA

There are 58 ports of national significance in Italy, overseen by Port Authorities (AdSP) (Source: Italian Infrastructure and Transport Ministry – MIT).

Overall turnover deriving from the management of port infrastructure is estimated to have come to c.€1.1 billion in 2019, up 1.8% on the previous year. There are around 1,050 companies of various types operating in this area, of which 223 generated annual turnover in excess of €1 million, with a total of 5,388 employees.

ITALIAN TURNOVER FROM MANAGEMENT OF PORT ACTIVITIES

€ bn



KEY SECTOR DATA

Ports play a key role in the management of goods entering and leaving Italy: 55.4% of imports and 41% of exports come by sea (Source: ISTAT, 2019 figures).

2019 Assoporti figures show that the main domestic ports transported 479.2 million tonnes of goods, predominantly liquid bulk (179.5 million tonnes), container goods (111.1 million tonnes) and Ro-Ro goods (106.4 million tonnes), followed by dry bulk (58.8 million tonnes) and various other goods (23.4 million tonnes). Container traffic came to 10.8 million TEUs.

Italy accounts for 12.3% of total maritime traffic in the European Union (EU28), the second largest proportion after Netherlands (14.9%). It is also one of the European leaders in Short Sea Shipping (SSS), again taking second place with 16.2% of total volumes, only exceeded by the United Kingdom (16.3%) (Source: Eurostat).

Genoa and Trieste are the main Italian ports, in terms of overall volumes of goods transported. Nevertheless, an analysis of the various goods categories shows a more diversified and fragmented picture, which includes ports located all along the peninsula. In **liquid bulk**, Trieste was responsible for 24.1% of the total, followed by Cagliari – Sarroch with 15% and Augusta (11.4%). In **dry bulk** the leading port was Ravenna (19%), followed by Taranto and Venice with 15.6% and 10.5% respectively. For **container goods**, the leaders remained Gioia Tauro (25.9%) and Genoa (22.2%), followed by La Spezia with 12%. In **Ro-Ro** traffic there were key roles for Livorno (15.1%), Genoa (9.1%) and Salerno (7.6%). Finally, in **various other goods** the main port was Ravenna (27.5%), followed by Taranto (19.7%) and Cagliari – Sarroch (11.5%).

KEY SECTOR DATA

GOODS TRAFFIC IN LEADING ITALIAN PORTS, BROKEN DOWN BY PORT AUTHORITY(a)

System Port Authority	2019 (mn tonnes)	TEU
Western Ligurian Sea	**67,2**	**2.669.917**
Genoa	52,8	2.615.375
Savona - Vado	14,4	54.542
Eastern Ligurian Sea	**18,9**	**1.490.537**
La Spezia	15,9	1.409.381
Marina di Carrara	3,0	81.156
Northern Tyrrhenian Sea	**44,9**	**789.833**
Livorno	36,7	789.833
Piombino	5,4	-
Porto Ferraio - Rio Marina - Cavo	2,8	-
Central-Northern Tyrrhenian Sea	**14,6**	**112.249**
Civitavecchia	9,6	112.249
Fiumicino	3,5	-
Gaeta	1,5	-
Central Tyrrhenian Sea	**32,9**	**1.095.156**
Naples	18,6	681.929
Salerno	14,3	413.227
Gioia Tauro	**29,7**	**2.522.876**
Gioia Tauro	29,1	2.522.876
Crotone	0,2	-
Corigliano Calabro	0,4	-

(cont.)

KEY SECTOR DATA

(cont.) GOODS TRAFFIC IN LEADING ITALIAN PORTS, BROKEN DOWN BY PORT AUTHORITY(a)

System Port Authority	2019 (mn tonnes)	TEU
Messina Strait	**24,3**	-
Messina Milazzo - Tremestieri	24,3	-
Ionian Sea	**18,1**	-
Taranto	18,1	-
Southern Adriatic Sea	**15,5**	**82.742**
Bari	6,1	82.627
Brindisi	7,5	105
Manfredonia	0,6	10
Barletta	0,8	-
Monopoli	0,5	-
Central Adriatic Sea	**11,8**	**176.193**
Ancona - Falconara	10,8	176.193
Ortona	1,0	-
Central-Northern Adriatic Sea	**26,3**	**218.138**
Ravenna	26,3	218.138
Northern Adriatic Sea	**26,2**	**593.126**
Venice	24,9	593.070
Chioggia	1,3	56
Eastern Adriatic Sea	**66,1**	**790.542**
Trieste	62,0	789.640
Monfalcone	4,1	902

(cont.)

KEY SECTOR DATA

(cont.) GOODS TRAFFIC IN LEADING ITALIAN PORTS, BROKEN DOWN BY PORT AUTHORITY(a)

System Port Authority	2019 (mn tonnes)	TEU
Sea of Western Sicily	**6,5**	**14.124**
Palermo	5,8	14.124
Termini Imerese	0,7	-
Sea of Eastern Sicily	**29,9**	**63.179**
Catania	8,5	63.179
Augusta	21,4	-
Sea of Sardinia	**46,3**	**151.405**
Cagliari-Sarroch	34,7	151.405
Olbia	5,5	-
Porto Torres	3,7	-
Golfo Aranci	0,2	-
Oristano	1,5	-
Portoscuso-Portovesme	0,7	-
TOTAL	479,2	10.770.017

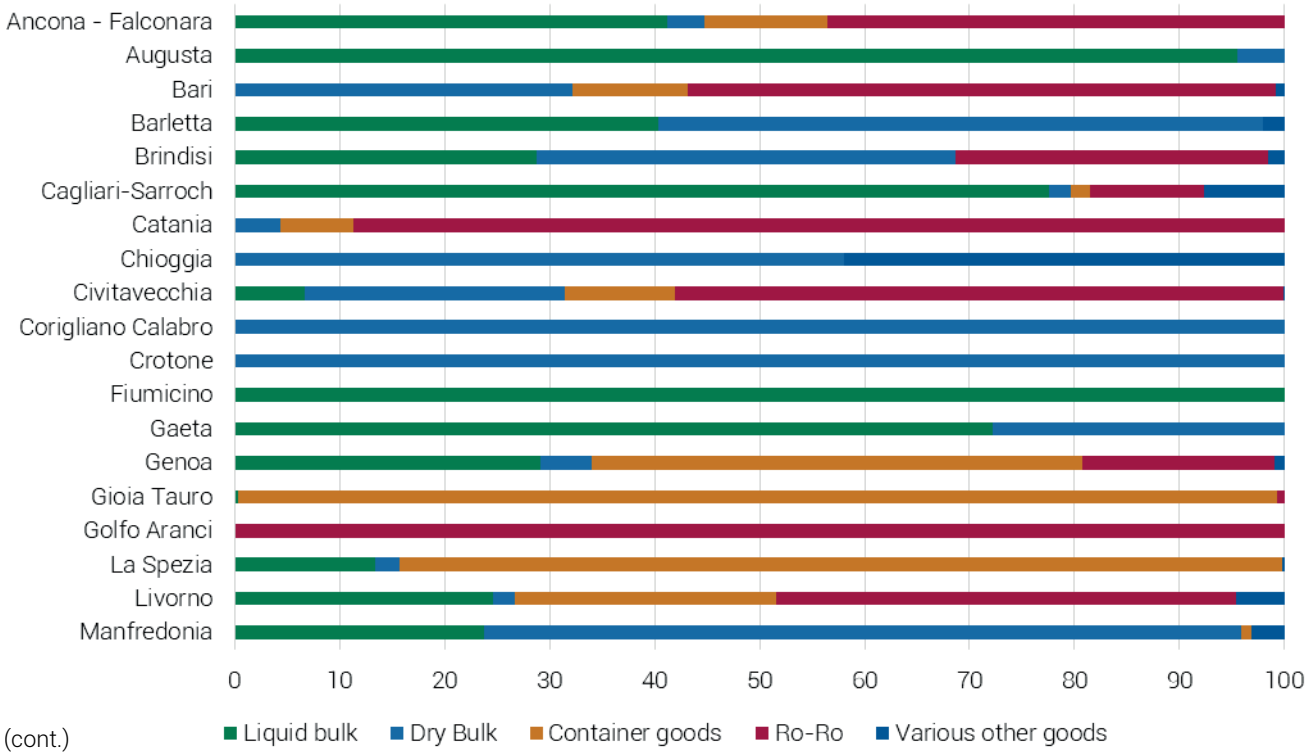
a) Figures include weight of transport vehicle. Only ports with goods traffic shown

Source: Assoporti

KEY SECTOR DATA

PORT TRAFFIC BY GOODS CATEGORY, 2019

(% of total volume)



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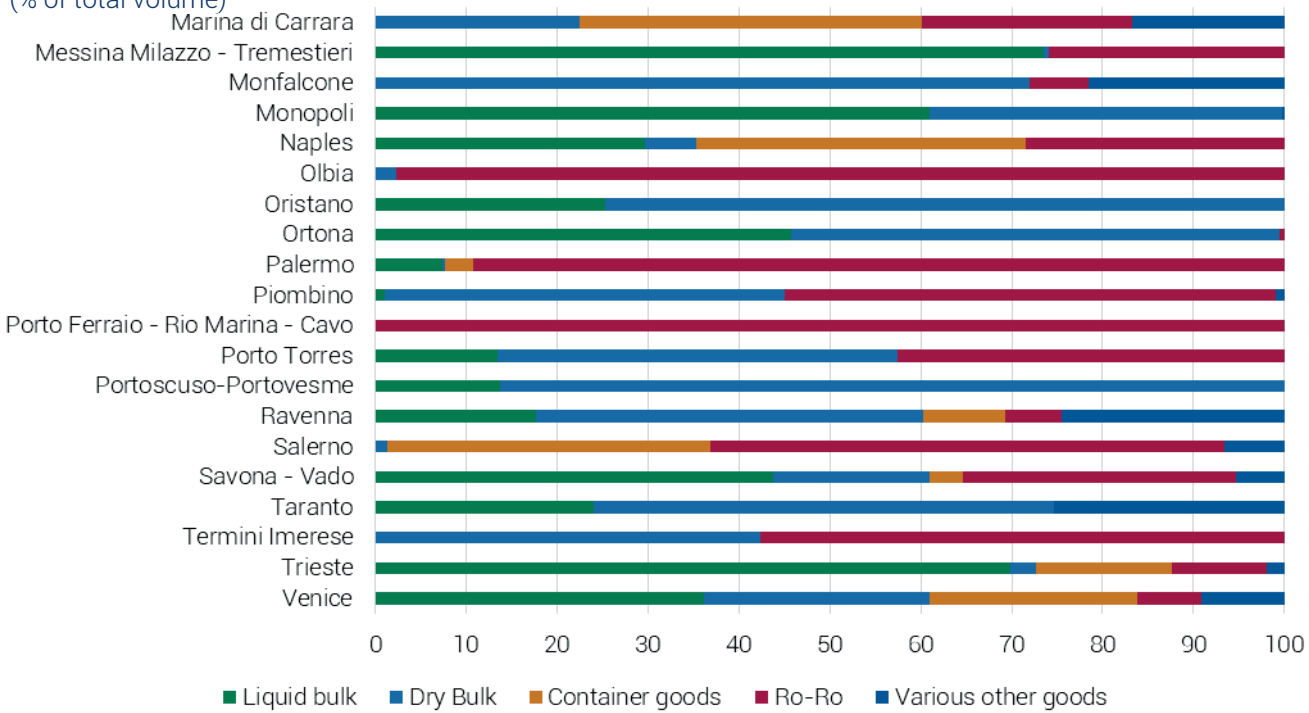
KEY SECTOR DATA

(cont.) PORT TRAFFIC BY GOODS CATEGORY, 2019

(% of total volume)



a) Figures calculated on volumes including weight of transport vehicles

Source: Assoporti

KEY SECTOR DATA

INFRASTRUCTURE: DRY PORTS

KEY SECTOR DATA

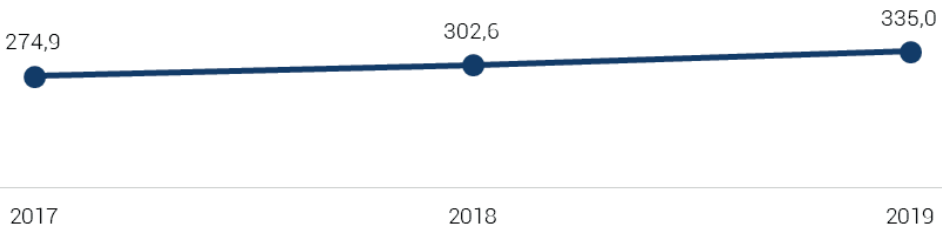
Turnover from the management of dry ports came to €335 million in 2019, a 10.7% increase in line with the growth rate recorded the previous year.

There are 24 dry ports in Italy, through which 65 million tonnes of goods are transported each year. They are often managed by a number of companies with different specialisations (e.g. management of the dry ports and management of logistics platforms).

Overall, there are 78 companies of various types involved in the management of dry ports, with 865 employees. There are also over 1,357 private companies operating within the dry ports, including rail and road transport companies and logistics operators.

TURNOVER FROM MANAGEMENT OF DRY PORTS, 2017-2019[(a)]

€ mn



a) Aggregate turnover of companies operating under Ateco code 52.21.4 "Operational of terminal facilities for the handling of goods (dry ports)"

KEY SECTOR DATA

Cumulative surface area of all Italian dry ports is just under 34 million m^2, of which 44% is attributable to just 4 (Verona, Maddaloni (CE), Bologna and Turin).

The dry ports system includes over 90km of railways and 4.9million m^2 of warehouses. 89.8% of the warehouse area is at ambient temperature, with the remaining 10.2% being made up of temperature-controlled facilities (Source: MIT and Unione Interporti Riuniti - UIR).

KEY SECTOR DATA

LOCATION AND CLOSEST TEN-T CORRIDOR FOR ITALIAN DRY PORTS

Dry ports	Location	TEN-T(a) Corridor
Interporto Regionale della Puglia	Bari	Scandinavian - Mediterranean
Interporto Bologna	Bentivoglio (BO)	Baltic - Adriatic; Mediterranean; Scandinavian - Mediterranean
Interporto Cervignano del Friuli	Cervignano del Friuli (UD)	Baltic - Adriatic and Mediterranean
Interporto Toscano	Collesalvetti (LI)	Scandinavian - Mediterranean
ISE Interporto Sud Europa	Maddaloni (CE)	Scandinavian - Mediterranean
Terminal Intermodale di Mortara	Mortara (PV)	Rhine – Alpine
Interporto Campano	Nola (NA)	Scandinavian – Mediterranean
Interporto di Novara	Novara	Rhine - Alpine and Mediterranean
Interporto Centro Italia	Orte (VT)	Scandinavian – Mediterranean
Interporto Padova	Padua	Baltic - Adriatic and Mediterranean
Interporto di Parma	Bianconese di Fontevivo (PR)	Mediterranean and Scandinavian - Mediterranean
Interporto d'Abruzzo	Manoppello Stazione (PE)	Baltic – Adriatic
Interporto di Portogruaro	Portogruaro (VE)	Baltic - Adriatic and Mediterranean
Interporto della Toscana Centrale	Prato (PO)	Scandinavian - Mediterranean
Rivalta Terminal Europa	Tortona (AL)	Rhine – Alpine
Interporto di Rovigo	Rovigo	Mediterranean
Interporto di Torino	Orbassano (TO)	Mediterranean
Interporto di Trento	Trento	Scandinavian - Mediterranean
Interporto di Trieste	Monrupino (TS)	Mediterranean and Baltic - Adriatic
Interporto di Vado	Vado Ligure (SV)	Rhine – Alpine
Interporto Quadrante Europa	Verona	Scandinavian - Mediterranean and Mediterranean
Interporto delle Marche	Jesi (AN)	Scandinavian - Mediterranean
Interporto di Venezia	Venice	Baltic - Adriatic and Mediterranean
Società degli Interporti Siciliani	Catania	Scandinavian - Mediterranean

a) Trans -European Transport Network

Source: MIT

KEY SECTOR DATA

KEY CHARACTERISTICS OF ITALIAN DRY PORTS

Dry ports	Total Operators (no.)	Total surface area (m2)	Ware-house area (m2)	Ambient storage warehouses (m2)	Temp. controlled warehouses (m2)	Customs	Railway lines	Max. train length (m)
Interporto Regionale della Puglia	50	400.000	77.400	57.400	20.000	YES	4 x 600m 12 x 500m	600
Interporto Bologna	120	3.713.093	518.248	460.590	57.658	YES	17 (length n.d.)	750
Interporto Cervignano del Friuli	6	460.000	24.000	23.400	600	YES	6 x 750m 2 x 450m	450
Interporto Toscano	36	2.500.000	106.600	73.500	33.100	YES	2 x 650m	600
ISE Interporto Sud Europa	25	4.100.000	350.000	352.000	25.000	YES	11 x 750m	750
Terminal Intermodale di Mortara	12	705.278	30.852	30.000	-	NO	2 x 650m 1 x 700m	650
Interporto Campano	138	2.900.000	416.000	389.575	26.000	YES	7 x 900m	750
Interporto di Novara	42	845.000	66.500	66.000	500	YES	7 x 600m 1 x 560m 4 x 400m	650
Interporto Centro Italia	4	325.000	12.500	6.000	6.500	YES	2 x 800m	680
Interporto Padova	140	2.000.000	270.000	251.350	18.650	YES	8 x 450m 8 x 750m 2 x 690m	750
Interporto di Parma	103	2.521.815	574.000	530.000	44.000	YES	3 x 350m	350
Interporto d'Abruzzo	18	960.000	78.000	78.000	-	NO	5 x 680m	680
Interporto di Portogruaro	48	300.000	33.000	8.000	-	YES	4 x 500m 2 x 360m	478

(cont.)

KEY SECTOR DATA

(cont.) KEY CHARACTERISTICS OF ITALIAN DRY PORTS

Dry ports	Total Operators (no.)	Total surface area (m2)	Ware-house area (m2)	Ambient storage ware-houses (m2)	Temp. controlled ware-houses (m2)	Customs	Railway lines	Max. train length (m)
Interporto della Toscana Centrale	64	712.000	96.200	92.900	3.300	YES	2 x 700m 2 x 620m 4 x 300m	700
Rivalta Terminal Europa	n.d.	1.250.000	430.000	410.000	20.000	YES	4 x 450m	440
Interporto di Rovigo	30	350.000	41.000	31.000	10.000	YES	3 x 480m 1 x 250m 2 x 250m	500
Interporto di Torino	200	3.000.000	900.000	867.900	32.100	YES	2 x 450m 2 x 600m	600
Interporto di Trento	130	1.000.000	246.000	215.000	25.000	YES	3 x 720m 4 x 550m 2 x 400m	720
Interporto di Trieste	30	229.000	33.000	33.000	-	YES	3 x 450m 3 x 350m	450
Interporto di Vado	10	232.000	59.000	41.900	17.100	n.d.	n.d.	n.d.
Interporto Quadrante Europa	130	4.200.000	400.000	250.000	150.000	YES	5 x 650m	600
Interporto delle Marche	8	540.000	12.500	11.000	1.500	YES	9 (length n.d.)	640
Interporto di Venezia	12	230.000	70.097	70.097	-	YES	2 (total length 4,600m)	300
Società degli Interporti Siciliani	1	290.000	15.000	15.000	-	YES	n.d.	400

Source: MIT

KEY SECTOR DATA

OTHER INFORMATION ON SOME LEADING ITALIAN DRY PORTS(a)

Dry ports	
Interporto Bologna	In 2019 1,773,465 trucks (+8.8% vs. 2018) and 3,105 trains (+13.4%) arrived/ departed. There were 50,361 railway carriages, a 20% increase.
Interporto Toscano	605,000 transits through the truck terminal and 239 trains in total (arriving and departing)
ISE Interporto Sud Europa	2,300 trains per year in transit
Terminal Intermodale di Mortara	Dry port capable of managing 150,000 intermodal transport units (ITU) per year
Interporto Campano	In 2019 the inland port managed 5,436,220 tonnes of road traffic, in line with 2018. The dry port transported 151,378 TEU (+1.8%)
Interporto di Novara	Over 4mn tonnes of goods transported per year. The dry port can manage 24 pairs of trains per day.
Interporto Padova	Over 4.1mn tonnes of traffic per year. 96% of the rail traffic in transit is intermodal, corresponding to 275k TEU. 5,500 trains are managed per year.
Interporto di Portogruaro	Over 1mn tonnes of goods transported in 2017; 900 complete trains
Interporto della Toscana Centrale	The dry port has the capacity to move 120,000 TEU per year, and manage 4 trains a day. The area dedicated to rail carriage transport can manage 200,000 tonnes of goods per year.
Rivalta Terminal Europa	Around 1.4mn tonnes of goods transported per year.
Interporto di Torino	Roughly 3mn tonnes of goods transported per year
Interporto Quadrante Europa	Over 22mn tonnes of goods moved on the road in 2019, in line with 2018. An additional 8.4mn tonnes of goods transported by rail (of which 8.2mn tonnes intermodal).

a) latest available figures
Source: processing of data from company websites

KEY SECTOR DATA

INFRASTRUCTURE
AIRPORTS

KEY SECTOR DATA

Total turnover from airport handling activity was €644 million in 2019, a 3.5% increase on the previous year.

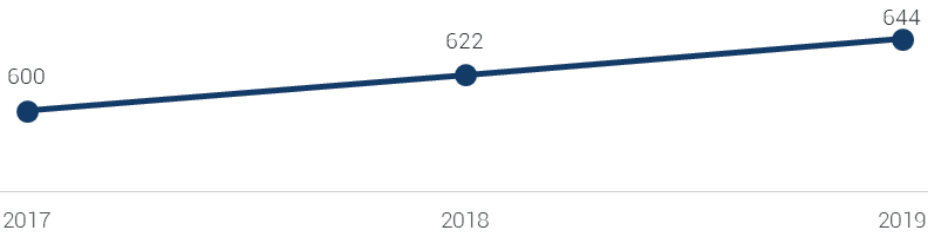
There are c.300 joint stock companies active in services connected to air transport, with 26,840 employees in total.

The Italian airport system includes 44 certified commercial airports, 3 of which are defined as being of strategic national importance (Milan Malpensa, Rome Fiumicino and Venice). (Source: Italian National Civil Aviation Authority - ENAC).

In 2019 there was over 1mn tonnes of goods traffic (excluding post) through the main airports. 81% was concentrated in three airports: Milan Malpensa, Rome Fiumicino and Bergamo (Orio al Serio) (Source: Assaeroporti).

TURNOVER FROM AIRPORT HANDLING ACTIVITY, 2017-2019

€ mn



KEY SECTOR DATA

GOODS TRANSPORTED THROUGH MAIN AIRPORTS(a)

Airport	2019 (tonnes)
Alghero	2,9
Ancona	7.021,3
Bari	262,0
Bergamo	118.964,0
Bologna	48.810,0
Brescia	8.755,0
Brindisi	11,0
Cagliari	1.179,0
Catania	2.028,6
Crotone	0,4
Florence	178,7
Genoa	2.693,0
Lamezia Terme	62,6
Lampedusa	19,0
Milan Linate(b)	6.380,0
Milan Malpensa	544.977,9
Naples	10.449,7

(cont.)

KEY SECTOR DATA

(cont.) GOODS TRANSPORTED THROUGH MAIN AIRPORTS(a)

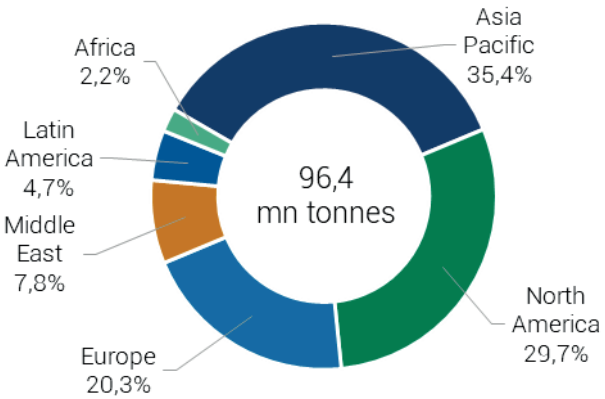
Airport	2019 (tonnes)
Olbia	93,4
Palermo	409,0
Parma	27,2
Pescara	276,0
Pisa	12.944,7
Reggio Calabria	29,4
Rimini	4,4
Rome Ciampino	18.408,1
Rome Fiumicino	186.491,7
Taranto-Grottaglie	7.588,0
Turin	3.334,0
Trapani	12,2
Trieste	276,5
Venice	63.913,6
Verona	1.152,7
TOTAL	1.046.756,0

a) Only airports with goods traffic shown. Post volumes excluded
b) Milan Linate airport was closed from 27th July to 25th October. Operational activity was transferred to Milan Malpensa
Source: Assaeroporti

KEY SECTOR DATA

According to the Airports Council International (ACI) World report on 716 airports, in 2019 global goods traffic reached 96.4mn tonnes. The Asia-Pacific area has the highest proportion (34.1mn tonnes), closely followed by North America with 28.6mn tonnes. Europe is the third largest cluster, with 19.6mn tonnes.

BREAKDOWN OF GLOBAL AIRPORT GOODS TRAFFIC BY GEOGRAPHICAL AREA, 2019(a)



a) Data from 716 airports

Source: Airports Council International (ACI) World

MAIN TRENDS

LOGISTICS 4.0

Technological developments are key drivers for improving efficiency and enhancing the levels of service offered to clients. Companies are therefore investing in the introduction of next generation hardware and software that enable the optimisation of warehouse activity, and also create real-time information exchanges between the various stages of the logistics chain and with the customer.

According to data published by Research on Investments (ROI) in May 2020, 55% of companies in the logistics, retail sales and manufacturing sectors are investing in warehouse automation.

Examples of innovative hardware include:

- automated warehouses, single-, double- or multi-depth, with stacker cranes that move on rail tracks to pick up or deposit pallets and boxes, and are capable of working up to considerable heights, optimising warehouse space;

MAIN TRENDS

- drones equipped with high-resolution cameras for monitoring stock levels and carrying out inventories by reading bar codes. These drones are supported by ground robots and use geolocation to move around the storage area;
- artificial intelligence, deployed in:
  - ◊ *Autonomous Intelligent Vehicles (AIV)*, capable of interacting with their surroundings and avoiding obstacles (people and objects, both stationary and moving). They can operate independently, in groups, or in conjunction with a human operator (in follow-me or precede-me modes) to carry out warehouse activities;
  - ◊ *Cobots*, or anthropomorphic robots designed to work alongside a human employee, from whom they learn by replicating movements. They are mainly used for repetitive actions, picking or packing. As they are equipped with sophisticated safety mechanisms they can be used in close proximity to the human operator, without the need for protective barriers.

MAIN TRENDS

The other area of interest is software. The main applications are:

- Warehouse Management Systems (WMS). Programmes that manage logistical flows, monitor stock levels, process orders and manage returns. The standout WMS application is voice picking;
- Warehouse Control Systems (WCS). Software that manages warehouse machinery and automated equipment (e.g. stacker cranes, conveyors, etc.), in execution of WMS orders. There are a wide range of applications in highly-automated warehouses with little direct input from human operators;
- Warehouse Execution Systems (WES). A hybrid of WMS and WCS solutions that incorporate the basic functions of each.

MAIN TRENDS

The most attractive software innovations are in the following areas of application:

- Inventory & Order Management, a key variable, especially in logistics for fast-moving goods in sectors such as e-commerce. This area includes applications for the 3D mapping of warehouses, which provide real-time information without the need to read bar codes;

- Supply Chain Visibility, enabling real-time communication between all network operators. The main advantage is the identification of critical points in the various phases of the logistics process and the opportunity to increase customer satisfaction thanks to a more timely and punctual response to delivery delays and increased availability of tracking and tracing services.

Finally, a recent innovation which is not yet in use, but which could have widespread applications in the logistics arena in the coming years, is the intelligent label developed and patented by ENEA Research Centre researchers at Portici (Naples) in early 2020. It contains a wireless indicator that can memorise when certain temperature thresholds have been exceeded. This information can subsequently be read through RFID technology. Completion of the development of this type of label, and its broad diffusion, could have an important impact on the cold chain, or more widely on all logistics linked to perishable goods.

MAIN TRENDS

SUSTAINABLE LOGISTICS

Improvements in sustainability are closely linked to Logistics 4.0. According to Milan Polytechnic University's Contract Logistics Monitor (research carried out in November 2019 on 69 warehouses representing a surface of 2.067.644 m2 - latest data available), the most widespread solutions are:

- LED lighting (present in 85% of the mapped areas by m^2);
- High-frequency battery chargers (59% of m^2);
- Motion sensors (50% of m^2);
- Interventions to improve thermal insulation of warehouses (48% of m^2).

There is also widespread use of forklifts powered by lithium-ion batteries, instead of traditional lead batteries.

Despite the higher initial investment for the replacement of forklifts or conversion of their power supply (a lithium-ion battery costs around 4 times as much as a lead battery), there are a number of advantages:

- environmental: they don't emit fumes, unlike lead batteries
- lower energy costs for recharging (-25% vs. traditional lead batteries, according to LIUC research)
- smaller than traditional batteries, and can therefore be fitted to more compact forklifts
- can be recharged in any area of the warehouse, whereas lead batteries require a dedicated room with extraction hoods and ventilation systems
- possibility of short (as little as 10-15 minutes) incomplete recharging, whereas lead batteries must be fully recharged. This reduces the need for duplicate batteries in order to be able to operate for the entire day.
- longer average life than lead batteries (c.3,200/3,300 recharging cycles vs. c.1,200).

Moreover, there is evidence of a trend for the transformation of warehouses from carbon-positive to carbon-neutral, with neutralisation of CO_2 emissions, or even carbon-negative, which are capable of generating clean energy that can be sold externally.

MAIN TRENDS

INCREASED PROPENSITY FOR OUTSOURCING OF LOGISTICS

There is a steadily growing tendency for Italian manufacturing companies to outsource logistics services.

Some of the advantages of outsourcing are:

- Reduction in logistics management costs;
- Enabling focus of resources and energy on the core business;
- Increased efficiency in logistics process thanks to the intervention of a specialist, dedicated operator.

While the prevailing approach continues to involve the outsourcing of individual stages of the logistics chain, the most rapidly developing trend is for the entire process to be entrusted to a single partner capable of providing 360° coverage.

Considering the overall turnover generated by logistics and distribution services, including transport, excluding transfers within the transit chain, in 2017 (the latest available figure) the rate of outsourcing had reached 41.7%, much higher than in previous years. Indeed, in 2009 this percentage was just 36.4% (Source: Milan Polytechnic University's Contract Logistics Monitor – November 2019).

In this respect, Italy represents a country with high potential for development. On the one hand, the demand side is increasingly moving towards more comprehensive outsourcing. On the other hand, there is still a significant proportion of the market where logistics is managed internally, suggesting considerable future opportunities.


INTERNATIONAL PERSPECTIVE

INVESTMENTS IN ITALY

R&D SPENDING

The latest available figures provided by the Organisation for Economic Co-operation and Development (OECD) indicate that in 2016 R&D spending in the Transport and Storage sector came to €41.4 million, 76.7% of which was invested by companies operating under Ateco codes pertaining to the sector and the remaining 23.3% by operators in other areas.

INFRASTRUCTURE INVESTMENTS

As part of the European structural and investment funds (ESIF) programme for the 2014-2020 period, Italy was allocated an overall budget of €3.4 billion for interventions in Network Infrastructures in Transport and Energy, 72.5% of which was financed by the European Union (Source: European Commission – figures updated to July 2020).

As for **port infrastructure**, in 2018 **overall investments made by Port Authorities came to €433.9 million, a 41.8% increase on the previous year.** Most of this spending relates to the completion of design and construction works (88.5%). The largest investments in 2018 were made by the Northern Adriatic and Central Tyrrhenian Port Authorities (Source: MIT Report on Port Authority Activity, latest available figures).

PORT AUTHORITY INVESTMENTS, 2017 AND 2018

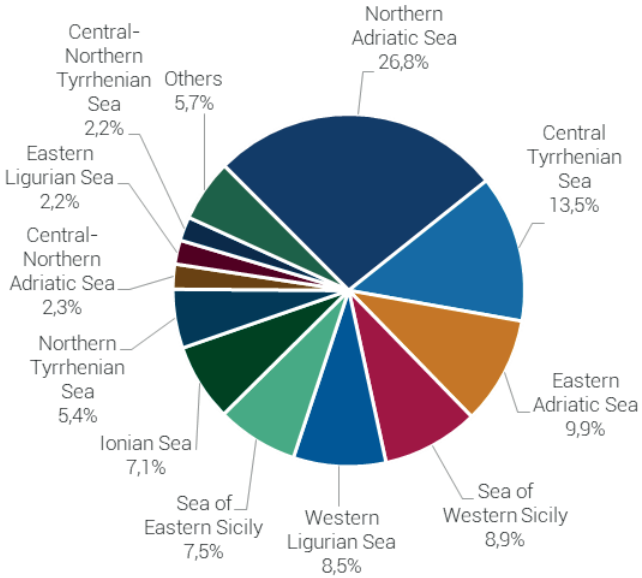
€ mn

Investment type	2017	2018	% chg. 18/17
Design and construction works	231,7	383,8	65,6
Extraordinary maintenance	66,8	40,5	-39,4
Port systems, equipment, movable and immovable assets	7,6	9,6	26,3
Total	**306,1**	**433,9**	**41,8**

Source: MIT Report on Port Authority Activity

INVESTMENTS IN ITALY

BREAKDOWN OF PORT AUTHORITY INVESTMENTS, 2018
100% = €433.9mn



Source: MIT Report on Port Authority Activity

According to ENAC, in 2018 €536 million was invested in Italian airports, bringing the total for the 2015-18 period to €2.2 billion.

Considering just the flight infrastructure built at **key strategic airports**, the total investment was €120.3 million, to which should be added €257.8 million of combined further spending already included in the airports' development plans. The majority of these resources are concentrated in the airports of Venice (27.1%), Rome Fiumicino (19%) and Bergamo (12.1%).

As far as cargo investments are concerned, the total comes to €4.8 million, of which €4.4 million can be attributed to Milan Malpensa. A further €8.5 million of spending is planned.

INVESTMENTS IN ITALY

INVESTMENTS IN FLIGHT INFRASTRUCTURE AND CARGO AT LEADING ITALIAN AIRPORTS, 2018 (a)

	2018 (€ X 1,000)			
	Flight Infrastructure		Cargo	
Airport	Planned	Completed	Planned	Completed
Alghero	-	66	-	-
Ancona	600	-	1.500	-
Bari	-	2.349	-	-
Bergamo	15.338	14.600	1.254	125
Bologna	5.508	6.866	3.000	165
Brescia	-	5.504	-	43
Brindisi	17.514	1.187	-	-
Cagliari	3.270	7.660	-	-
Catania	5.700	274	-	-
Florence	-	2.049	-	-
Genoa	-	1.110	-	-
Lamezia Terme	-	1.629	-	-
Milan Linate	2.600	266	-	-
Milan Malpensa	-	954	-	4.411

(cont.)

INVESTMENTS IN ITALY

(cont.) INVESTMENTS IN FLIGHT INFRASTRUCTURE AND CARGO AT LEADING ITALIAN AIRPORTS, 2018(a)

	2018 (€ X 1,000)			
	Flight Infrastructure		Cargo	
Airport	Planned	Completed	Planned	Completed
Naples	2.300	753	2.000	80
Olbia	17.290	370	-	-
Palermo	523	28	-	-
Pescara	5.000	32	-	-
Pisa	1.677	46	-	-
Rimini	-	156	-	-
Rome Ciampino	6.218	7.539	-	-
Rome Fiumicino	106.989	22.833	700	-
Taranto-Grottaglie	-	1.744	-	-
Turin	1.780	1.614	-	15
Trieste	3.943	1.387	-	-
Venice	55.157	32.563	-	-
Verona	6.350	6.735	-	-
TOTAL	**257.757**	**120.314**	**8.454**	**4.839**

a) includes self-financed and public sector investments. Excludes investments in categories other than flight infrastructure and cargo

Source: ENAC (State of infrastructure investments in national airports)

INVESTMENTS IN ITALY

INVESTMENT IN LOGISTICS BUILDINGS

In 2019 investments in logistics real estate in Italy approached €1.4 billion; this marked a 53.8% increase on 2017. Italian investments come to 14.4% of the €9 billion total for Europe as a whole (+2.5% vs. 2018), making Italy one of the most attractive markets for investors. From a geographical point of view, investments remain concentrated in the Lombardy region, and in particular the zone between the A4 motorway and the Via Emilia highway, up to their intersection point (Source: World Capital).

FOREIGN DIRECT INVESTMENTS (FDI)

According to OECD figures, in 2018 **stocks** of inward foreign direct investments (FDI) into Italian warehousing and transport support activity came to €2,439 million, accounting for 0.7% of the total for Italy. Transport support activity consists of:

- Palletizing/depalletizing
- Order management
- Labeling
- Other warehouse services

Inward FDI represent 22% of the total in the transport and warehousing segment and 3% of total FDI, which increased by 5.2% in 2018. In terms of **FDI income**, in 2018 warehousing and transport support reached 1.6% of the total, thanks to a 5.9% increase in 2017. The trend for the entire transport and storage segment was also positive (+28.2%), in stark contrast to the trend for overall FDI (-1.1%).

INCOME FROM ITALY'S INWARD FDI STOCKS, 2017 AND 2018

€mn and %

Activity	Income from inward FDI			
	2017	2018	% chg. 18/17	as % of 2018 stock
Transport and storage(a)	915	1.173	28,2	6,8
of which:				
Warehousing and transport support(b)	257	272	5,9	1,6
Other sectors	16.491	16.040	-2,7	93,2
Total	**17.405**	**17.213**	**-1,1**	**100,0**

a) - transport activities are included
b) - transport activities are not included
Source: processing of OECD data

INVESTMENTS IN ITALY

FOREIGN-OWNED COMPANIES IN ITALY

Among **integrated logistics** companies with turnover in excess of €10 million, there are 24 with foreign investment, almost exclusively in Northern Italy. 81% of these are controlling stakes in companies that generate cumulative turnover of c.€1.1 billion with over 6,300 employees in total. Investments in Central and Southern Italy are predominantly controlling interests; the companies in question have aggregate turnover of some €79 million and have 79 employees.

INTEGRATED LOGISTICS: COMPANIES WITH FOREIGN INVESTMENT, 2020(a)

€mn, no and %

	Area		
	North	Centre/South	Total
Active companies with some foreign investment			
-Total	21	3	24
-Foreign controlling interest	17	2	19
- % foreign controlling interest	81,0	66,7	79,2
Employees of such companies			
-Total	7.096	376	7.472
-Foreign controlling interest	6.333	79	6.412
- % foreign controlling interest	89,2	21,0	85,8
Aggregate 2018 turnover of active companies with some foreign investment			
-Total	1.430,0	98,9	1.528,9
-Foreign controlling interest	1.106,2	79,1	1.185,3
- % foreign controlling interest	77,4	80,0	77,5

a) – figures relate to companies operating under Ateco code 52.1 "Warehousing and storage (and relative sub-codes)" and 52.29.22 "Logistics services related to the distribution of goods". Only joint-stock companies with turnover equal to or higher than €10 million are considered

INVESTMENTS IN ITALY

There are 15 **port management** companies with some foreign investment, 3 of which are majority foreign-owned, all in Northern Italy. Aggregate turnover of the companies with some foreign investment is €95.2 million, and they have 266 employees in total.

PORTS: COMPANIES WITH FOREIGN INVESTMENT, 2020(A)

€mn, no and %

	Area		
	North	Centre/ South	Total
Active companies with some foreign investment			
-Total	7	8	15
-Foreign controlling interest	3	-	3
- % foreign controlling interest	42,9	-	20,0
Employees of such companies			
-Total	142	124	266
-Foreign controlling interest	65	-	65
- % foreign controlling interest	45,8	-	24,4
Aggregate 2018 turnover of active companies with some foreign investment			
-Total	50,6	44,6	95,2
-Foreign controlling interest	36,3	-	36,3
- % foreign controlling interest	71,7	-	38,1

a) - figures relate to companies operating under Ateco code 52.22.09 " Other service activities incidental to water transportation ". Only joint-stock companies with turnover equal to or higher than €10 million are considered

INVESTMENTS IN ITALY

There are 6 **dry ports** management companies with some foreign investment. 5 of these are located in Northern Italy, and they generate €70.8 million in turnover and have 212 employees. There are only two cases where foreign investors have a controlling interest.

DRY PORTS: COMPANIES WITH FOREIGN INVESTMENT, 2020(a)

€mn, no and %

	Area		
	North	Centre/ South	Total
Active companies with some foreign investment			
-Total	5	1	6
-Foreign controlling interest	1	1	2
- % foreign controlling interest	20,0	100,0	33,3
Employees of such companies			
-Total	212	10	222
-Foreign controlling interest	42	10	52
- % foreign controlling interest	19,8	100,0	23,4
Aggregate 2018 turnover of active companies with some foreign investment			
-Total	70,8	14,8	85,6
-Foreign controlling interest	48,4	14,8	63,2
- % foreign controlling interest	68,4	100,0	73,8

a) - figures relate to companies operating under Ateco code 52.21.4 "Operation of terminal facilities for the handling of goods (dry ports)"

INVESTMENTS IN ITALY

In **airport handling** there are 21 companies with foreign investment, 16 of which are located in Northern Italy. The majority of these are controlling interests (68.8% on average), relating to companies generating aggregate turnover of €332.7 million with 2,071 employees in total.

AIRPORTS: COMPANIES WITH FOREIGN INVESTMENT, 2020(a)

€mn, no and %

	Area		
	North	Centre/ South	Total
Active companies with some foreign investment			
-Total	16	5	21
-Foreign controlling interest	11	3	14
- % foreign controlling interest	68,8	60,0	66,7
Employees of such companies			
-Total	4.928	1.365	6.293
-Foreign controlling interest	2.071	1.346	3.417
- % foreign controlling interest	42,0	98,6	54,3
Aggregate 2018 turnover of active companies with some foreign investment			
-Total	1.050,4	47,7	1.098,1
-Foreign controlling interest	332,7	46,0	378,7
- % foreign controlling interest	31,7	96,4	34,5

a) - figures relate to companies operating under Ateco code 52.23 "Service activities incidental to air transportation". The totals for turnover and employee numbers include a portion not attributable to airport handling, as sector companies also provide other services


INDUSTRY ACTRACTIVENESS

INDUSTRY ATTRACTIVENESS RADAR, 2020(a)

a) – The smaller the area between the five points, which represent attractiveness factors, the more attractive the sector

THREAT OF NEW ENTRANTS

Average threat of new entrants. The main possibilities are for operators in adjoining businesses, such as transport, that decide to enhance their offer by moving into logistics services. The risk is greater in more basic services (e.g. storage), but diminishes as the complexity of the service provided increases.

BARGAINING POWER OF SUPPLIERS

In general, suppliers have below average bargaining power. It is extremely limited when it comes to simple transport services, where supply is highly fragmented and small and very small operators are prevalent.

INDUSTRY ATTRACTIVENESS RADAR

BARGAINING POWER OF BUYERS

Buyers have significant bargaining power due to the requirement for highly customised services and the fragmentation of supply. Price sensitivity is very high.

THREAT OF SUBSTITUTE PRODUCTS

There are not currently any services that can replace logistics. The only risk derives from potential client decisions not to outsource the logistics process.

RIVALRY AMONG EXISTING FIRMS

Competition is very fierce in both basic and value-added services. Nevertheless, the value-added services provide an opportunity to differentiate the services on offer from those provided by rivals.

OPPORTUNITIES

E-COMMERCE

The rapid expansion of e-commerce represents a major growth opportunity for logistics companies, as it generates increased demand for dedicated services.

In 2019, the value of online purchases made by Italian consumers reached €31.6 billion (+15% vs. 2018), of which €18 billion linked to the purchase of physical products (+21%). The most heavily purchased items were IT and electronics goods (€5.3 billion, +19%), followed by apparel (€3.3 billion, +16%).

Exports, i.e. the value of sales to foreign consumers on Italian websites, reached €4.4 billion (+13%), of which €3 billion generated in product sales (also +13%). Apparel played the dominant role, responsible for around 70% of the revenue from online exports.

Northern Italy is the highest potential area: 56% of e-commerce deliveries originated in Northern Italy, 23% in Central Italy and the remaining 21% in the South and islands (Source: B2C e-commerce monitor, Milan Polytechnic University).

2020 forecasts suggest an acceleration in the value of online product sales (+26%), mainly thanks to the contributions from Home & Living (+30%) and Food & Grocery (+56%) sectors, which are the fastest growing. As for the largest product categories sold, i.e. IT/electronics and apparel, sales are expected to increase by 18% and 21% respectively (Source: B2C e-commerce monitor, Milan Polytechnic University – figures up to date as of July 2020).

The logistics segment dedicated to e-commerce is characterised by:

- Preponderance of packages and parcels of a smaller size and weight, in contrast with traditional logistics, in which larger loads are more common;
- Need for real-time inventory management;
- Speed of delivery, making maximum efficiency in order picking and preparation essential;
- Crucial role in management of returns (reverse logistics), a key area of differentiation between competitors.

OPPORTUNITIES

RESHORING OF MANIFACTURING

Reshoring, or the relocation of production sites to Italy after a period in which they had been moved abroad, may help expand the demand for integrated logistics services from medium-sized and large companies.

According to the European Foundation for the Improvement of Living and Working Conditions (Eurofund), Italy was among the European countries most affected by this trend in the 2014-2018 period. Indeed, it was in second place, with 39 cases of reshoring, only surpassed by the United Kingdom, with 44 cases, and closely followed by France with 36. Other countries trail significantly further behind.

Recent events linked to the Covid-19 pandemic could give the reshoring process a further boost, highlighting some of the drawbacks of the implementation of global supply chains (such as difficulties in times of crisis for companies relying on foreign suppliers to procure items necessary for their production processes). In the medium to long term more and more companies are expected to decide to bring production back to Italy in order to enable direct control of the entire supply chain.

Reshoring can be particularly advantageous for Italian companies that manufacture high-end products and base their strategies on the prestige of the *Made in Italy* mark. Bringing all phases of the manufacturing process back to Italy would deliver great benefits in terms of both image and product quality, given the well- qualified domestic workforce in some highly specialised areas of processing and craftsmanship. On the other hand, relocating production to Italy involves significant investments. Moreover, after prolonged recourse to offshoring it might even be possible that the expertise to produce certain components has been lost and therefore very difficult to be found at home.

OPPORTUNITIES

INFRASTRUCTURE DEVELOPMENT IN SOUTHERN ITALY

In May 2020 the Italian Ministry for Infrastructure & Transport launched began the tender process to finance the completion of the national dry ports network, with particular reference to areas in Southern Italy, where the concentration of dry ports is currently lower than in the North. The allocation of €45 million is part of the 2018-2022 plan drawn up by the dedicated infrastructure development and investment fund. Beefing up the infrastructure network in this part of the country may contribute to the development of the manufacturing fabric and drive growing demand for logistics services and other activities connected to the movement of goods.

INCREASED GOODS TRAFFIC IN THE MEDITERRANEAN

The increase in goods traffic in the Mediterranean basin represents a development opportunity for the entire Italian logistics and infrastructure sector. Indeed, as well as having a central geographical position, Italy also has a higher number of ports than the other European countries with Mediterranean coastlines.

In 2019 over 1 billion tonnes of goods were transported through the Suez Canal, a 4.9% increase on the previous year. 55.5% of this traffic related to goods leaving Europe, with 44.5% of traffic coming the other way (Source: Suez Canal Authority).

CRITICAL SUCCESS FACTORS

PROCESS INNOVATION

Successful companies are focused on innovation in logistics hubs thanks to systems and equipment that enhance the level of service offered to customers, exploiting opportunities deriving from technological evolution (Logistics 4.0).

This allows more effective coverage of high-potential markets, such as e-commerce, for example (21% growth in 2019, with a further 26% development projected for 2020), in which interconnection between the various stages of the logistics process and between suppliers and client companies is of fundamental importance. Moreover, it offers significant scope to differentiate the offer from those of competitors, facilitating customisation of the service to the specific needs of different manufacturing companies.

CRITICAL SUCCESS FACTORS

TERRITORIAL DOMINANCE

A presence in areas with the highest production density is a strategically important factor, as is proximity to the leading strategic land, sea and air transport corridors. 47.7% of manufacturing companies are located in four regions of Central and Northern Italy (Lombardy, Veneto, Tuscany and Emilia Romagna), and these regions also play host to the main integrated logistics players and the most established infrastructure in terms of volumes of goods transported.

EXTENSIVE SERVICE PORTFOLIO

The market rewards companies capable of offering a comprehensive range of integrated logistics services, starting with the provision of value-added services on platforms and extending right through to the transport and product distribution stages. Indeed, the leading players put themselves forward as 360° logistics partners.

The ability to tailor the service to the customer's requirements while remaining competitive on price is another fundamental element that represents a key driver of customer choice. Specialisation by client sector is also crucial, with the development of specific expertise and the exploitation of economies of scale, especially in areas with distinctive needs such as the cold chain. The main integrated logistics players dedicated to these activities tend not to operate in other goods categories.

ITALIAN TRADE AGENCY