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The contribution of passenger shipping to the Greek economy

Athens, November 2017

Study scope and objectives

Study objectives

- Analyse the latest data and developments in passenger shipping*
- Highlight the challenges the sector still faces
- Underline the importance and the potential of the sector

Study scope

- Greek passenger shipping
  - Domestic routes
    - Coastal shipping
    - Short-distance ferry lines
  - International routes
    - Adriatic sea routes
    - Others

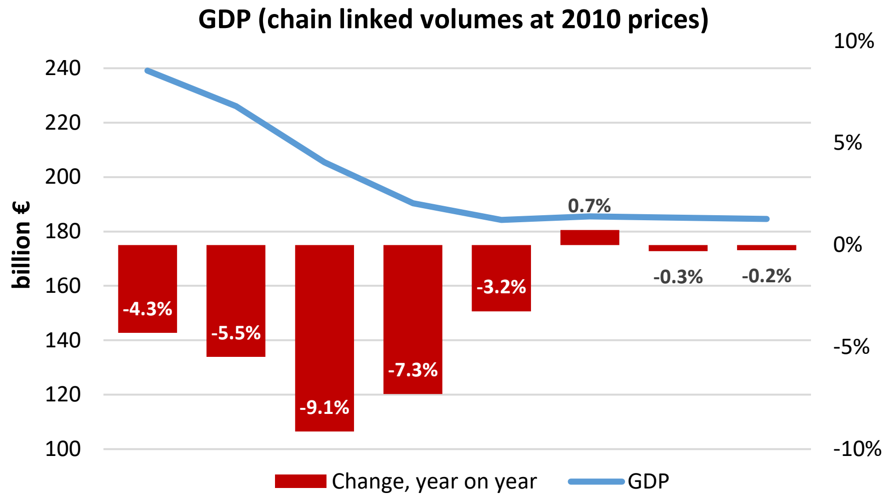
(*) The study examines the domestic coastal shipping routes, the routes between Kyllini-Zakynthos and Kyllini-Poros Kefallinias and the Adriatic sea routes. The study does not examine cruises and ferry lines which make short distance calls.

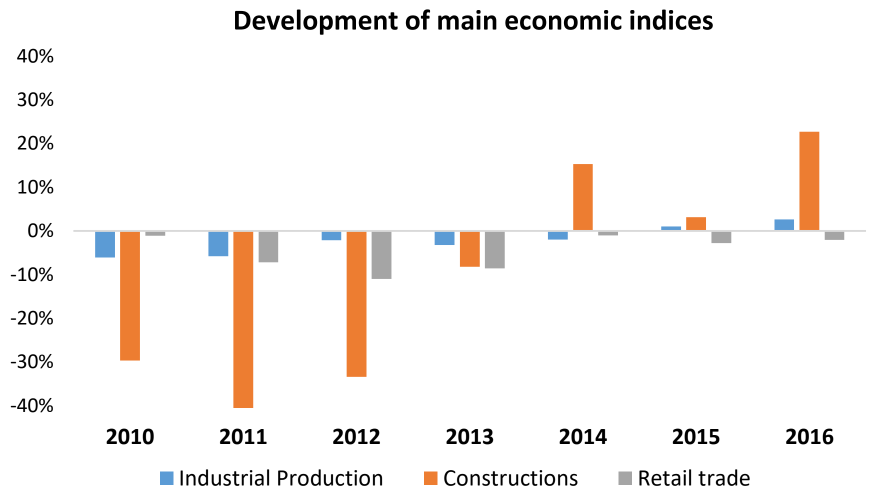
Contents

1. The Greek passenger shipping sector : Current state

1.1 Changes in the economic environment

GDP remained stable between 2014 and 2016



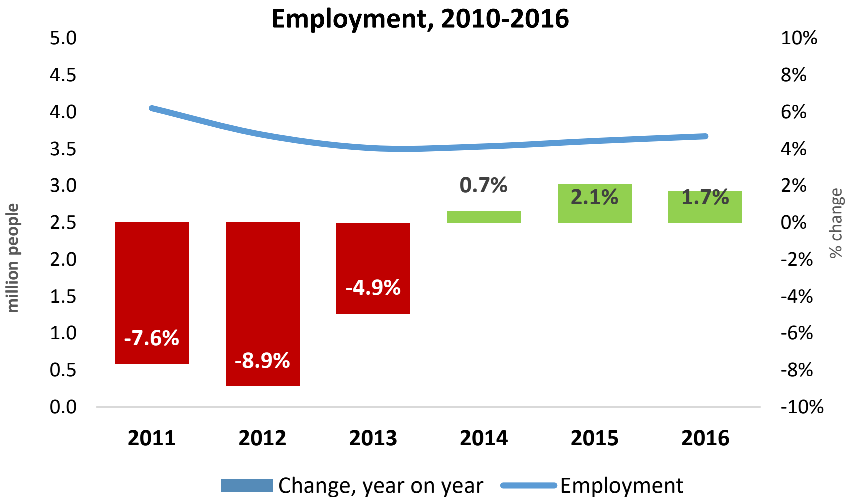


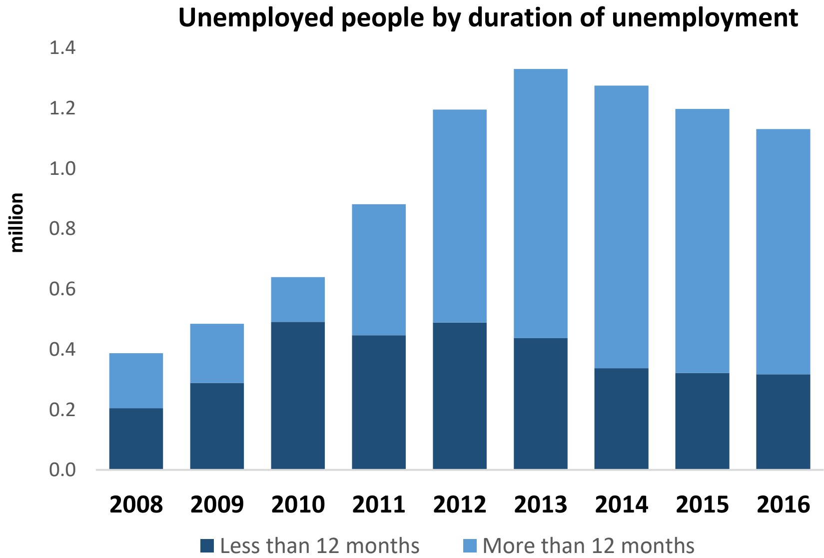
Source: ELSTAT **Data processing:** IOBE

- Following the deep recession since 2008, the GDP in the country today is close to its 2003 level
  - In 2016, GDP remained stable against a contraction by 1.3% in 2015
- General government attained a surplus of €1.3 billion (0.7% of GDP)
  - For the first time since at least 1995
- After almost 4 years of deflation, the Consumer Price Index increased by 1.4% in the first five months of 2017
- Exports stood at €25.1 billion in 2016 (-1.5% compared to 2015)
- Industrial production increased marginally in 2016
- The turnover index of Retail Trade remained unchanged
- The production index in Construction increased by 23% (mainly due to public works)
  - Substantially higher growth than in 2015 (+3%).

The public finances of Greece have consolidated

Unemployment in Greece has dropped, yet it is the highest in the EU

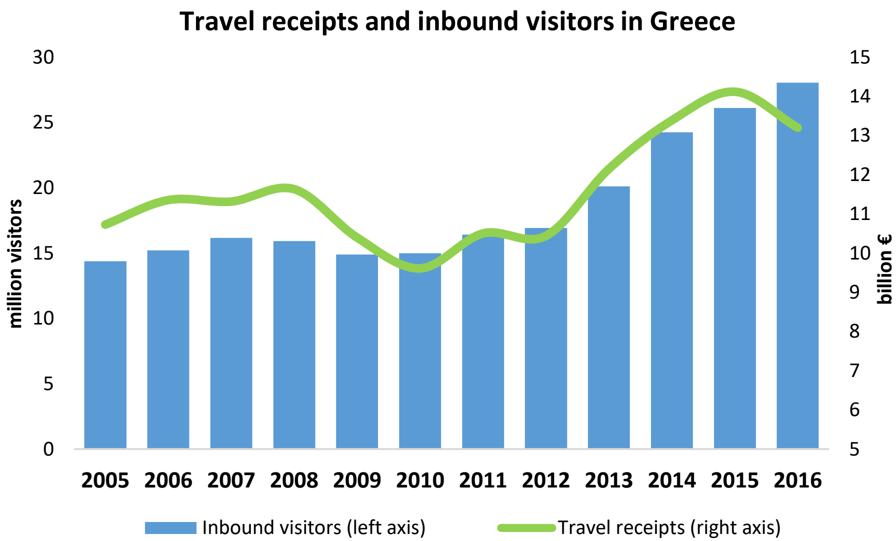


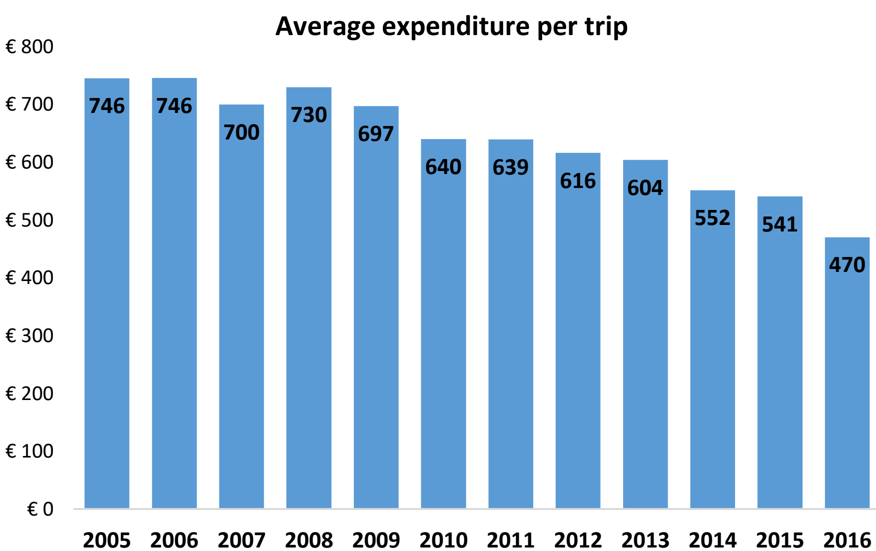


Source: ELSTAT **Data processing:** IOBE

- In 2016 employment in Greece stood at 3.7 million people
  - Increase by 1.7% compared to 2015
- The number of unemployed declined to 1.13 million in 2016
  - Decrease by 6% in comparison to 2015
- The unemployment rate was at 23.5% in 2016, against 24.9% in 2015
  - In the Euro area, the unemployment rate dropped to 10%, from 10.9%
- The majority of unemployed in Greece (almost 3 out of 4) remain without a job for more than a year (long-term unemployed)

Inbound visitors increased but travel receipts dropped in 2016

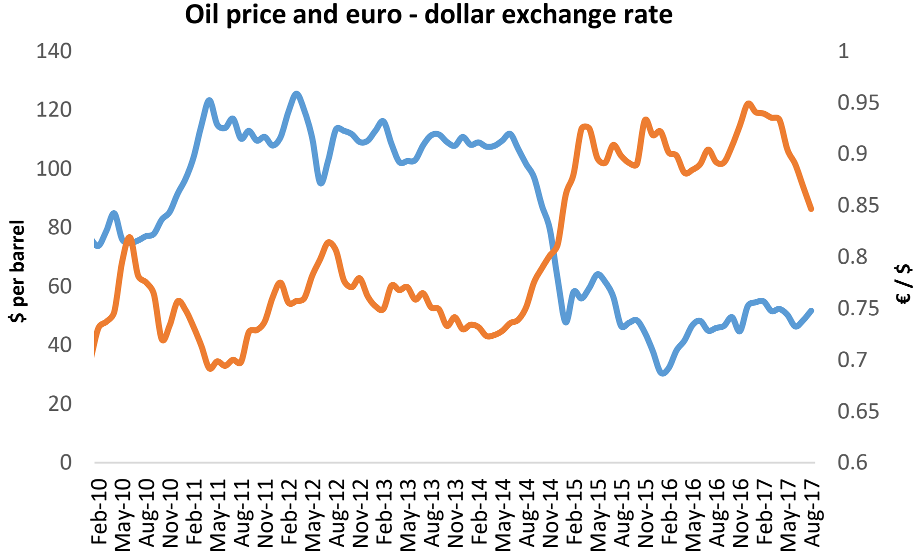


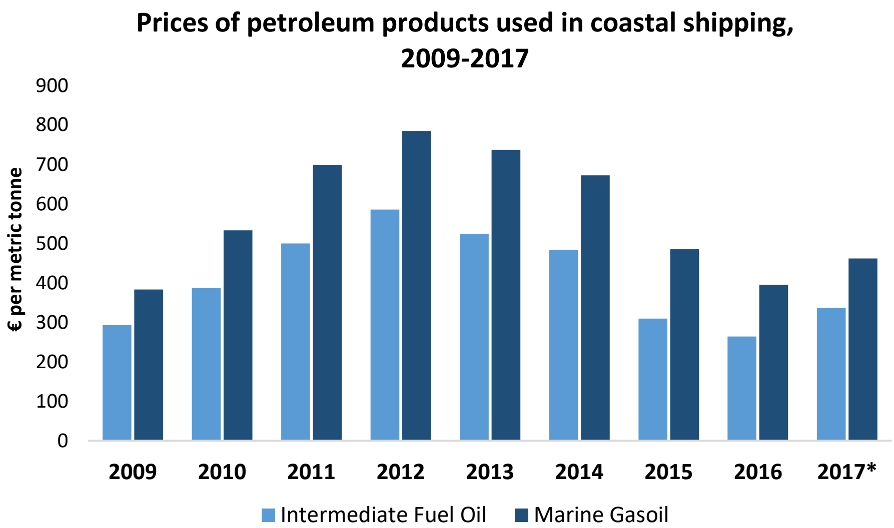


Source: Bank of Greece

- Inbound visitors stood at 28.1 million
  - +7.5% compared to 2015
- The increase of tourism arrivals is not always accompanied by higher travel receipts
  - In 2016 travel receipts reached €13.2 billion
  - Drop by 6.5% compared to 2015
- This development indicates that more people visit Greece, yet they spend less during their trip
  - Expenditure per trip stood at €470 in 2016
  - -13% compared to 2015
  - This level is lower by €170 compared to 2010

Positive impact from the decline of oil prices since 2014 – Concerns for 2017





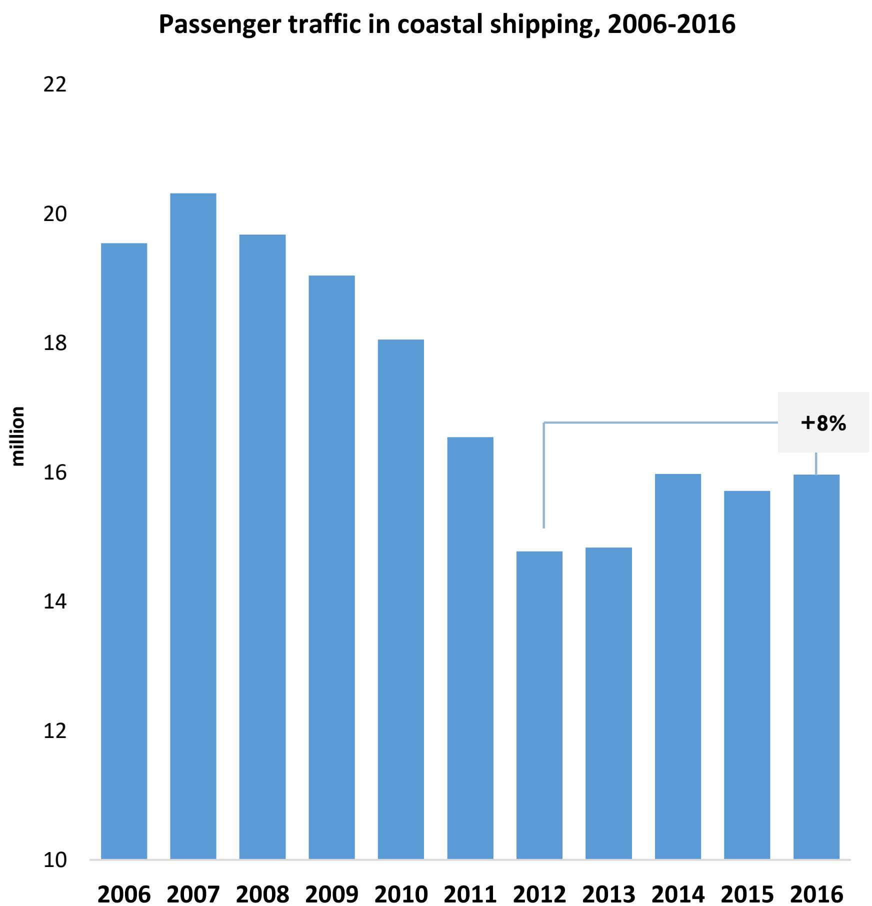
- The oil prices remained at relatively low level, following their significant decline in the second half of 2014
  - Return to a level above $50 per barrel since December 2016
- Respectively, the dollar – euro exchange rate remained high, following the sharp increase in the second semester of 2014
  - Declining since April 2017
- In the first nine months of 2017 the average price of shipping fuels in Greece has increased by 38% year on year.

(*) January-September

Source: Energy Information Administration, European Central Bank

1.2 Key figures, domestic coastal shipping routes

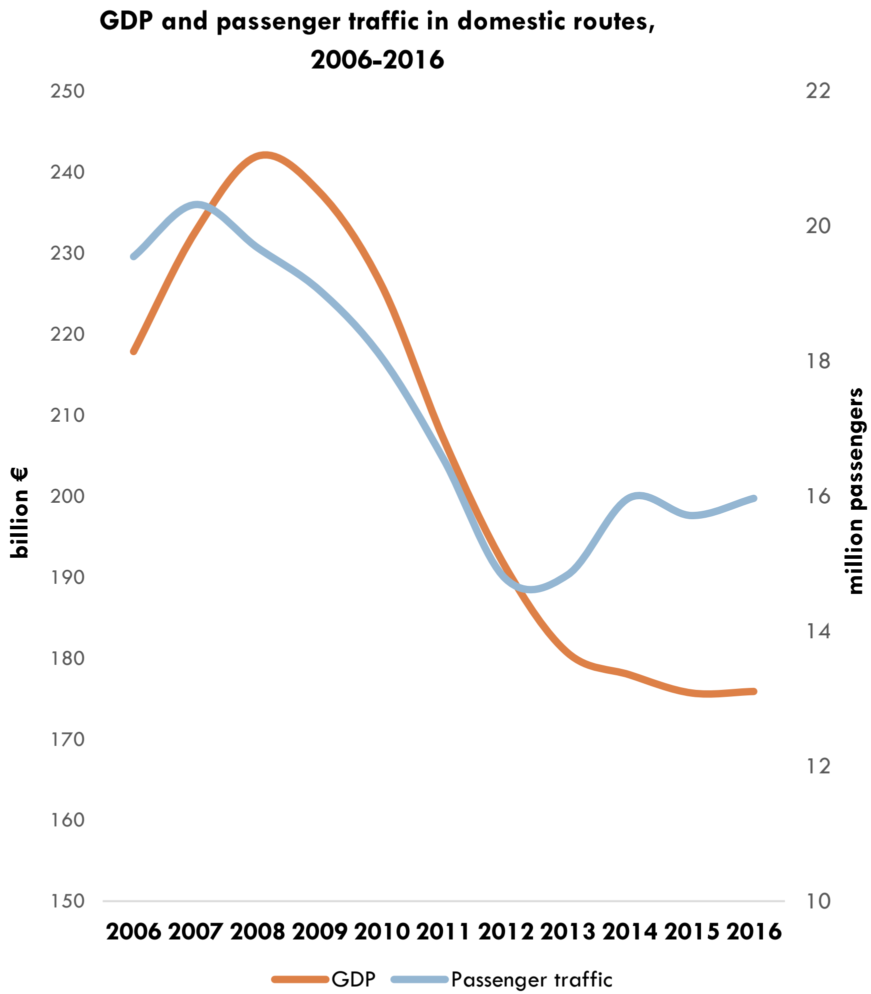
Between 2014 and 2016 passenger traffic in coastal shipping stood at approximately 16 million



Source: ELSTAT, IOBE

- Recovery of passenger traffic in coastal shipping in 2014 (+7.7% compared to 2013), following the decline between 2008 and 2012
- In 2015, passenger traffic slightly decreased, despite the substantial number of refugees transported from the islands of North-Eastern Aegean to Piraeus
- In 2016, it increased by 1.6% (or 255,000 passengers) compared to 2015
- Significantly below the pro-crisis level
  - Compared to 2009, passenger traffic was lower by 16.2% in 2016
  - The decline was even stronger in comparison to 2007 (21%), when the volume of passenger traffic peaked

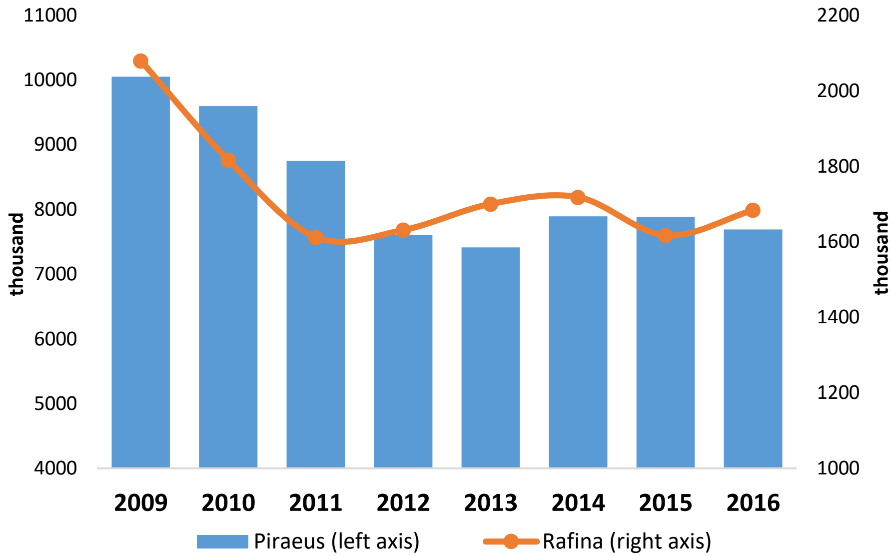
Coastal passenger transportation in Greece follows the course of GDP

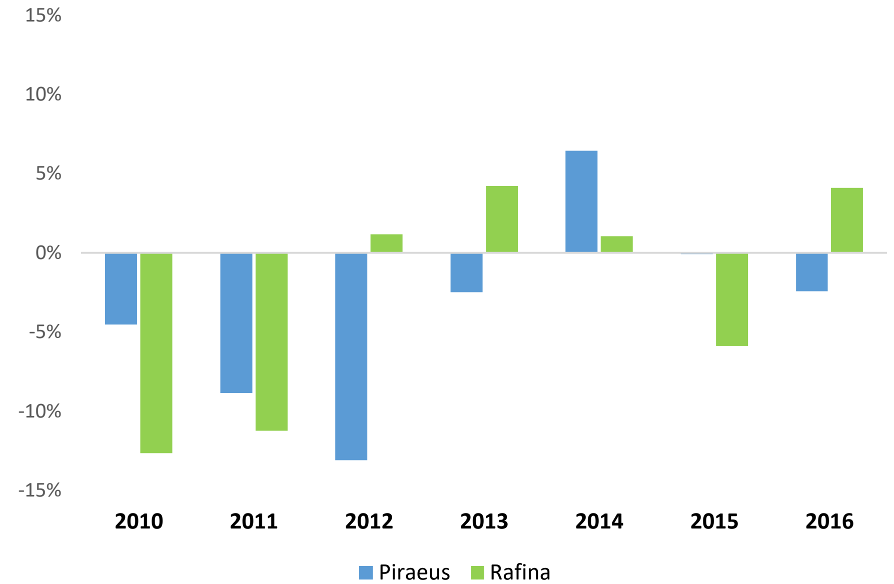


Note: GDP in market prices
Source: ELSTAT

- Between 2009 and 2012 the decline in coastal passenger transportation was similar to the contraction of GDP in Greece
- The increase in coastal passenger traffic since 2013 mainly came from growth of inbound tourism

The two main ports in the mainland follow different patterns with regard to coastal passenger traffic since 2012

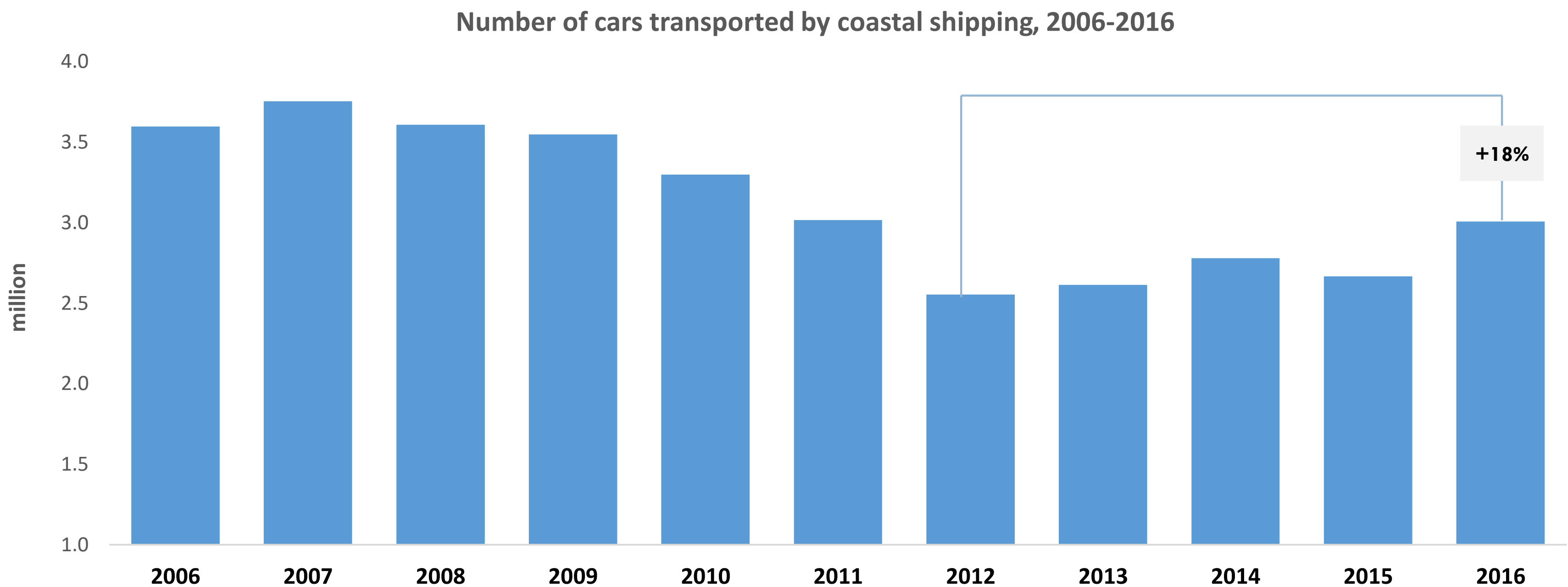




(*) Passengers embarked and disembarked
Source: ELSTAT **Data processing:** IOBE

- In 2014 coastal passenger traffic in the port of Piraeus stabilised after the decline observed in the previous years
  - In 2016, total passenger traffic (passengers embarked and disembarked) declined slightly by 2.4% compared to 2015, reaching 7.6 million
- In the port of Rafina coastal passenger traffic contracted by 6% in 2015 year-on-year, cancelling out the recovery observed during the previous three years
  - However, it bounced back by 4.1% in 2016

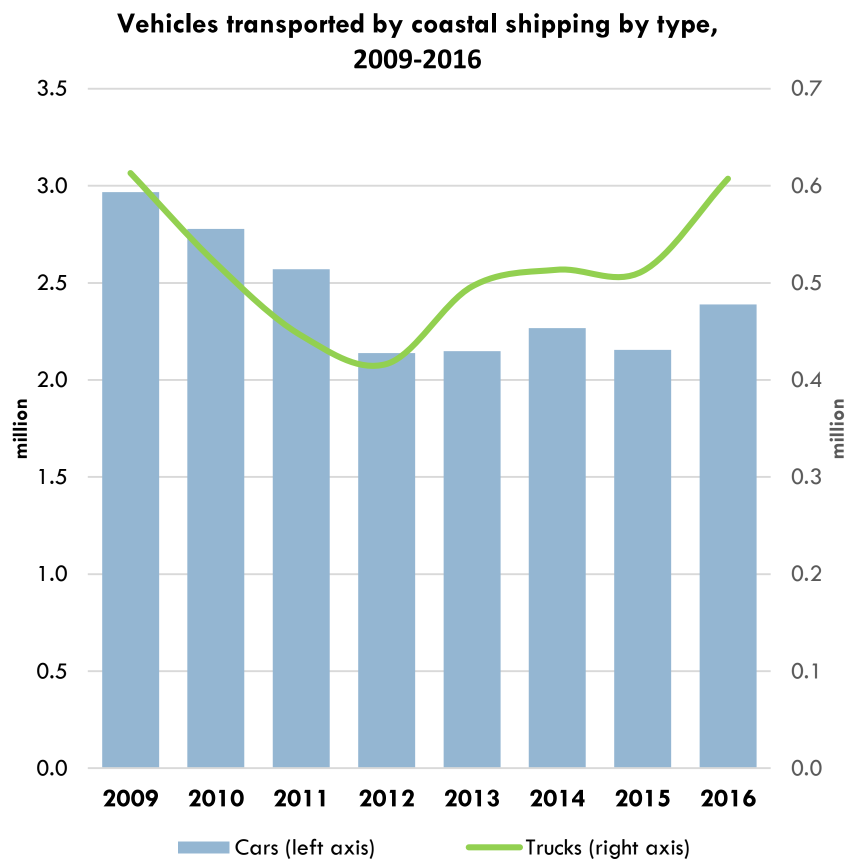
The growth in vehicles transported by coastal shipping in 2016 is stronger compared to passenger traffic

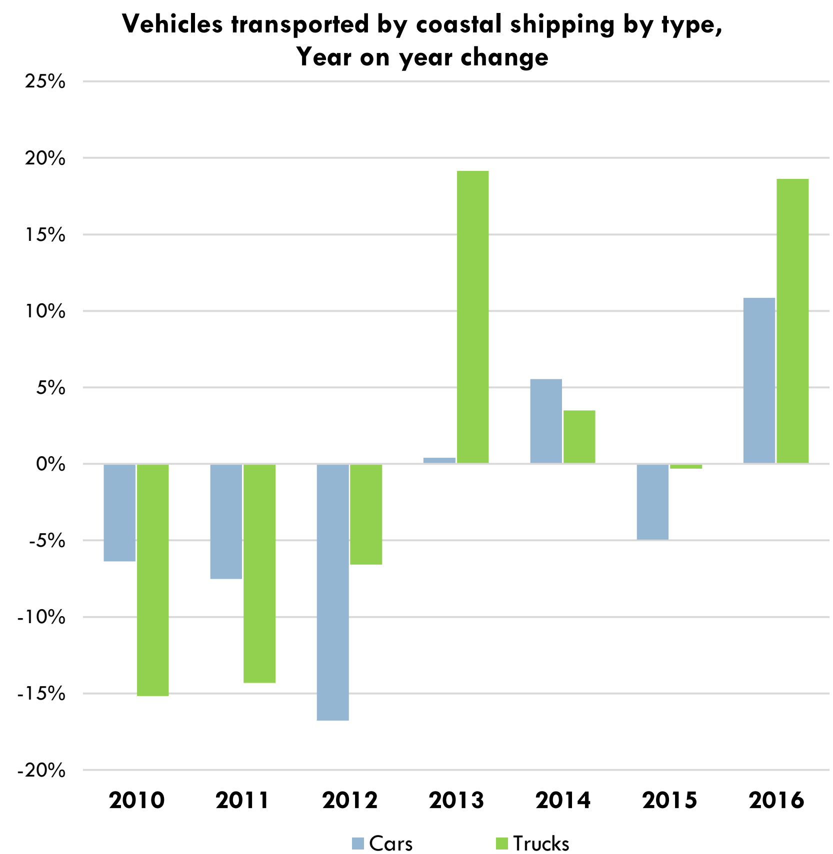


Note: All types of vehicles
Source: ELSTAT, IOBE

- In 2012, the number of shipped vehicles was lower by 32% (or 1.2 million vehicles) compared to 2007
- In 2013 and 2014, vehicle traffic returned to moderate growth
- Substantial growth by 13% (or 341,000 vehicles) year-on-year in 2016, against a contraction by 4% in 2015
  - The growth is mainly attributed to special offers and the overall commercial strategy adopted by the Greek coastal shipping companies

Stronger increase in trucks since 2013



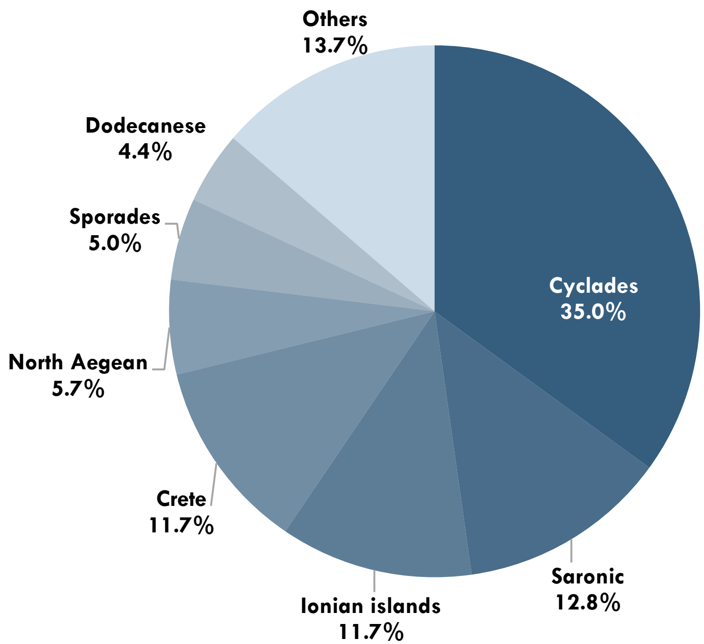


Source: ELSTAT, IOBE

- In 2016 the number of trucks transported by coastal shipping was higher than the 2009 level
  - In contrast, the transport of cars in 2016 was lower by 19.5% than in 2009

In geographical terms, the largest passenger traffic is observed in the lines of the Cyclades

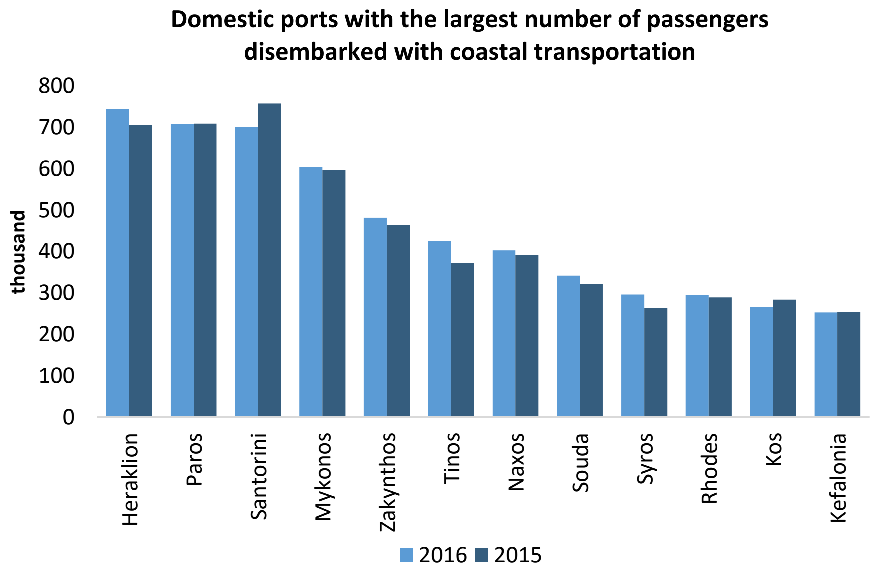
Geographic distribution of coastal passenger traffic, 2016

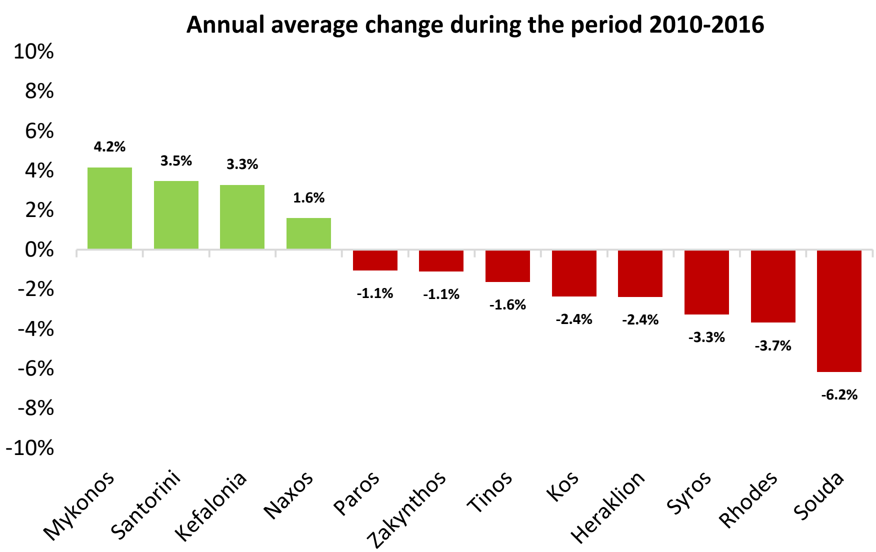


Source: ELSTAT **Data processing:** IOBE

- Between 2010 and 2016 almost a third of passenger transportation by coastal shipping occurred in the lines of the Cyclades
- The share of the routes to Crete dropped to 11.7% in 2016 from 14.7% in 2010
  - Passenger traffic declined to 1.86 million from 2.65 million (-29.7% or 788,100 passengers)
- Similar development was observed in the routes of the Saronic islands (12.8% in 2016 against 14.8% in 2010)
- In contrast, the share of coastal passenger traffic increased in the routes Kyllini-Zakynthos and Kyllini-Kefalonia (approximately 12% share in 2016 against 10% in 2010).

The most popular destinations are in the Cyclades and in Crete

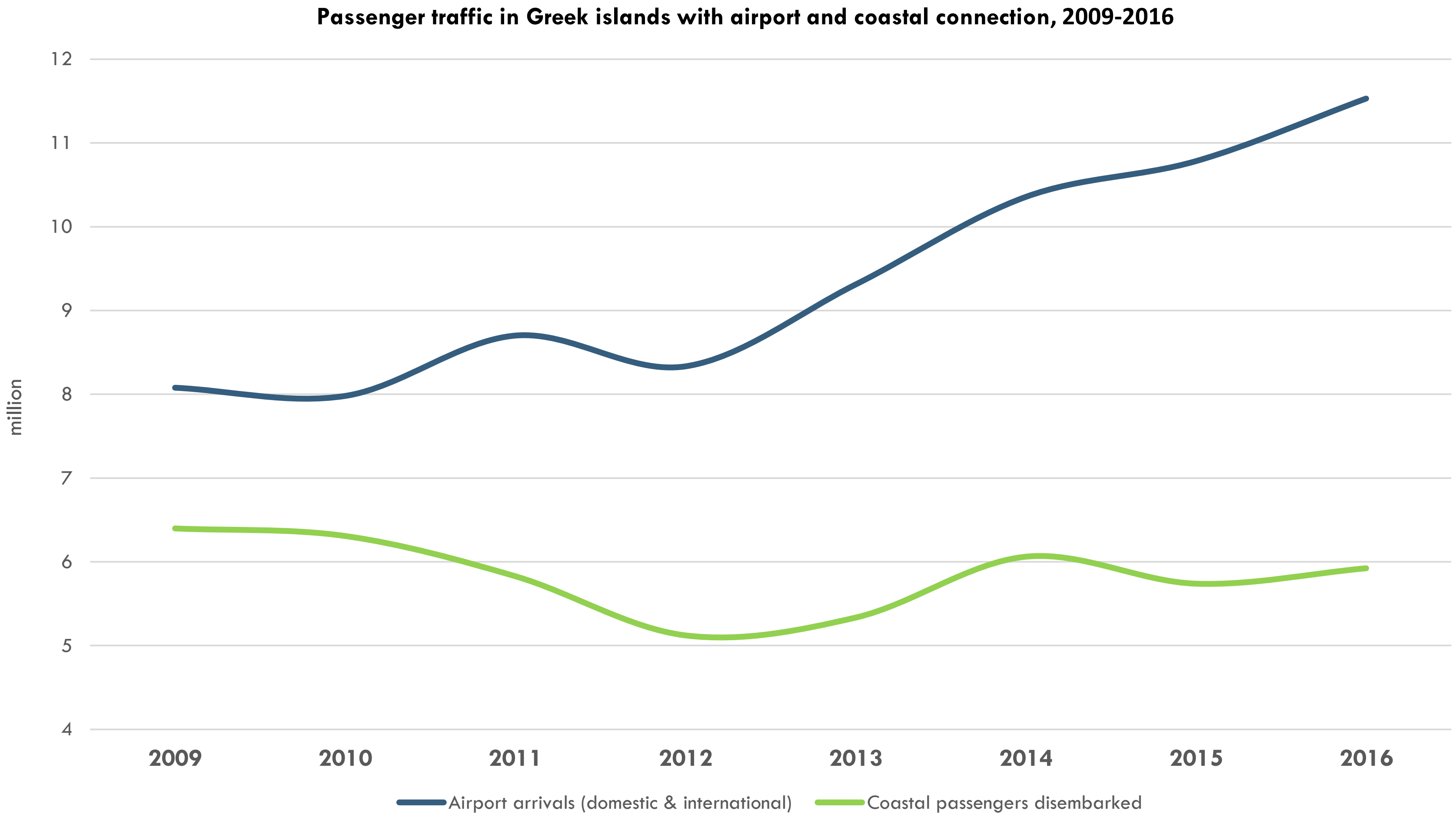




Source: ELSTAT **Data processing:** IOBE

- In the port of Heraklion, the number of disembarked passengers in 2016 increased by 5.3% compared to 2015 (+744,000 passengers)
- In Santorini, the destination with the largest growth between 2010 and 2015, the number of disembarked passengers declined to 701,300 in 2016 (lower by 7.4% relatively to 2015)
- In the port of Mykonos, passenger traffic increased by 4.2% per annum on average between 2010 and 2016, whereas the number of disembarked passengers in 2016 reached 604,000 from 473,000 in 2010
  - Santorini and Kefalonia followed (+3,5% and +3,3% on average each year)
- In contrast, a decline was observed in the ports of Souda at Chania (-6.2%), Rhodes (-3.7%) and Syros (-3.3%)

In the Greek islands with airport connection, the arrivals have increased, in contrast to coastal passenger traffic



Source: ELSTAT, Civil Aviation Authority **Data processing:** IOBE

Total passenger traffic in the airports of the Greek islands were higher by 42.7% in 2016 compared to 2009 (+54.1% international arrivals and +15.3% domestic arrivals), whereas the number of disembarked coastal shipping passengers at the same destinations contracted by 7.4%.

Substantial increase of domestic arrivals in the airports of popular coastal shipping destinations

Domestic passenger traffic in the Greek islands with airports and passenger traffic ports

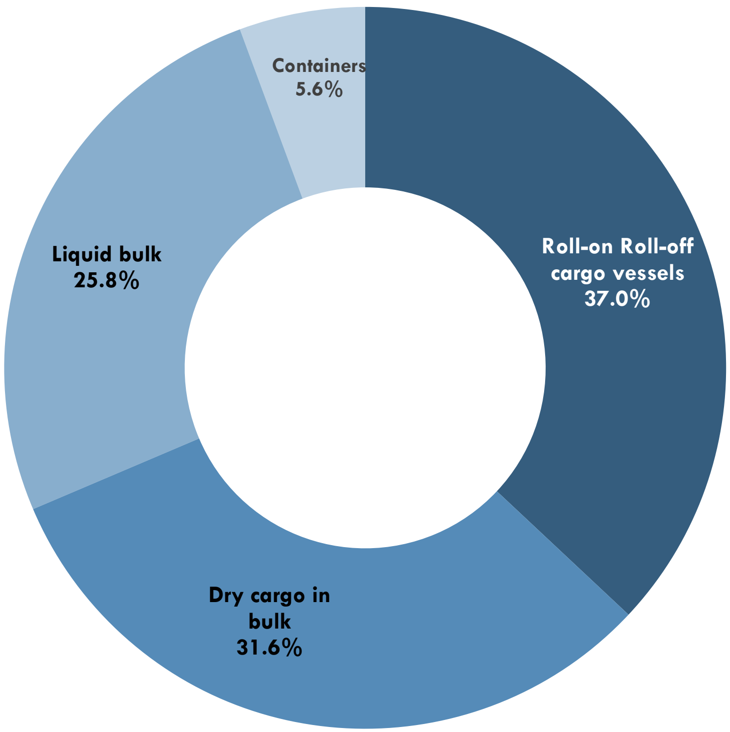
	Domestic arrivals (thousand)			Coastal passengers disembarked (thousand)		
	2009	**2016**	**Y-o-Y (%)**	**2009**	**2016**	**Y-o-Y (%)**
Heraklio	553.7	503.0	-9.1%	862.0	743.9	-13.7%
Santorini	161.2	433.6	168.9%	534.3	701.3	31.3%
Mykonos	116.1	190.0	63.6%	507.9	604.0	18.9%
Zakynthos	16.9	32.6	92.6%	564.5	482.1	-14.6%
Paros	18.0	37.9	110.9%	561.6	452.5	-19.4%
Naxos	10.2	16.5	62.4%	437.0	403.3	-7.7%
Chania	280.7	436.8	55.6%	452.5	342.0	-24.4%
Syros	2.8	7.7	170.7%	375.9	296.5	-21.1%
Rhodos	408.0	421.3	3.3%	332.2	294.6	-11.3%
Kefallonia	33.1	33.4	0.8%	238.1	253.3	6.4%
Skiathos	8.2	20.8	152.3%	244.0	188.7	-22.7%
Chios	119.1	91.5	-23.2%	239.3	186.1	-22.2%
Mytilini	217.9	169.5	-22.2%	239.7	178.7	-25.4%
Kos	126.2	101.0	-19.9%	155.0	153.0	-1.3%
Milos	17.7	23.7	34.1%	133.7	141.2	5.6%
Limnos	57.4	32.4	-43.5%	73.1	98.0	34.1%
Ikaria	14.1	19.3	37.0%	95.9	80.7	-15.9%
Skyros	4.6	6.5	39.9%	78.1	73.2	-6.3%
Leros	13.2	12.5	-4.8%	52.5	57.4	9.4%
Samos	104.4	74.3	-28.8%	75.5	56.1	-25.6%
Kalymnos	10.3	8.7	-15.1%	43.2	51.0	17.8%
Astypalaia	7.2	5.8	-20.5%	38.3	25.6	-33.3%
Kythira	12.8	14.2	11.4%	22.9	20.2	-11.7%
Karpathos	32.3	28.7	-11.1%	21.0	17.4	-17.0%
Kastelorizo	4.0	3.3	-15.9%	7.4	11.6	57.9%
Kassos	3.5	1.8	-47.7%	7.6	5.8	-22.6%
Siteia	18.9	9.6	-49.4%	5.2	4.4	-14.8%
Total	**2372.5**	**2736.4**	**15.3%**	**6398,4**	**5922.6**	**-7.4%**

(*) Between 2016 and 2009
Source: ELSTAT **Data processing:** IOBE

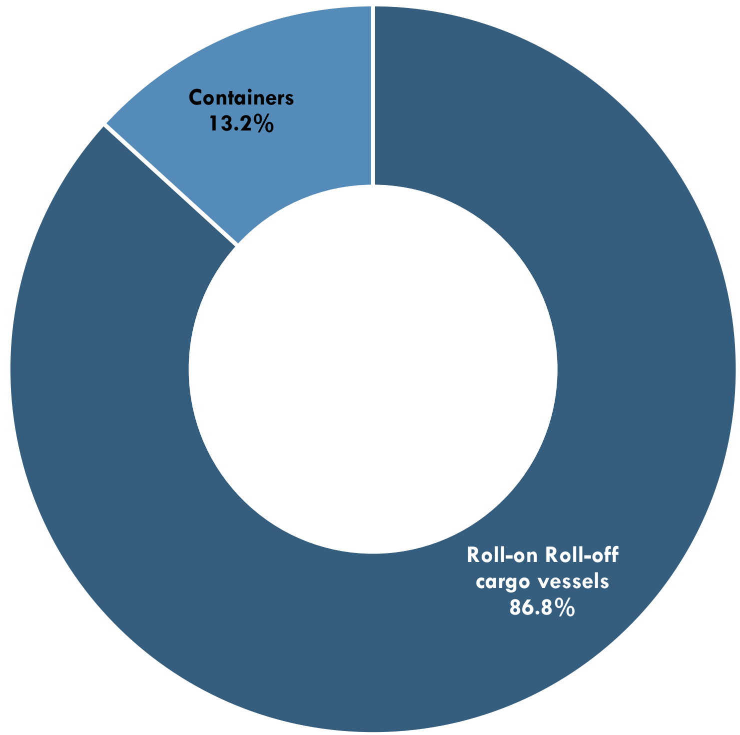
- Domestic arrivals at the airport of Santorini more than doubled between 2009 and 2016
  - During the same period the number of disembarked coastal shipping passengers at the island increased by 31%
- In the airport of Mykonos, arrivals increased by 64%
  - Lower growth in the number of disembarked coastal shipping passengers (+19%)
- In Chania airport, the domestic arrivals were higher by 56% in 2016, compared to 2009
  - However, the passengers disembarked in the port of Souda contracted by 24%
- Overall, coastal passenger traffic dropped in 19 out of the 27 island regions with airport and shipping connection between 2009 and 2016

Freight transport to or from the Greek islands is mainly dependent on coastal shipping lines

Freight carried by sea to and from Greek islands per type of cargo, 2016



Freight carried by sea in Greek islands per type of cargo, excluding bulk cargo, 2016



Source: ELSTAT **Data processing:** IOBE

Excluding fuel and products used as inputs in the production process (liquid and dry bulk), the share of products transported by trucks in the island regions (mainly by passenger vessels) stood at 87% in 2016

Fuel and labour costs represent more than half of the total operating expenses of the passenger shipping companies

Key operating expenses of passenger shipping

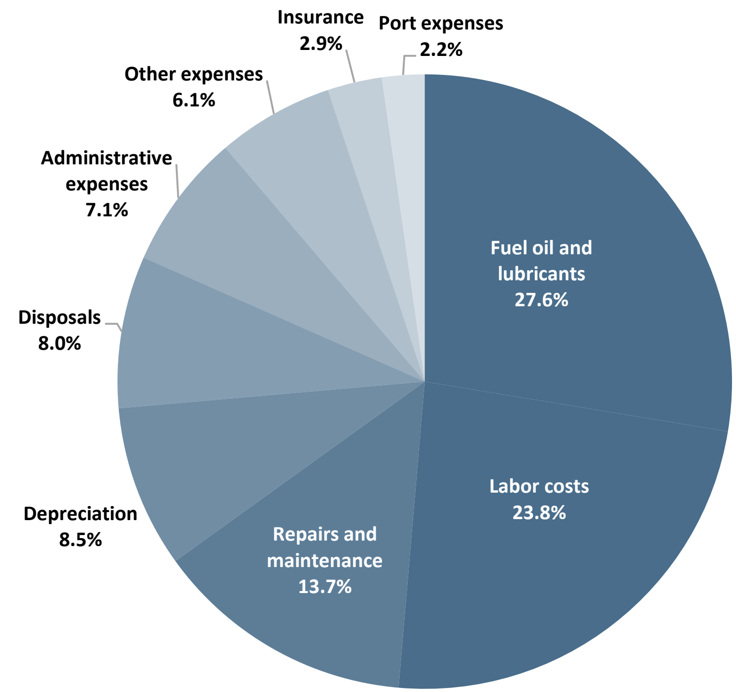
Expenses associated with the operation of the fleet

- Cost of fuel
- Salaries and social contributions
- Repairs etc.

Expenses related to the regulatory framework of the coastal shipping market

- VAT on coastal shipping tickets
- Port fees

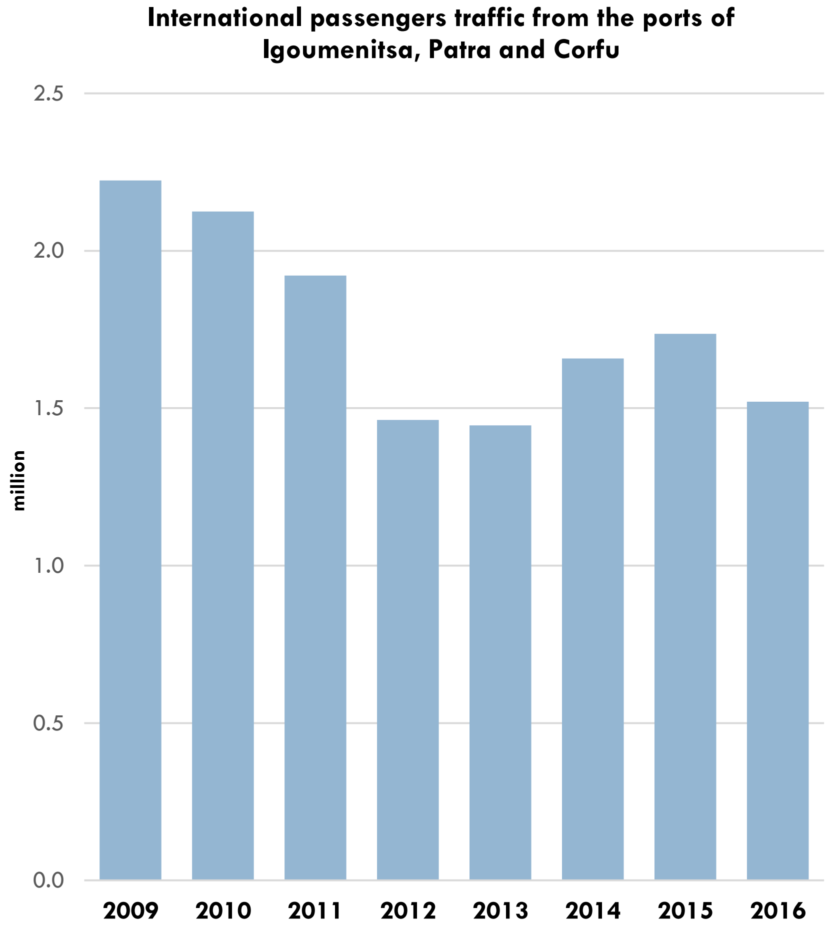
Distribution of operating expenses of domestic shipping passenger companies, 2016



Source: Annual Reports of Blue Star Feries, ANEK and Hellenic Seaways

1.3 Main figures in the Adriatic sea routes

The demand for coastal passenger transportation in the Adriatic sea routes has contracted in recent years



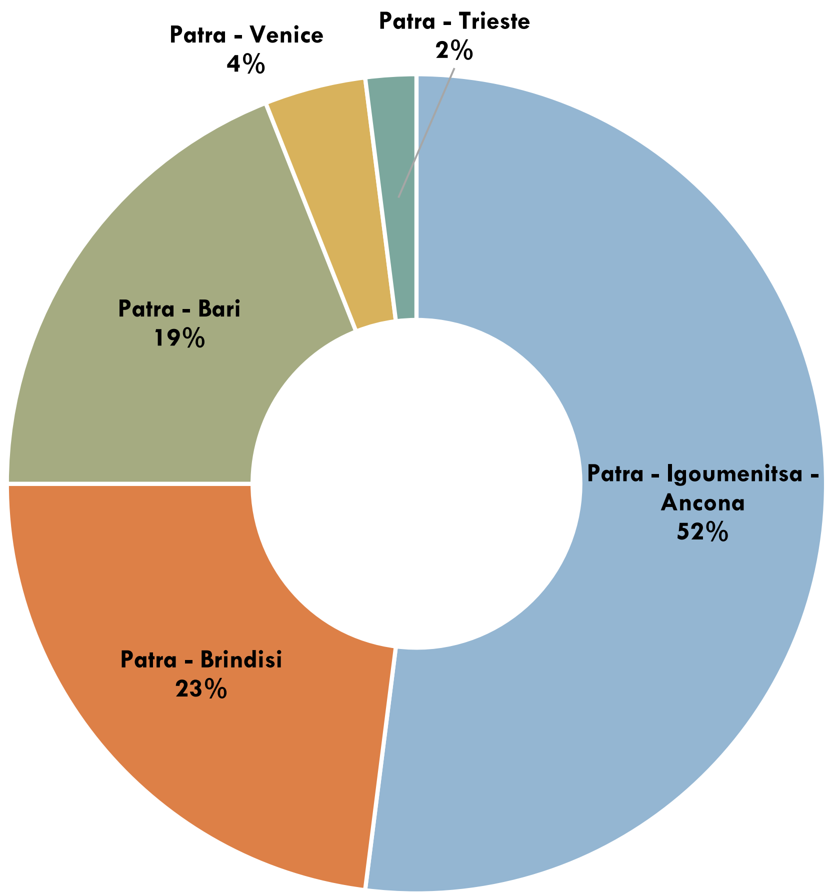
(*) Greece-Italy sea routes and Greece-Albania sea route

Source: ELSTAT

- In 2016, the number of passengers in the routes of the Adriatic sea transported from and to the Greek ports totalled 1.52 million
  - Decline by 12.3% (or 219,900 passengers) compared to 2015
  - Slightly higher than in 2012
- In comparison to 2009, passenger traffic in the Adriatic contracted by 33% (or 742,300 passengers)

Patra-Igoumenitsa-Ancona is the dominant line in the Greece – Italy sea routes

Passengers traffic by line in the Greece - Italy sea routes, 2016



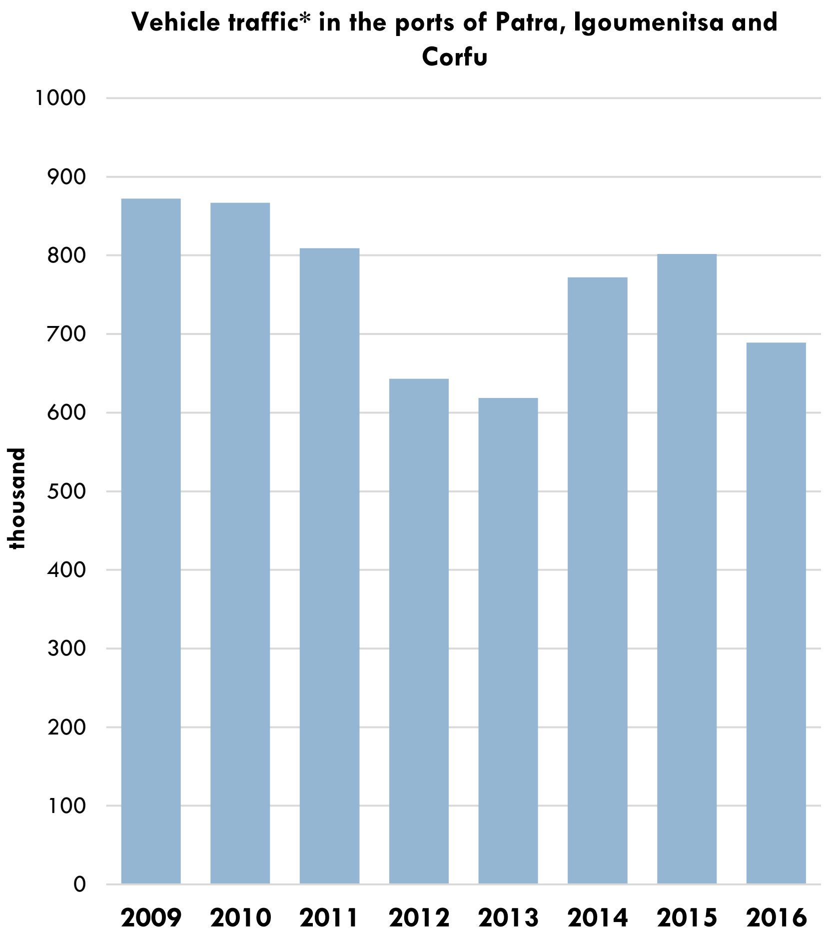
Source: ELSTAT **Data processing:** IOBE

Igoumenitsa is the main Greek port in terms of international passenger traffic in the Adriatic sea routes

(*) Inbound and outbound
Source: ELSTAT

- In 2016, international passenger traffic from the port of Igoumenitsa reached 836,600 passengers
  - Lower by 18% compared to 2009
- Passenger traffic in the port of Patras dropped at 497,300
  - From 935,300 in 2009 (-46.8%)
- In the port of Corfu, the passenger traffic reached 186,600 in 2016
  - Almost 2 out of 3 passengers travelled in the route Greece- Albania

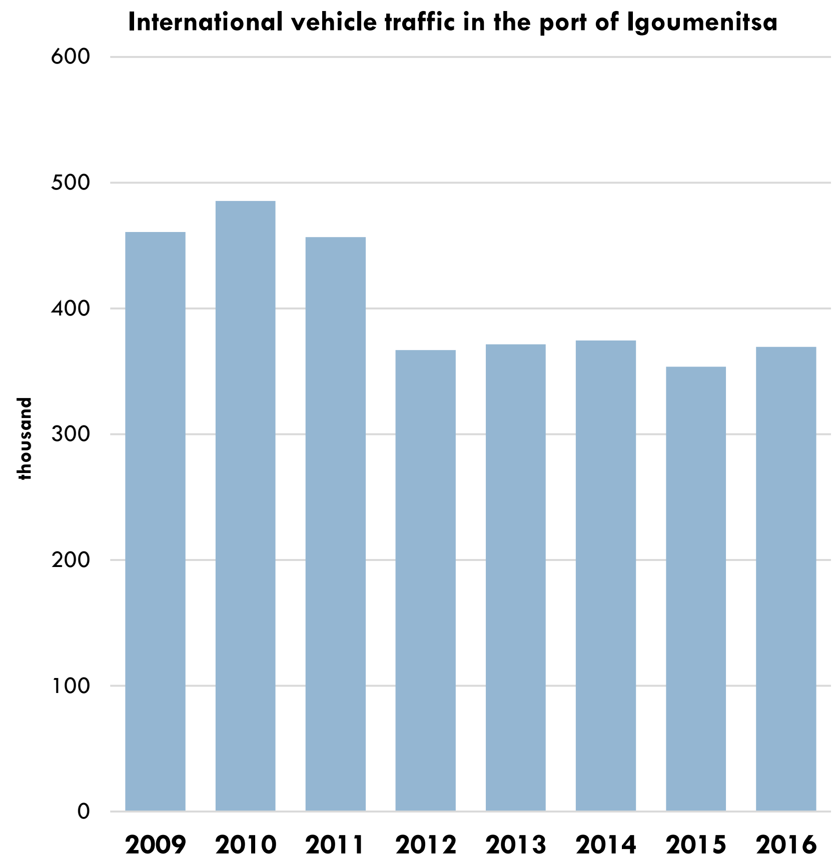
Vehicle traffic declined in 2016, following the growth in 2014 and 2015

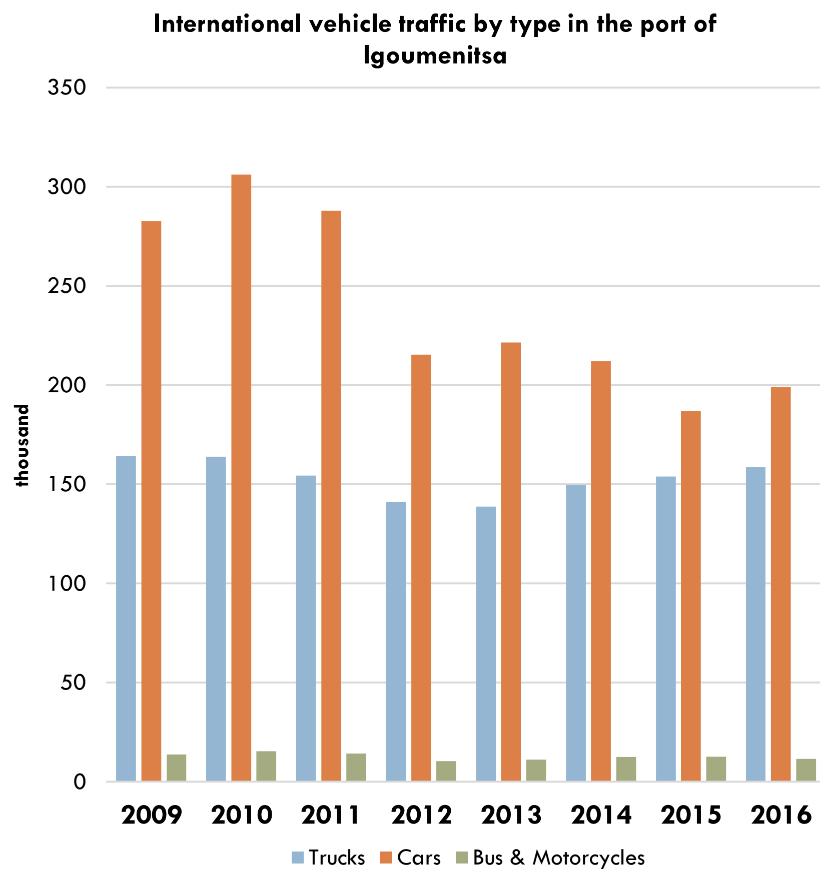


(*) All types of vehicles embarked and disembarked
Source: ELSTAT

- In 2016 vehicle traffic (all types of vehicles) stood at 688,000, lower by 14% (or 112,400) compared to 2015
- Since 2009, the transportation of vehicles in the Adriatic sea routes from and to Greek ports has declined by 20% (or 173,200)

More than half of the vehicle transportation takes place from the port of Igoumenitsa

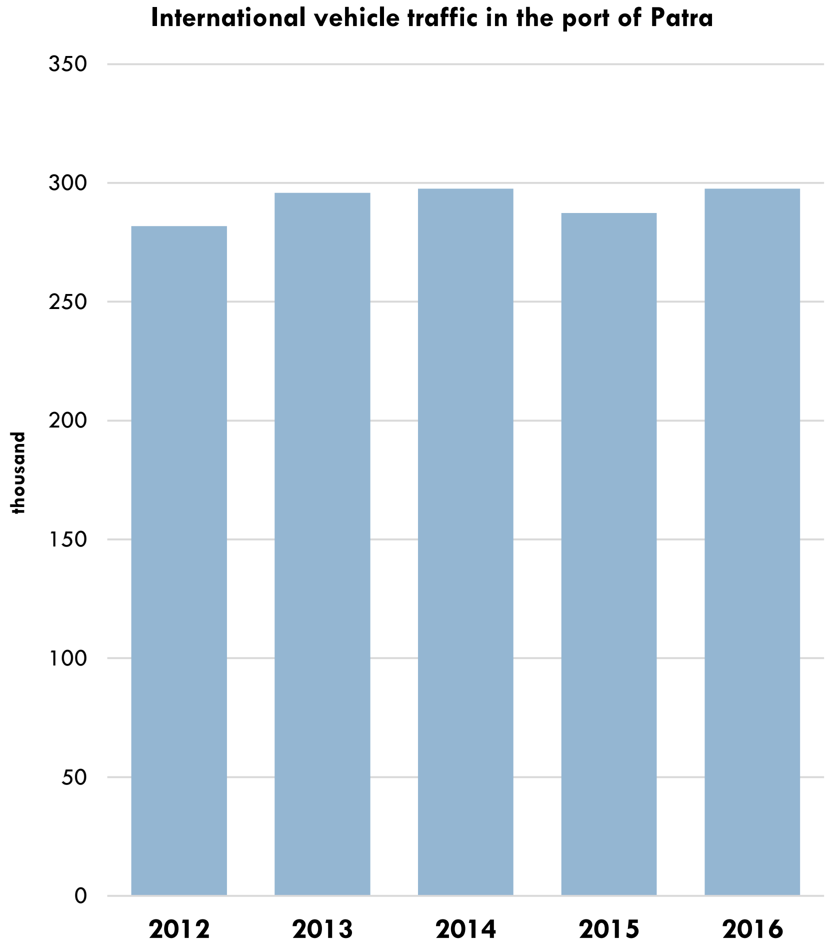


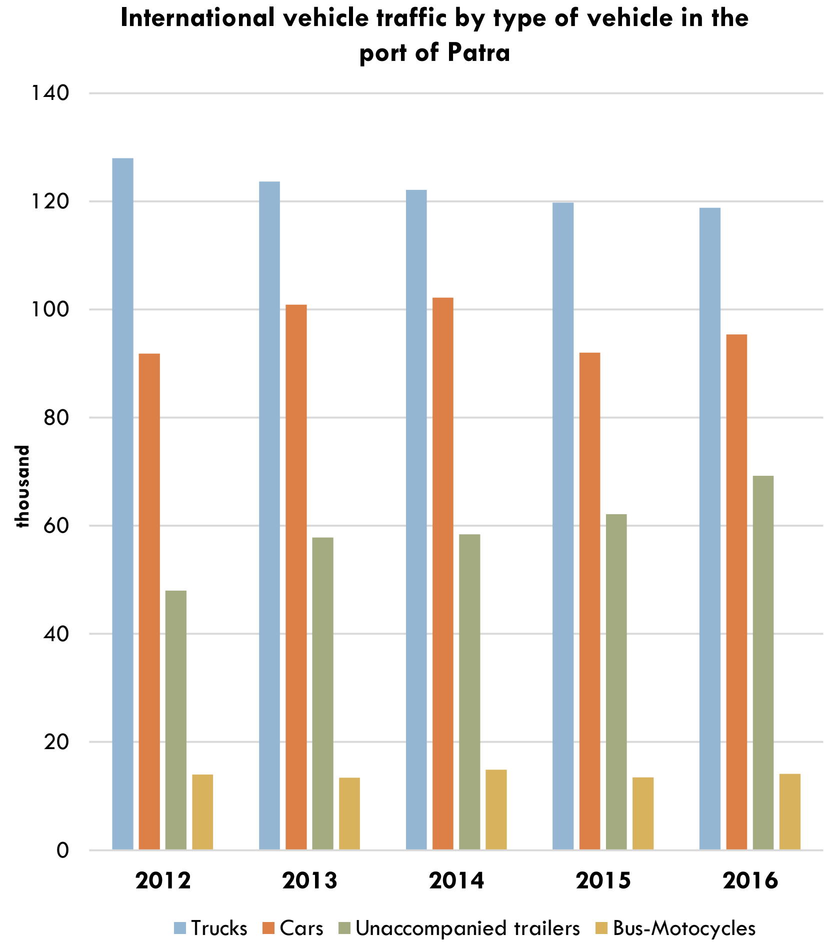


Source Igoumenitsa Port Authority

- Increase by 4% in 2016 compared to 2015, yet a contraction by 20% relatively to 2009
- Truck traffic increased between 2013 and 2016 (5% on average each year), with less fluctuation than the transport of cars

In the port of Patra, international vehicle traffic in 2016 was similar to 2014

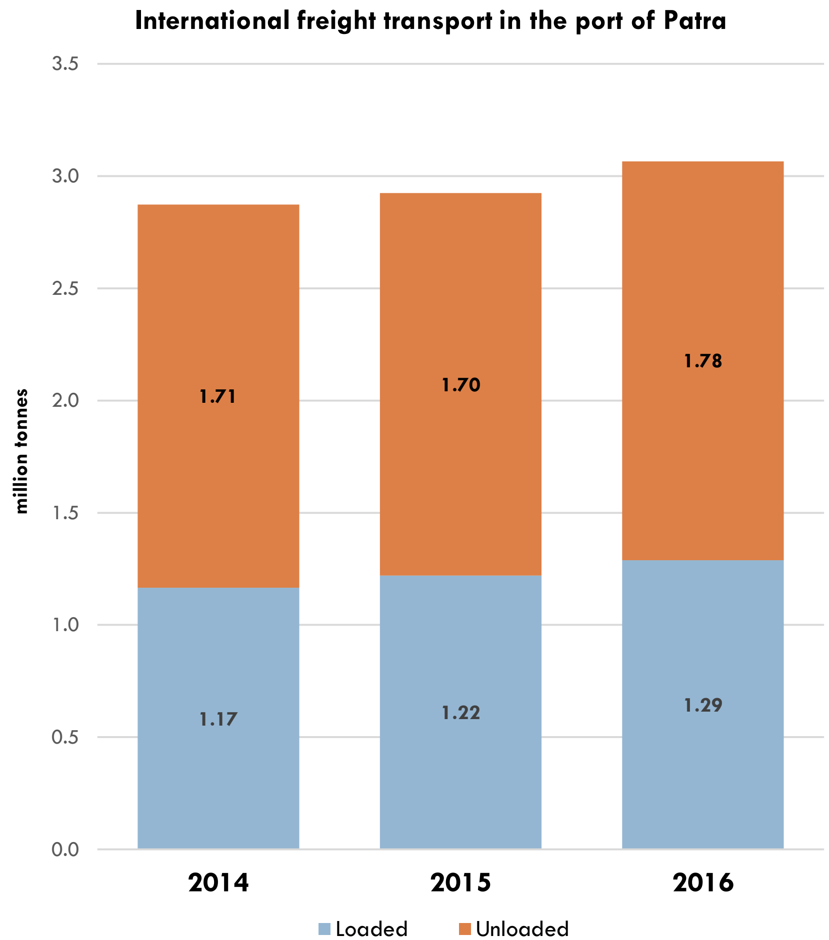


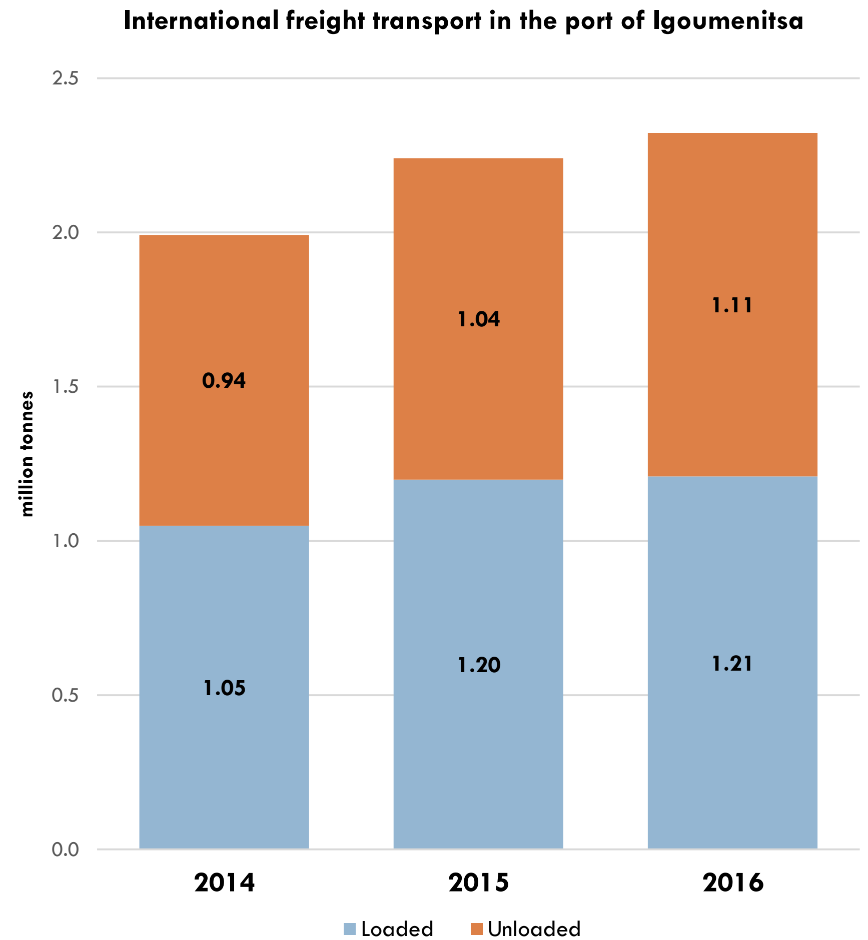


Note: No data available before 2012 from the website of Patra Port Authority

Source: Patra Port Authority

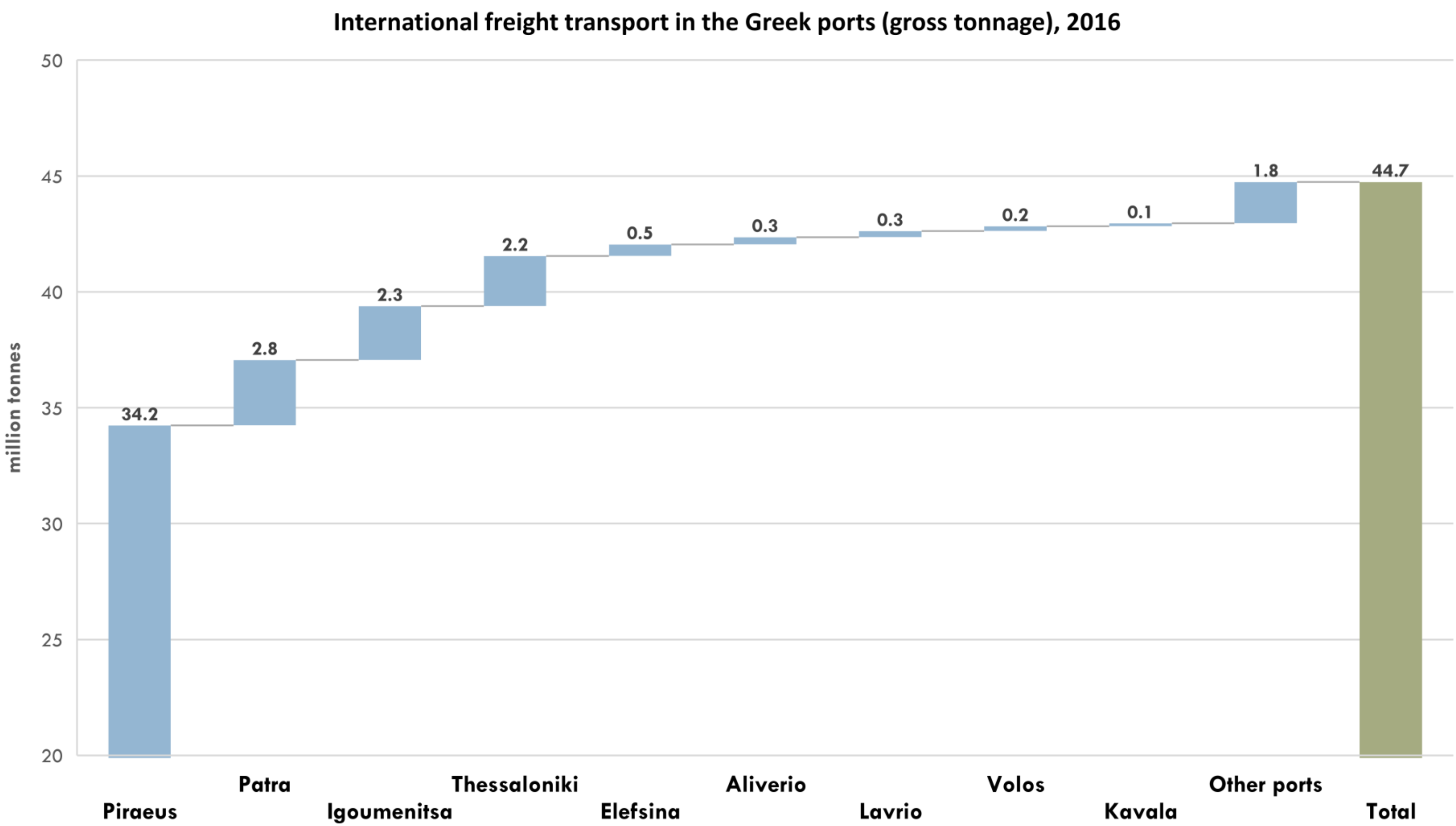
International freight transport increased between 2014 and 2016 in the ports of Patra and Igoumenitsa





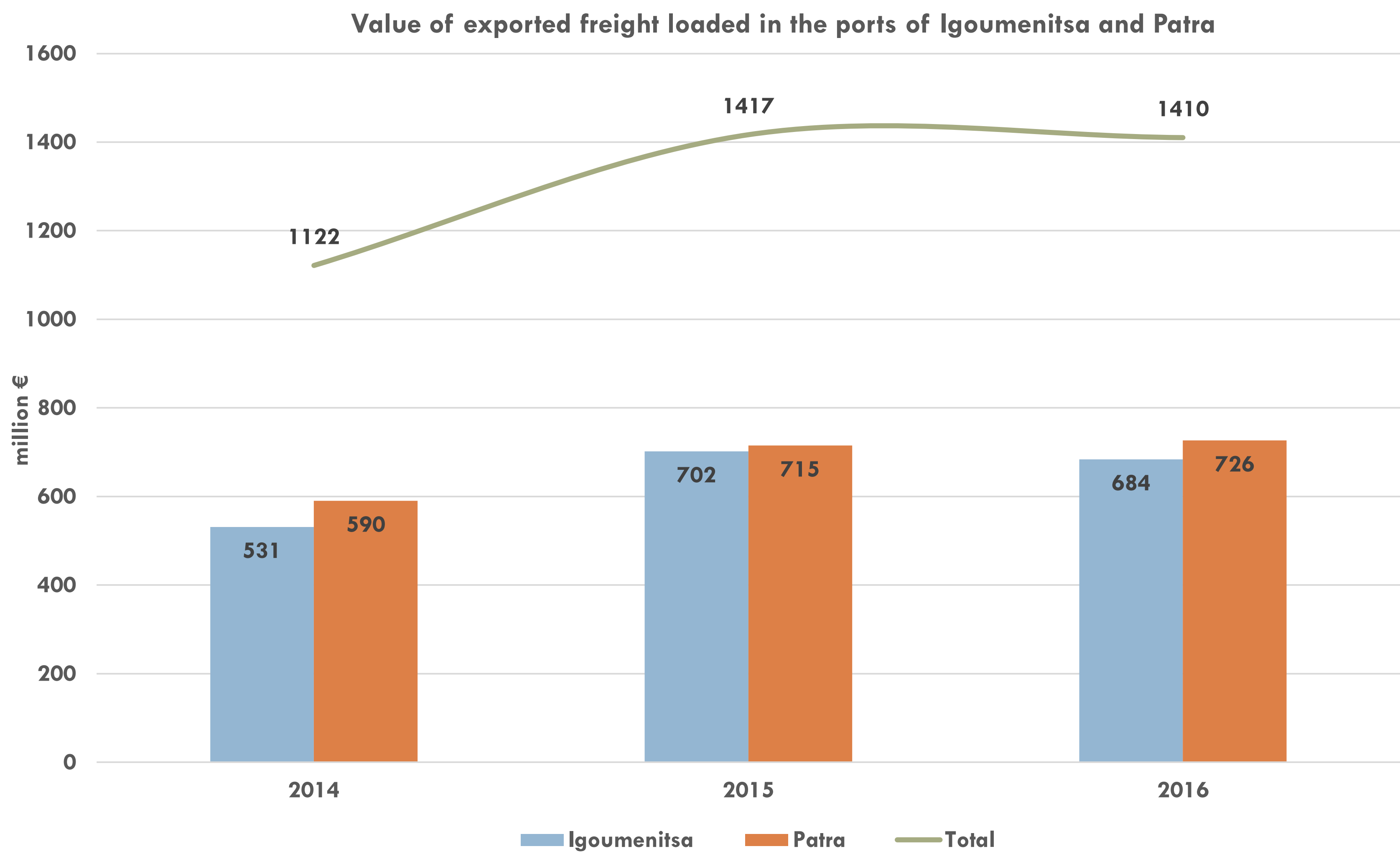
Source: ELSTAT **Data processing:** IOBE

The ports of Patra and Igoumenitsa are ranked 2nd and 3rd according to the transported international freight volumes



Note: Excluding fuels and dry bulk
Source: ELSTAT **Data processing:** IOBE

The value of freight exported from the ports of Patra and Igoumenitsa is estimated to exceed €1.4 billion

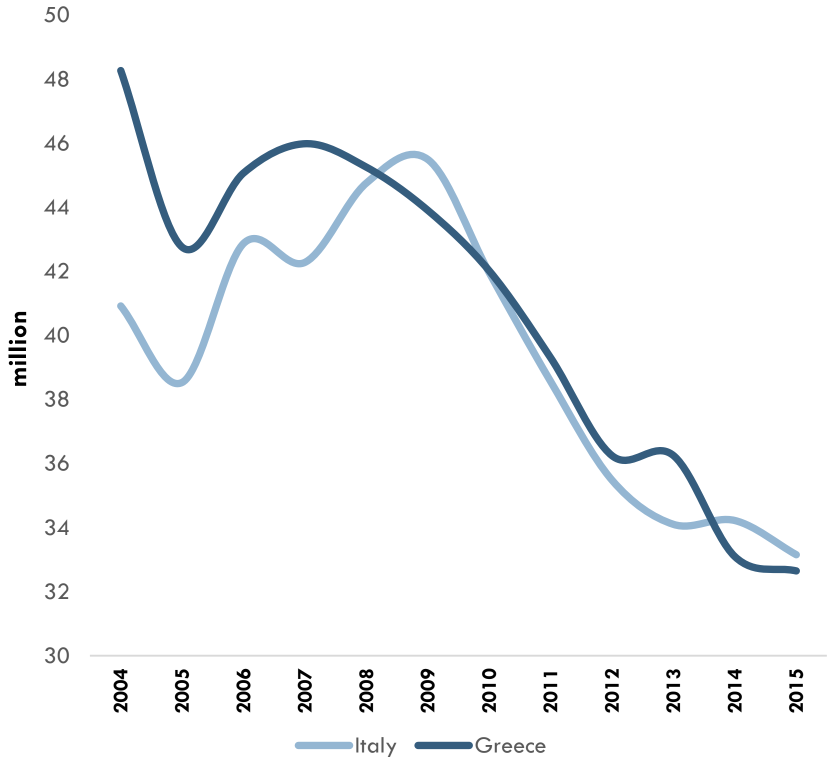


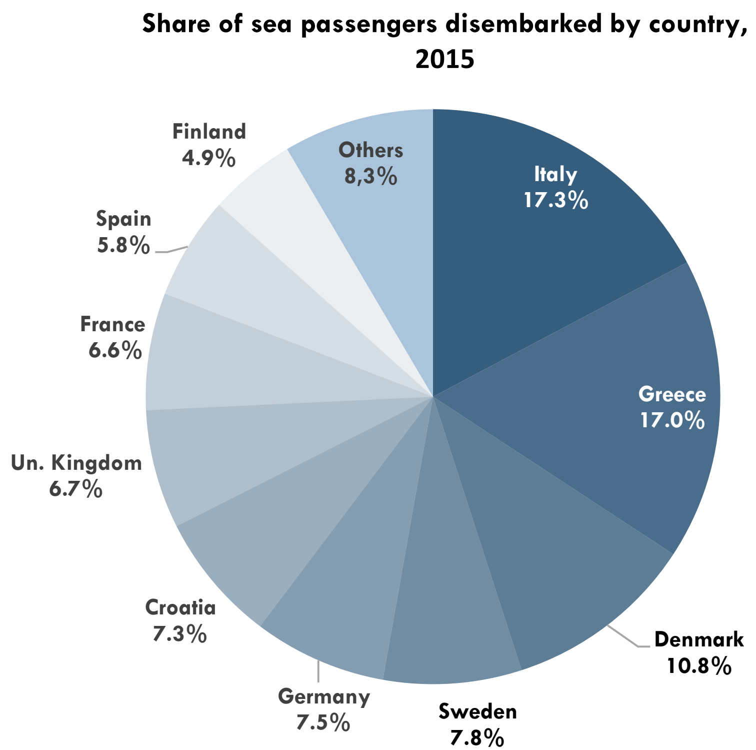
Note: The numbers in the chart are estimations based on the total value of exported goods and the amount of freight loaded (in the ports of Igoumenitsa and Patras respectively) excluding fuels

Source: ELSTAT, Panhellenic Exports Association **Data processing:** IOBE

1.4 International comparisons

Greece and Italy are the leading seaborne passenger transport countries in the EU

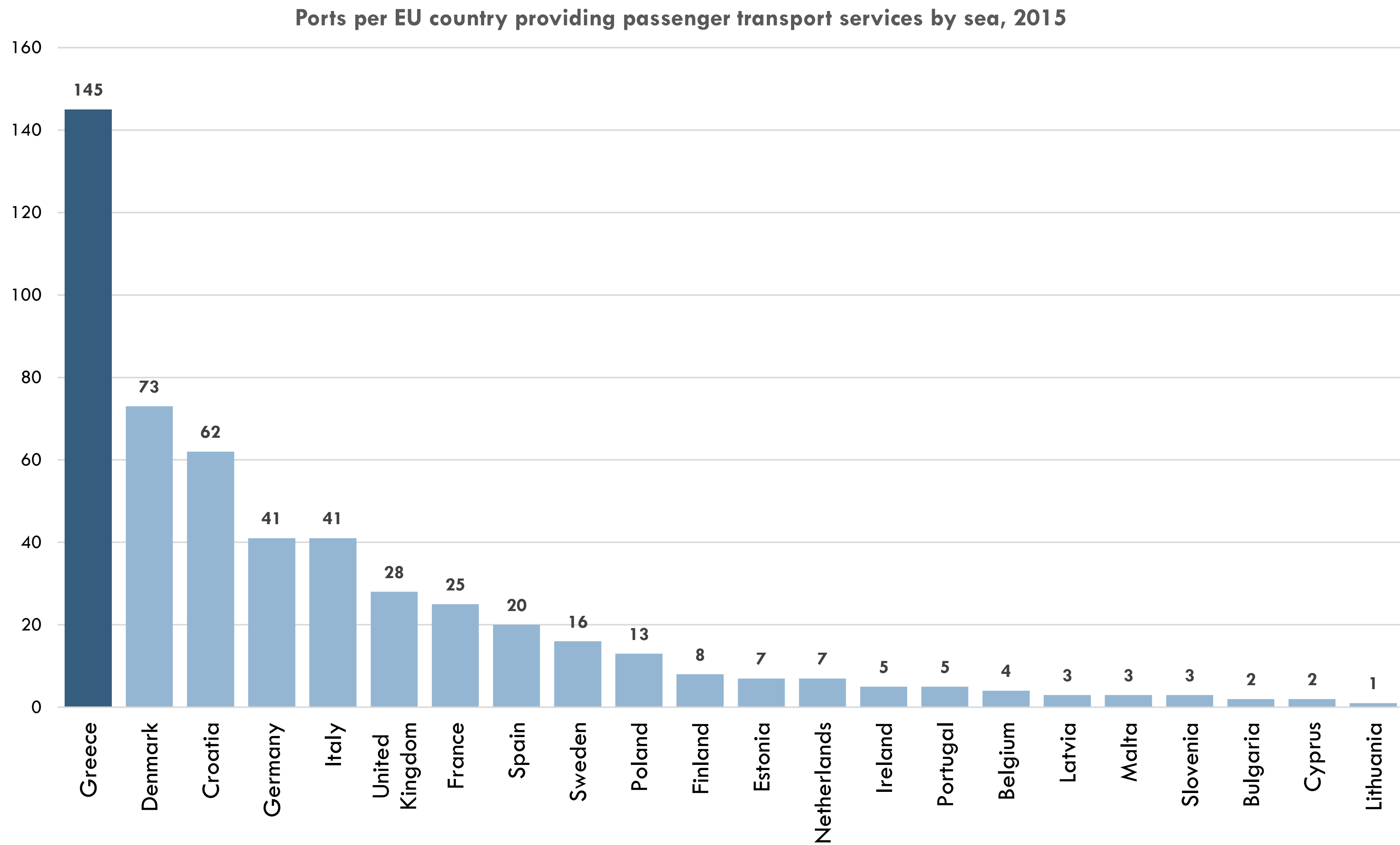




Note: 1. Refers to passengers embarked and disembarked, inward direction from coastal and ferry lines in all ports of each country. Cruise passengers are excluded
2. The methodology for data collection in the ferry lines Rio-Antirio and Perama-Paloukia Salaminas has changed since 2014. As a result a substantial decline in the passenger traffic is recorded for the specific 4 ports and the country overall, compared to the estimations of previous years. Due to this reason, the data series for Greece and EU-28 are not comparable before and after 2014.
Source: Eurostat

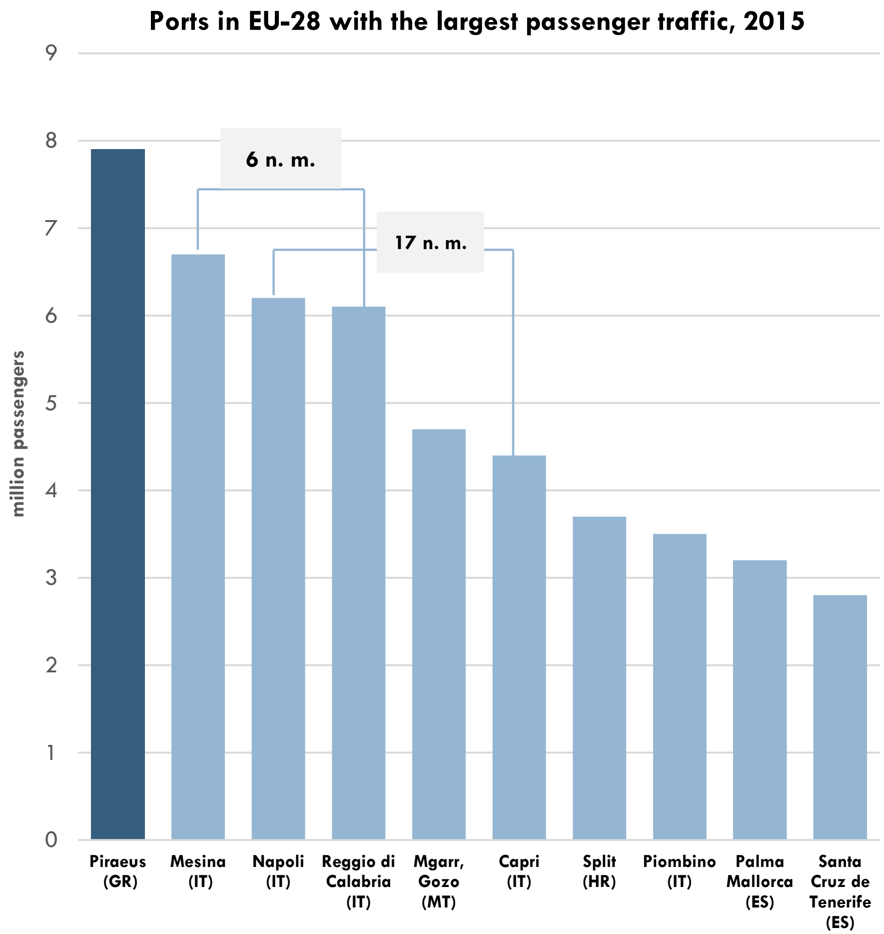
The Greek fleet operates in a substantially larger number of coastal routes compared to Italy

Greece has the largest number of ports providing passenger transport services by sea in the EU



Source: Eurostat **Data processing:** IOBE

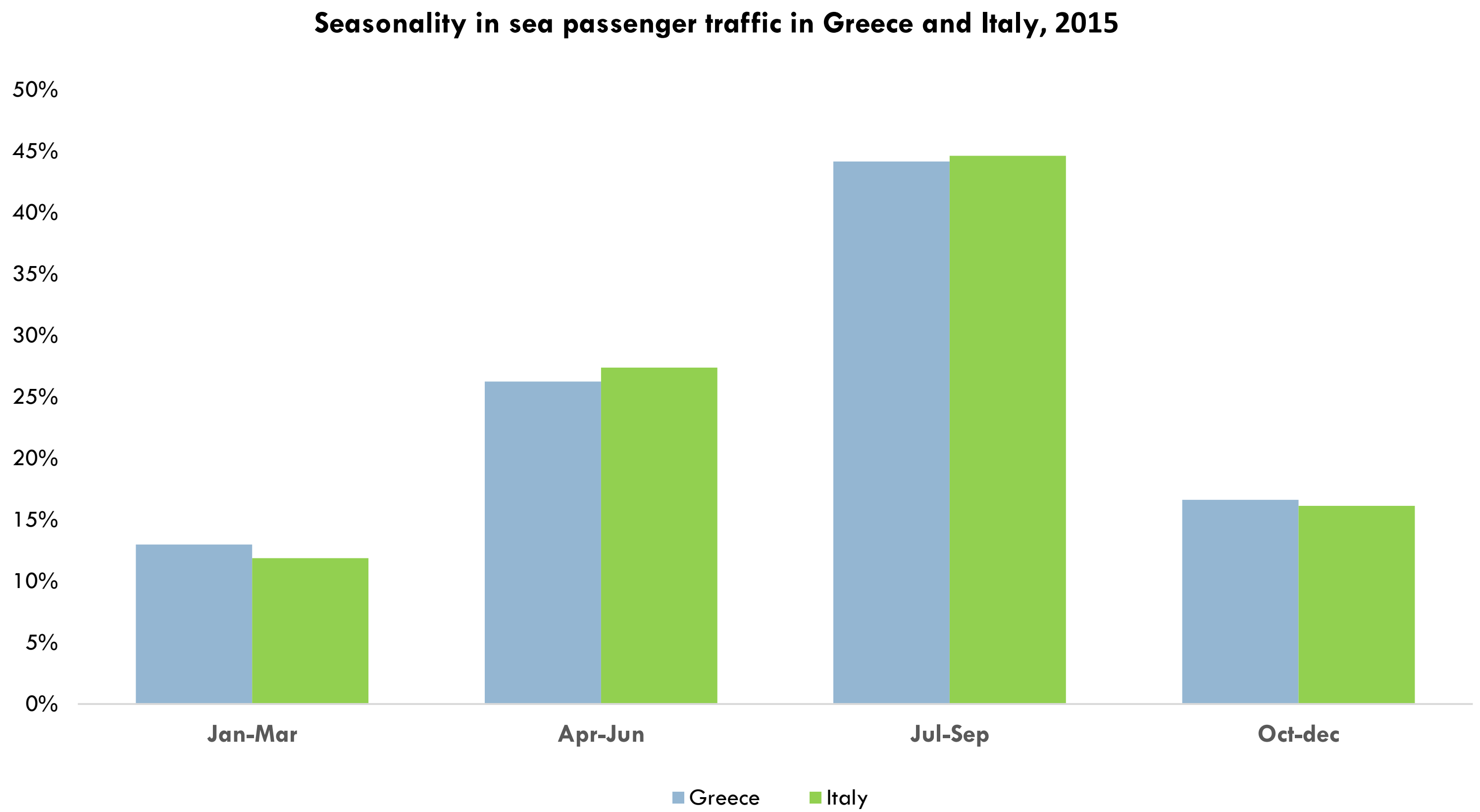
Piraeus is the largest port in the EU in terms of passenger traffic transport



Source: Eurostat

- The passenger shipping in Italy involves mainly short-distance passenger transportation
  - The largest port in Italy in terms of passenger traffic (the port of Messina) is only 6 nautical miles away from the third largest port (Reggio di Calabria)
- In Greece, the port of Piraeus is connected with more than 100 destinations, whereas in Italy only 9 routes are in operation from the port of Messina

Passenger transport by sea shows similar seasonality pattern in Italy and Greece



Source: Eurostat **Data processing:** IOBE

- The seasonal pattern in the transportation of passengers (and vehicles as well) indicates the strong relationship between tourism and the operation of the shipping passenger sector
  - Similarly, in other EU countries passenger transportation by sea increases during the summer period

The comparison of Greek and European passenger shipping companies highlights differences in the structure of operating costs

Blue Star Ferries (Greece)

Hellenic Seaways (Greece)

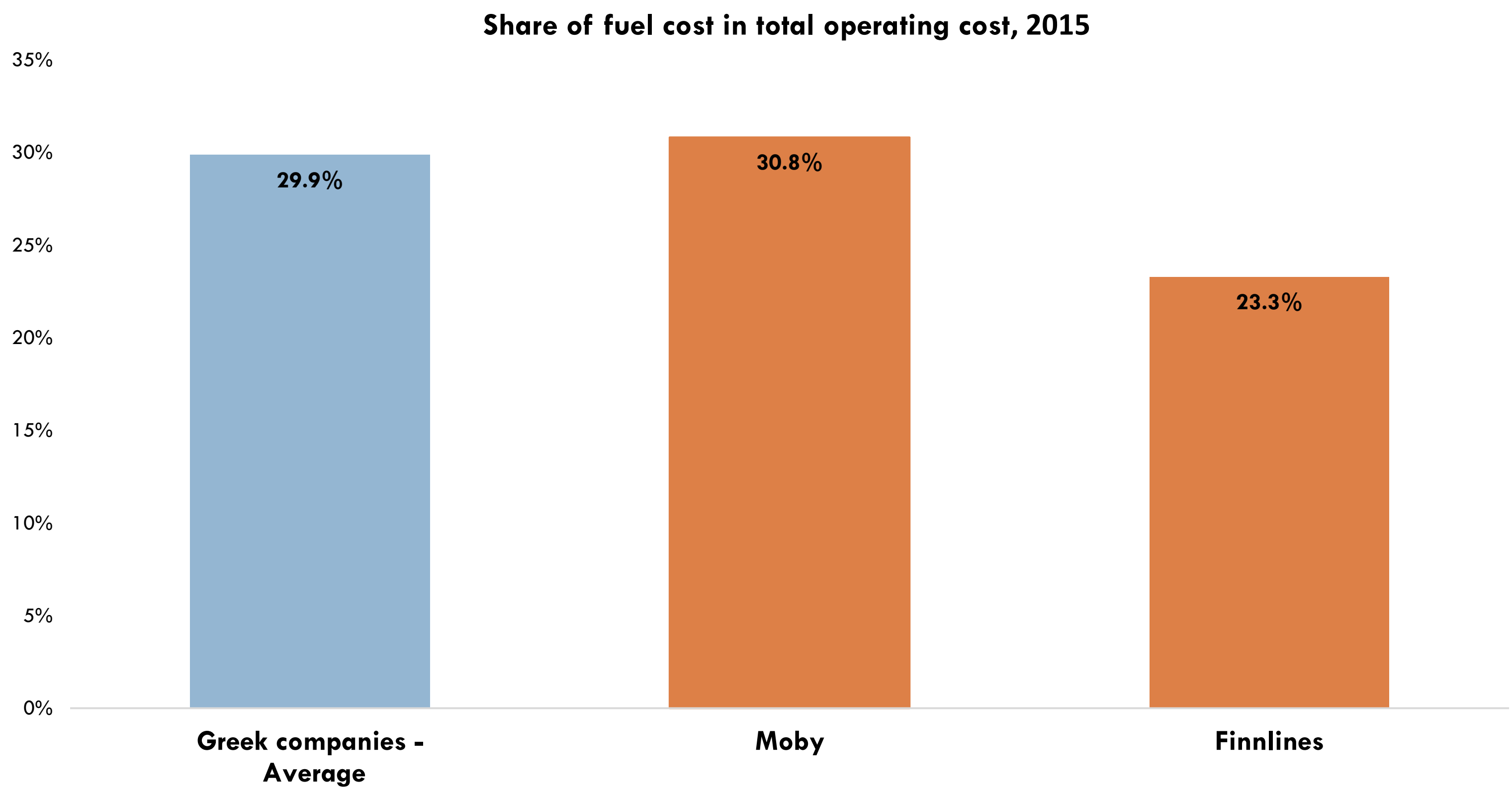
ANEK LINES (Greece)

Moby Lines (Italy)

Finnlines (Finland)

Note: The comparison of data with a larger number of European passenger shipping companies is restricted by the lack of annual financial reports (for instance, Grimaldi Lines, Corcicaferries, etc.) or different reporting of revenues and expenses compared with the Greek companies (e.g. DFDS and others).

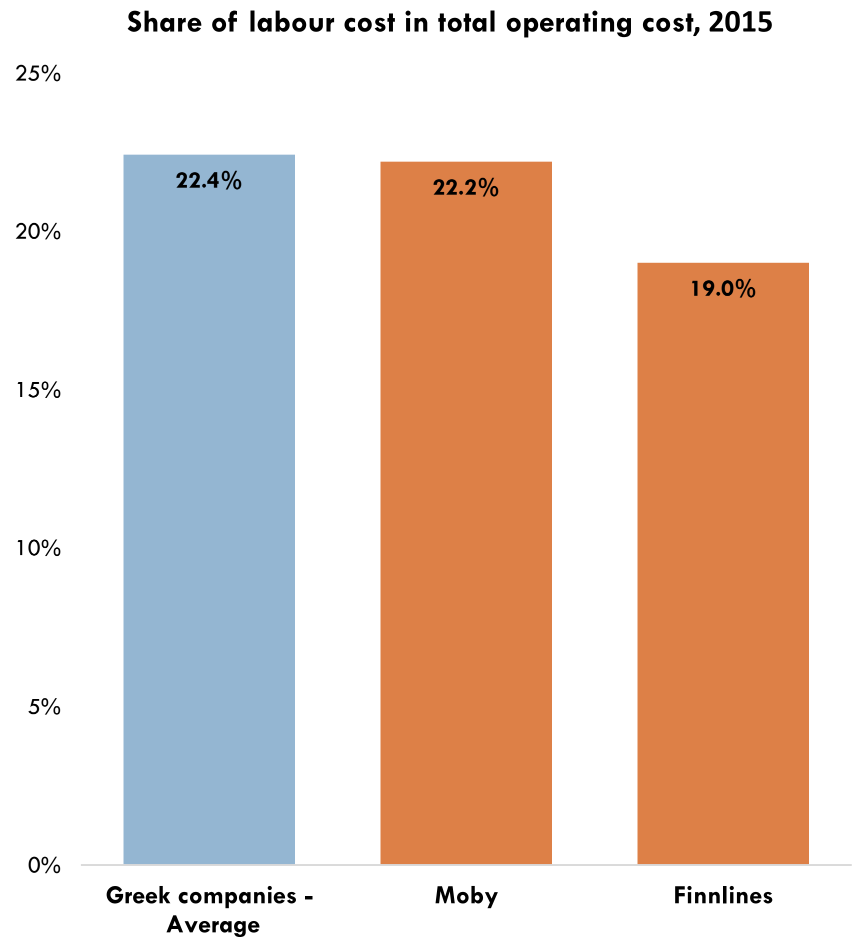
Fuel cost is the main operating expense of the Greek shipping passenger companies



Source: Annual Financial Reports **Data processing:** IOBE

- The cost of fuel of the Greek passenger shipping companies (as a share of total operating expenses) was similar to Moby, yet notably higher than that of Finnlines

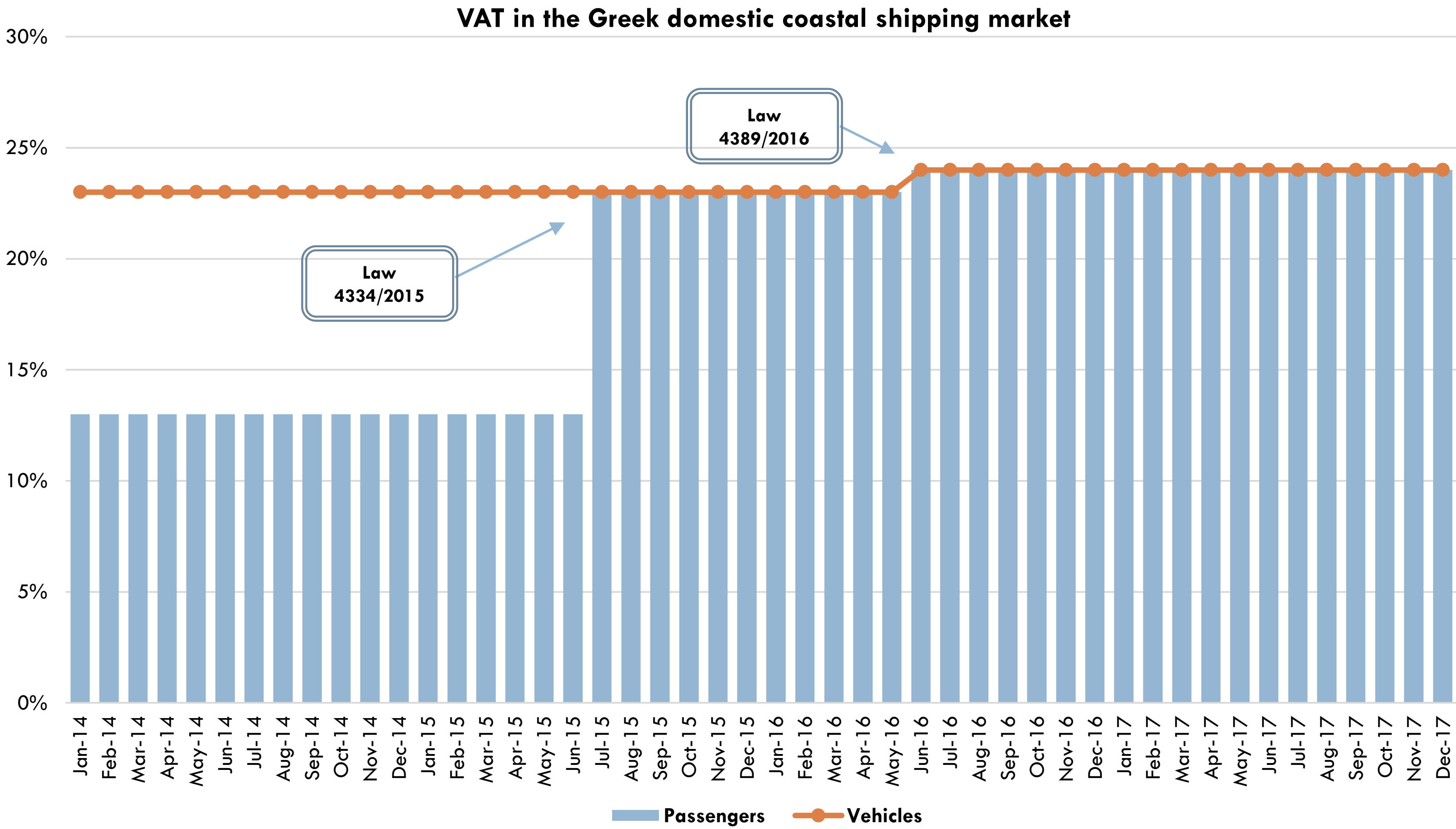
Labour costs affect substantially the operating expenses of the passenger shipping companies



Source: Annual Financial Reports **Data processing:** IOBE

- At about 20% of the total operating expenses, both in Greek and other European companies
- In Finland, the State participates in the seafarers' insurance funds by covering part of the contributions (Seafarers Pension Act)
  - In 2017, the share of the employees for their pension contribution is at:
    - 6.15% for employees under 53 or older than 63 years
    - 7.65% for employees in the age group between 53 and 63 years old
  - The employer contribution is at 15.4%.

Between 2015 and 2016, the VAT imposed on coastal passenger transportation increased by 11 percentage points



(*) Urgent measures for the implementation and the agreement with the European Stability Mechanism
(**) Urgent provisions for the implementation of the financial targets and structural reforms agreement and other provisions
Source: Ministry of Finance

Greece has the second highest VAT rate in coastal shipping passenger transportation among the EU countries

VAT on sea passenger transportation services in EU member - states

Country	VAT
Croatia	25%
Greece	24%
Lithuania	21%
Bulgaria	20%
Estonia	20%
Germany	19%
Romania	19%
Latvia	12%
Spain	10%
France	10%
Italy	10%
Finland	10%
Slovenia	9,5%
Cyprus	9%
Poland	8%
Belgium	6%
Netherlands	6%
Portugal	6%
Sweden	6%
Malta	0%
United Kingdom	0%

14 percentage points

Source: European Commission

Other EU countries with significant coastal shipping passenger traffic impose a VAT on passenger tickets which varies between 6% (in Sweden) and 10% (in Italy)

The effect of operating expenses and VAT on passengers' fare
Case studies from Greece and Italy

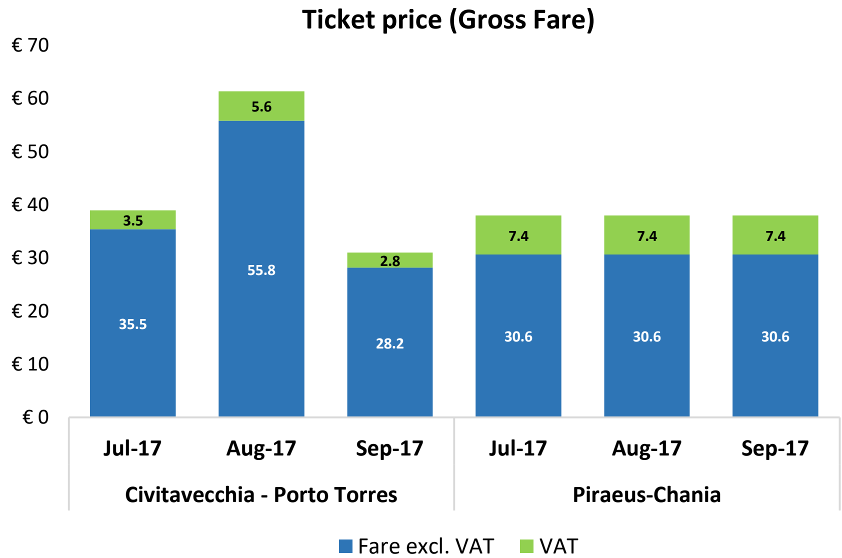
Routes in Greece and Italy, based on similar distance (in nautical miles)

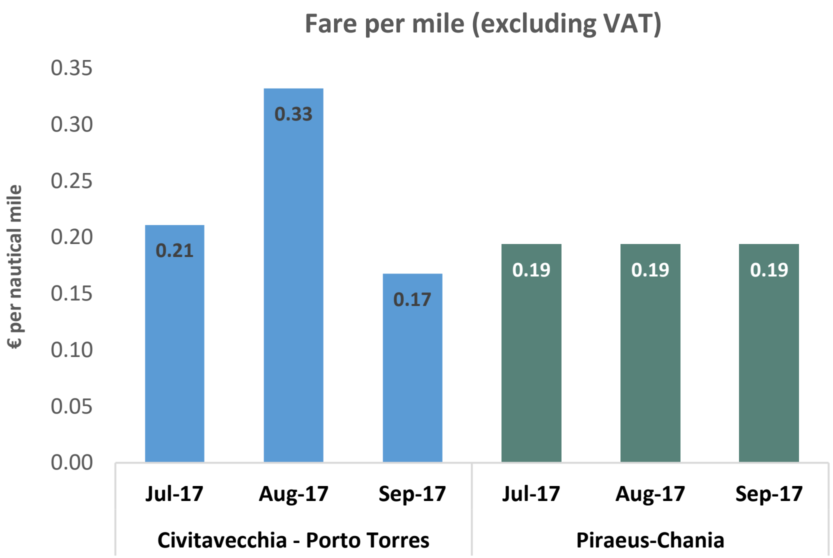
	Country	Route	Distance (in nautical miles)	Company
1	Italy	Civitavecchia-Porto Torres	168	Grimaldi Lines
1	Greece	Piraeus-Chania	158	ANEK Lines
2	Italy	Palermo-Salina	75	Liberty Lines
2	Greece	Piraeus-Syros	79	Hellenic Seaways

(*) One-way ticket, one passenger without cabin, economy class
(**) Route selection on three different dates: 10 July 2017, 10 July 2017 & 10 September 2017
(***) Fares found on the internet on the same date (25th May 2017)
(***) Routes and distances from sea-distances,org/

- The comparison of indicative domestic coastal routes of similar distance in Greece and Italy aims to detect similarities and differences in the transportation cost of passengers

Limited demand-based price differentiation in the coastal shipping transportation services in Greece





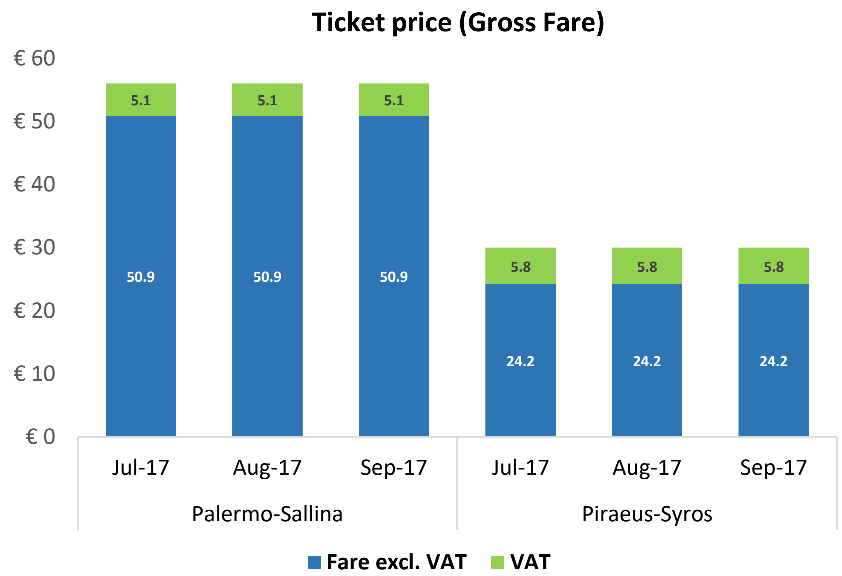
Fare comparison

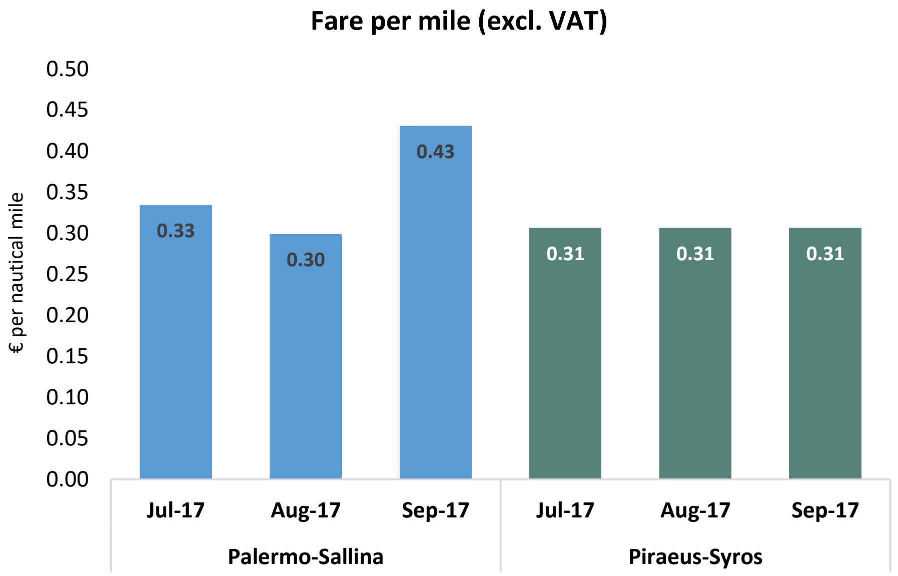
Route	10/7	10/8	10/9
Civitavecchia-Porto Torres Piraeus-Chania	*-10%*	*-42%*	*+12%*

Source: affery.com, airtickets.com **Data processing:** IOBE

- In the Greek market there is no differentiation in the price based on early booking
- Fare per mile in the specific route is smaller in Greece

In small distance routes, the net fare per mile is lower in Greece





Fare comparison

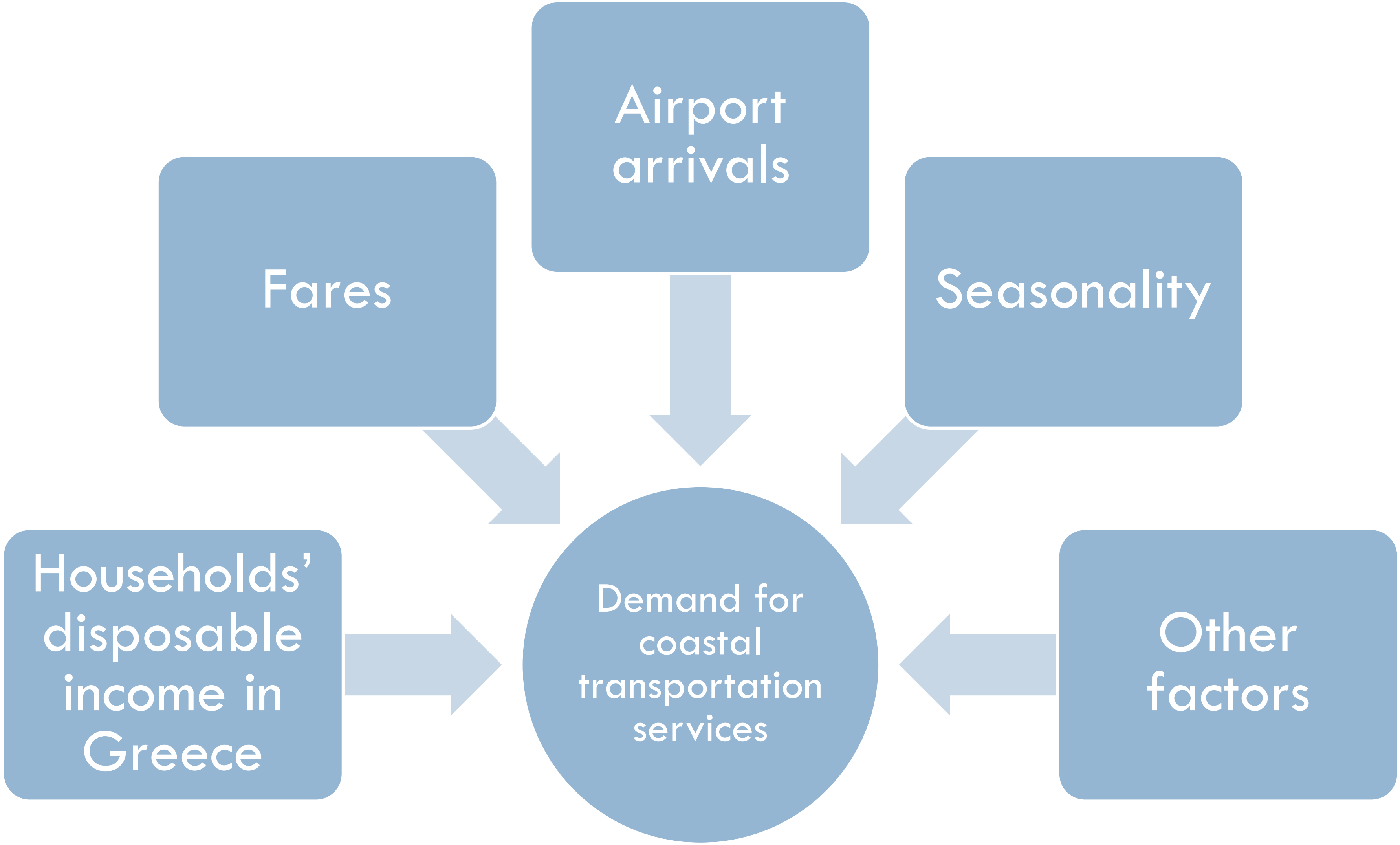
Fare	10/7	10/8	10/9
Palermo-Sallina	*-54%*	*-54%*	*-54%*
Piraeus-Syros			

Source: directferries.com, airtickets,com **Data processing:** IOBE

Given the operating expenses of the Greek passenger shipping companies, the high VAT rate has a negative effect on their pricing policies

1.5 Key demand factors

Likely demand factors: disposable income, ticket cost, airport arrivals and seasonality



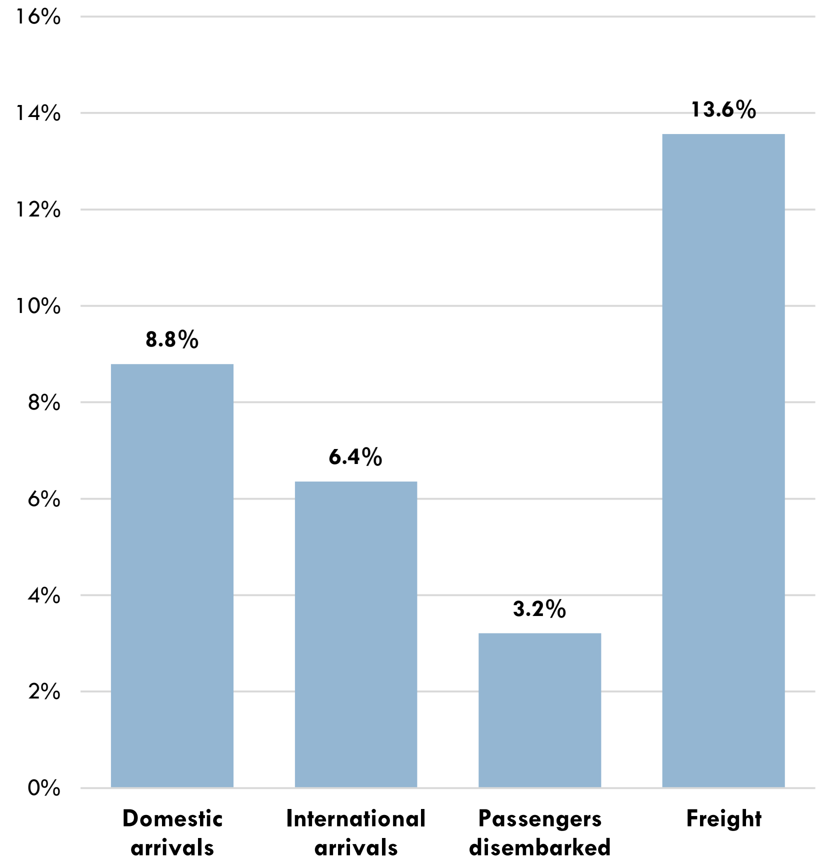
The growth of arrivals at the airports of the islands has a positive effect on freight transportation by passenger vessels

Passenger and freight transportation in Greek islands with airport, 2016

Geo	Domestic airport arrivals (thousand)	International airport arrivals (thousand)	Coastal passengers disembarked (thousand)	Freight (thousand tonnes)
Astypalaia	5.8	0	25.6	20.4
Zakynthos	32.6	672.4	482.1	225.5
Heraklion	503.0	2859.9	743.9	921.1
Ikaria	19.3	-	80.7	0.0
Kalymnos	8.7	-	51.0	45.1
Karpathos	28.7	81.3	17.4	26.5
Kassos	1.8	0.0	5.8	7.4
Kastelorizo	3.3	0.0	11.6	3.6
Kefalonia	33.4	234.1	253.3	112.5
Kythira	14.2	3.8	20.2	5.5
Kos	101.0	848.7	153.0	126.3
Leros	12.5	0.0	57.4	23.2
Limnos	32.4	10.5	98.0	6.0
Milos	23.7	0.0	141.2	20.7
Mykonos	190.0	301.8	604.0	156.1
Mytilini	169.5	31.5	178.7	165.9
Naxos	16.5	-	403.3	101.5
Paros	37.9	-	452.5	108.9
Rhodes	421.3	2.045.6	294.6	270.1
Samos	74.3	96.8	56.1	45.5
Santorini	433.6	389.8	701.3	151.5
Siteia	9.6	0.6	4.4	4.1
Skiathos	20.8	175.9	188.7	85.5
Skyros	6.5	1.1	73.2	20.3
Syros	7.7	-	296.5	67.5
Chania	436.8	1039.6	342.0	463.6
Chios	91.5	2.3	186.1	117.6
Total	**2736.3**	**8795.7**	**5922.6**	**3301.8**

Note: Freight with Roll on – Roll off (RoRo) ships
Source: ΕΛΣΤΑΤ **Data processing:** IOBE

Passenger and freight traffic in Greek islands with airport, Y-o-Y change between 2016 και 2015



The increase of freight volume transported by passenger vessels in the islands with airports was higher than the increase in passenger traffic in 2016 compared to 2015

We applied econometric techniques examine the effect of different factors on the demand for coastal shipping tickets

Variables of the model

Pass_Tickets

- Monthly data for coastal passenger traffic for the period 2002-2016.
- Source: ELSTAT, IOBE estimations

Income:

- Monthly index of household disposable income.
- The index is compiled, using data on net national disposable income (published quarterly), together with monthly data on the Consumer Price Index (ELSTAT), employment (ELSTAT), travel receipts (Bank of Greece), consumer credit (Bank of Greece) and average monthly salaries (Social Insurance Organisation).

CPIboats:

- Consumer Price Index for seaborne transportation (Code 0734)
- Source: ELSTAT

Arrivals_D:

- Domestic arrivals at island airports
- Source: Civil Aviation Authority

Arrivals_Int

- International airport arrivals
- Source: Civil Aviation Authority

D_Jan – D_Dec:

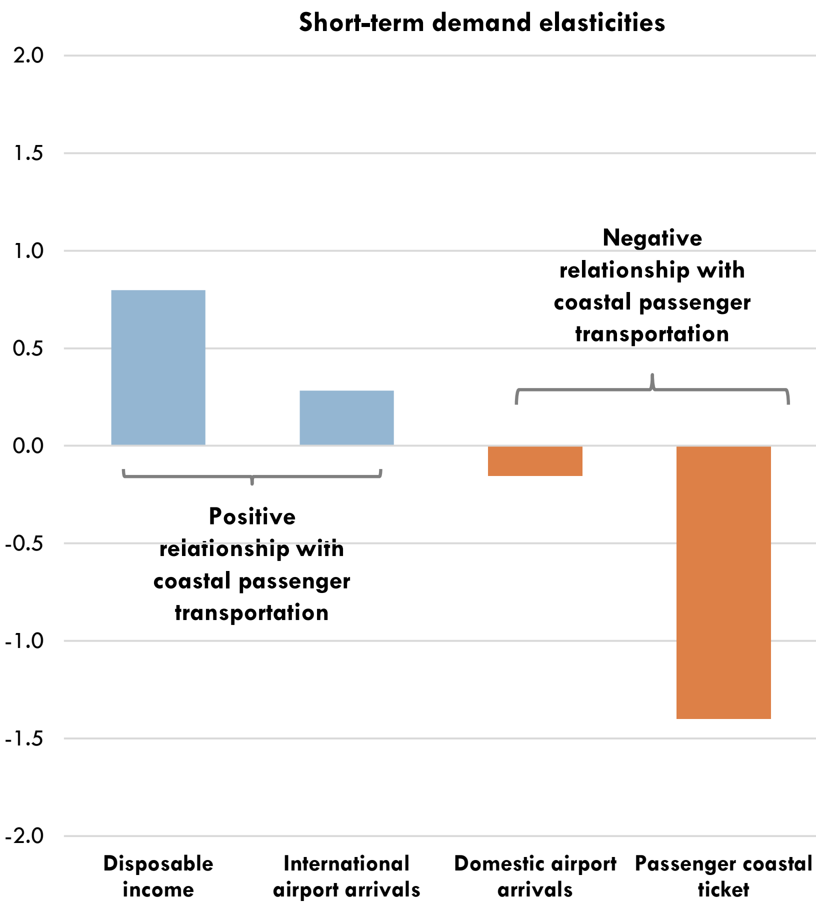
- Seasonality dummies

D_2009-2013

- Dummy for the period of the deep recession of the Greek economy

Scope of the regression: estimation of demand elasticity for coastal shipping services with respect to the price of tickets and household disposable income.

Disposable income and international airport arrivals are positively related with coastal shipping demand



Source: IOBE estimations

Interpretation of the model's coefficients (Short-term elasticities of demand)

10% increase of disposable income increases the sales of coastal shipping tickets by 8% in the short term

10% increase of international arrivals at the airports increases the demand for tickets by 2.8% in the short term

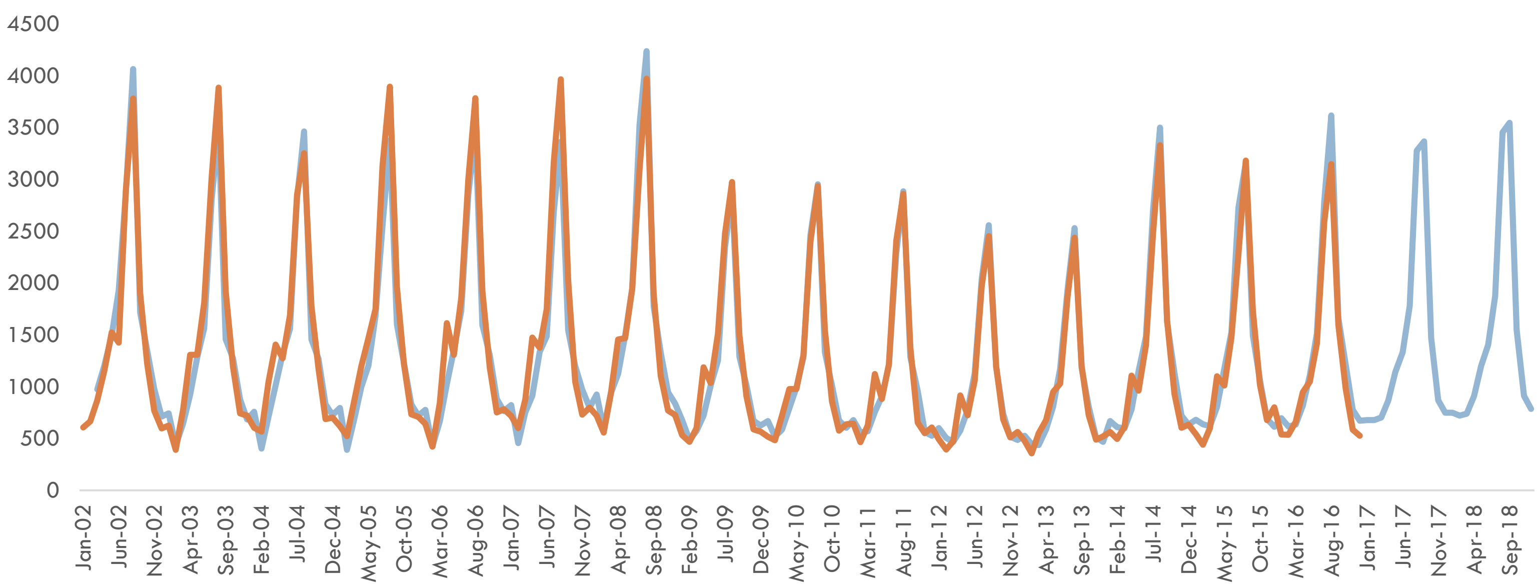
10% increase of the ticket price reduces demand by 14% in the short term

10% increase of the domestic airport arrivals reduces the demand for coastal transportation services by 1.6% in the short term

The fares for coastal transportation services and domestic airport arrivals in the islands are negatively related with demand

Good fit of the econometric model to the data

Comparison of the estimated and observed demand for coastal maritime tickets, 2002-2016



Demand function for coastal tickets, fitted with the regression results:

$\mathbf{Y_t} = 11.59 + 0.238\ \mathbf{Y_{t-1}} - 1.4\ \mathbf{X_{1(t-1)}} + 0.8\ \mathbf{X_{2(t-1)}} + 0.2\ \mathbf{D\_Jun} + 0.6\ \mathbf{D\_Jul} + 0.7\ \mathbf{D\_Aug} - 0.3\ \mathbf{D\_2009\text{-}2013} - 0.2\ \mathbf{Arrival\_D} + 0.3\ \mathbf{Arrival\_Int} + u$

where,

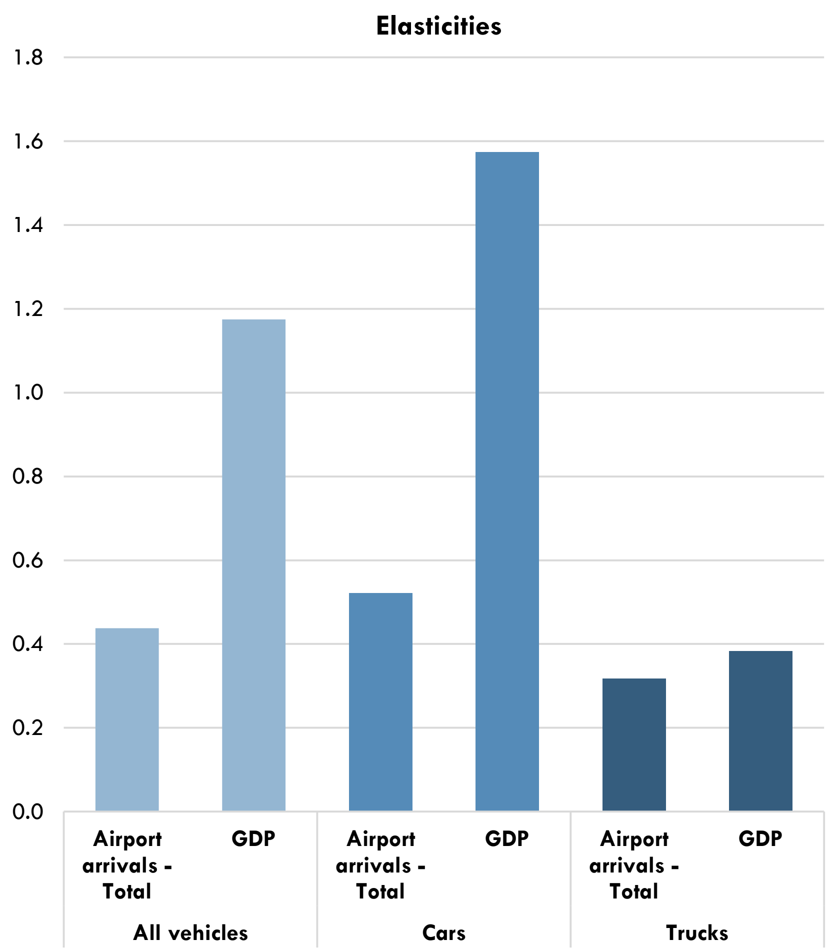
$\mathbf{Y_t}$: final demand for coastal transportation services (amount of tickets) at time t,

$\mathbf{Y_{t-1}}$: demand at time t-1

$\mathbf{X_{1(t-1)}}$: ticket price at time t-1

$\mathbf{X_{2(t-1)}}$: household disposable income at time t-1

Positive correlation between vehicle transportation by coastal shipping and airport arrivals



Source: IOBE estimations

- An increase of total airport arrivals in the islands by 10% would:
  - Increase cars transported by coastal shipping by 5.2%
  - Increase by 3.2% in transported trucks
- Increase of GDP by 10% would:
  - Increase car traffic by 15.7%
  - Increase demand for the transport of trucks by 3.8%

1.6 Financial analysis

Introduction

- This section analyses the financial structure and results of the companies operating in the passenger shipping sector
- The data of the analysis come from published company financial statements for the period 2009-2016
- The analysis covers data from the companies:
  - Listed on the Athens Stock Exchange:
    - Attica Group
    - ANEK Lines
    - MINOAN Lines
  - Hellenic Seaways
- The financial analysis is performed:
  - In total for the above mentioned companies
  - For two geographical subcategories
    - Domestic routes
    - International routes (mainly in the Adriatic sea)

The passenger shipping sector returned to profits in 2015 and 2016

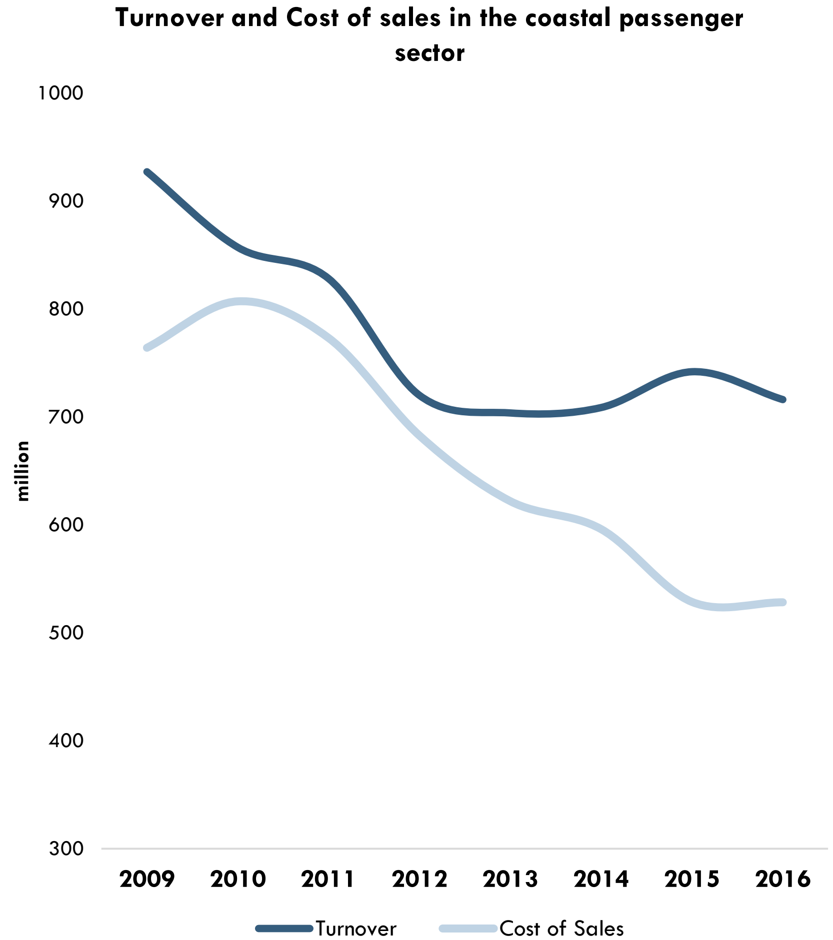
Key Financial Results

	2009	2010	2011	2012	2013	2014	2015	2016	GAGR* ('16-'09)	%Δ 2016/09
Income statement										
Turnover	927	857	828	720	704	709	742	716	-3,6%	-22,8%
Cost of Sales	764	807	773	683	622	596	529	528	-5,1%	-30,9%
Profit before income tax	17	-201	-179	-201	-114	-32	56	51	-	-
Balance sheet										
Total Assets	2547	2360	2197	2065	1900	1818	1823	1793	-4,9%	-29,6%
Net Value of Fixed Assets	2078	2013	1918	1825	1670	1585	1513	1470	-4,8%	-29,3%
Current assets	387	347	275	238	230	233	310	323	-2,5%	-16,5%
Total Equity	1223	1056	914	712	648	660	715	770	-6,4%	-37,0%
Short-term liabilities	607	395	682	1274	936	643	485	487	-3,1%	-19,8%
Long-term liabilities	717	910	601	79	317	534	640	550	-3,7%	-23,3%
Total liabilities	1324	1305	1283	1354	1252	1177	1125	1037	-3,4%	-21,7%

*CAGR: Compound Annual Growth Rate
Source: Annual Financial Statements **Data processing:** IOBE

- Total assets of the passenger shipping companies contracted by 5% per annum on average between 2009 and 2016
- The net value of fixed assets, which represents the largest part of total assets, shows similar decrease
- In liabilities, lending underwent restructuring in favour of long-term loans between 2013 and 2016

Turnover declined in 2016 compared to 2015
The cost of sales stabilized



Source: Annual Financial Statements **Data processing:** IOBE

- Regarding the income statement, the turnover of the passenger shipping companies increased in 2013 and 2014 following the decline in previous years
  - Turnover declined by 3.6% annually on average between 2009 and 2016
- The cost of sales contracted by 5.1% on average between 2009 and 2016
  - The cost reduction came from measures adopted in order to contain the fuel cost (such as slow steaming and route optimisation), and the small decline of fuel prices in the international markets in 2015 and 2016.

Most financial ratios improved in 2015 and 2016

Key Financial Ratios

	2009	2010	2011	2012	2013	2014	2015	2016
Profitability								
Net Profit Margin	1,8%	-23,4%	-21,6%	-27,9%	-16,1%	-4,5%	7,6%	7,1%
Gross Profit Margin	17,6%	5,9%	6,6%	5,2%	11,6%	15,9%	28,7%	26,2%
Return on Equity	1,4%	-19,0%	-19,6%	-28,2%	-17,5%	-4,8%	7,9%	6,6%
Return on Assets	0,7%	-8,5%	-8,1%	-9,7%	-6,0%	-1,7%	3,1%	2,8%
Capital Structure								
Current to Total Assets	15,2%	14,7%	12,5%	11,5%	12,1%	12,8%	17,0%	18,0%
Debt-to-assets ratio	52,0%	55,3%	58,4%	65,5%	65,9%	64,7%	61,7%	57,9%
Liquidity								
Current Ratio	63,7%	87,8%	40,3%	18,7%	24,6%	36,2%	63,9%	66,2%
Quick Ratio	59,8%	79,7%	36,1%	17,1%	22,0%	33,1%	62,0%	64,1%
Current Liabilities to Sales	65,5%	46,1%	82,3%	177,0%	133,0%	90,8%	65,4%	68,1%
Current Bank Liabilities to Sales	15,7%	20,2%	54,5%	109,3%	96,7%	63,8%	47,3%	46,9%
Solvency								
Interest-to-Sales Ratio	4,3%	3,9%	6,0%	4,8%	5,9%	5,2%	4,8%	4,3%
Interest Coverage Ratio	112,9%	-198,7%	-32,1%	-4,1%	104,1%	214,0%	476,5%	490,0%

- The leverage of the passenger shipping companies decreased in 2015 and 2016
- Current liquidity increased in 2015 and 2016
    - This indicates that the current assets of the companies could cover sufficiently their short-term liabilities
- The share of funds allocated to current assets increased
    - Reflects the improved liquidity of the market
- The gross profit margin increased from 5.2% in 2012 to 26.2% in 2016
- The return on equity improved in 2015 and 2016, whereas equity also increased during the same period

Source: Annual Financial Statements **Data processing:** IOBE

Based on asset composition, the domestic market represents most of the activity of the sector

Financial results per geographic sector

	2009	2010	2011	2012	2013	2014	2015	2016	CAGR* ('16-'09)	%Δ 2016/09
Domestic routes										
Turnover	537	472	455	412	389	400	441	418	-3,5%	-27,4%
Cost of Sales	431	449	426	395	363	349	340	335	-3,5%	-28,4%
Net profit (before tax)	27	-99	-84	-87	-62	-7	44	38	-	442,9%
Total Assets	1234	1182	1179	1233	1083	1032	1035	1006	-2,9%	-29,7%
International routes										
Turnover	258	358	354	290	289	280	270	271	0,7%	5,0%
Cost of Sales	227	336	325	262	279	263	206	209	-1,2%	-7,9%
Net profit (before tax)	-6	-86	-68	-68	-26	-14	24	22	-	-
Total Assets	912	826	711	426	431	413	414	430	-10,2%	-52,9%
Unallocated sums										
Turnover	132	28	18	18	26	28	31	27	-20,3%	-79,5%
Cost of Sales	106	23	22	26	-20	-15	-17	-16	-176,3%	-115,1%
Net profit (before tax)	-5	-17	-28	-46	-25	-11	-12	-9	8,8%	80,0%
Total Assets	401	353	256	354	340	331	323	298	-4,2%	-26,1%

*CAGR: Compound Annual Growth Rate
Note: The analysis of the financial results per geographical sector is hindered by the fact that the financial statements of most companies in the sector contain figures for their total activity, which includes shipping services both in the country and abroad. The notes to the financial statements contain a breakdown per sector of operation, yet the breakdown covers relatively few indicators (mainly from the income statement), with differences across the companies
Source: Annual Financial Statements **Data processing:** IOBE

- The domestic routes represented 70% of the sector's allocated assets in 2016
- Similarly, the share of the domestic market in terms of turnover stood at 58% in 2016 from 60% in 2009

Regarding profitability the trends in the two geographic sectors are similar

Profitability per geographic sector

	2009	2010	2011	2012	2013	2014	2015	2016
Domestic routes								
Gross Profit Margin	5,1%	-20,9%	-19,8%	-23,4%	-17,0%	-1,8%	10,0%	9,0%
Net Profit Margin	19,8%	4,8%	6,4%	4,1%	9,2%	12,8%	23,0%	19,8%
Return on Assets	2,2%	-8,3%	-7,6%	-7,8%	-6,1%	-0,7%	4,3%	3,7%
International routes								
Gross Profit Margin	-2,2%	-24,6%	-23,2%	-32,9%	-14,8%	-5,0%	9,0%	8,3%
Net Profit Margin	12,0%	5,6%	5,9%	6,3%	13,0%	6,3%	23,8%	22,9%
Return on Assets	-0,6%	-10,5%	-11,6%	-22,4%	-10,0%	-3,4%	5,9%	5,2%
Difference								
Gross Profit Margin	7,3%	3,7%	3,4%	9,5%	-2,2%	3,2%	1,0%	0,7%
Net Profit Margin	7,8%	-0,8%	0,5%	-2,2%	-3,8%	-6,5%	0,8%	3,1%
Return on Assets	2,8%	2,2%	4,0%	14,6%	3,9%	2,7%	-1,6%	-1,5%

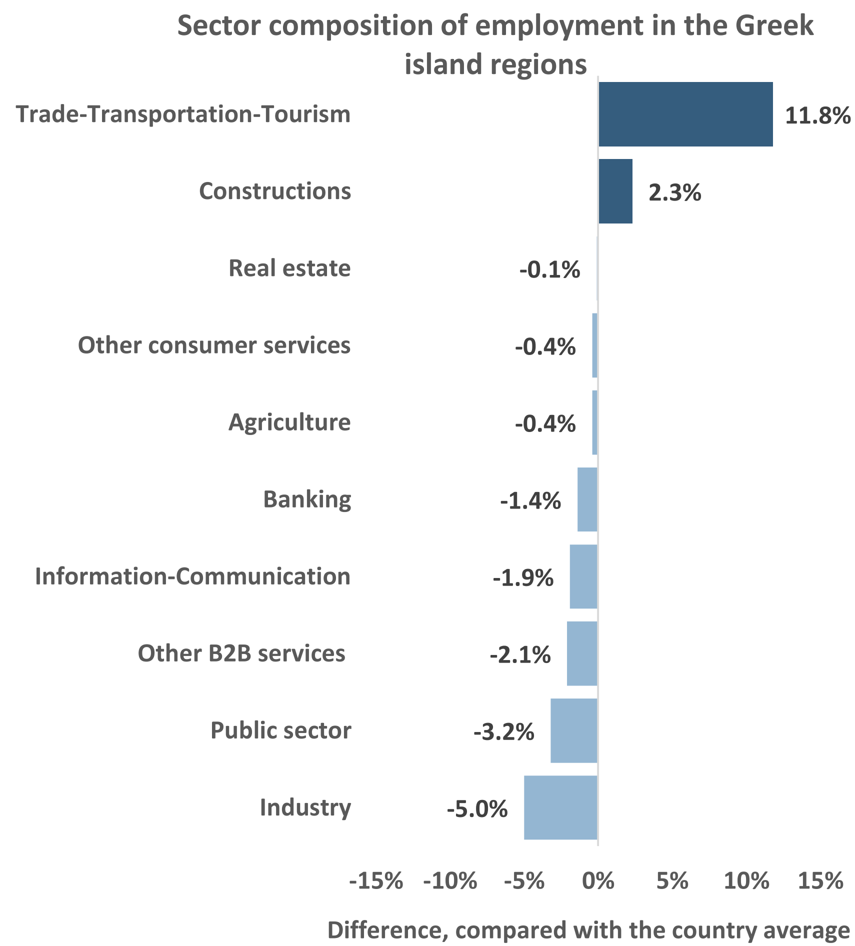
Source: Annual Financial Statements **Data processing:** IOBE

- Higher net profit margin in 2015 and 2016 in the domestic market
- In contrast, the international routes performed better in terms of return on assets

2. The contribution of passenger shipping to the economy of Greece

The coastal shipping sector supports significantly the economy of the Greek islands

- The island regions of Greece (Ionian Islands, North Aegean, South Aegean and Crete) represent:
  - 12.3% of the country's population
  - 11.6% of Greek GDP
  - 13.4% of employment
- Tourism, trade and agriculture are the economic sectors with the strongest contribution to the economic activity of the island regions



Source: Eurostat **Data processing:** IOBE

Almost half of the arrivals in hotels and similar establishments in Greece takes place in the island regions of the country

The impact of passenger shipping

- **Inbound tourism**
  - Visitors arriving at the airports of mainland Greece (particularly in Athens), using coastal shipping to visit an island
  - Foreign visitors arriving directly at the airport of a Greek island and using coastal shipping services to visit other islands (e.g. from Rhodes to Kastelorizo)
- **Domestic tourism**
  - From the mainland to the islands and vice versa (for instance, residents of the Greek islands travelling to the mainland)

26 airports operate in the island regions of Greece, whereas over 70 ports provide regular passenger transport services by sea

Passenger shipping has catalytic effects on foreign trade and the economic activity of the islands

The contribution of passenger shipping to the Greek economy

	Impact from the demand for passenger shipping services		Catalytic effects on other sectors of economic activity	
Domestic routes	**Passenger transportation (household final demand)**	**Freight transportation (intermediate demand from enterprises)**	**Tourism expenditure in the islands**	**Manufacture and agriculture in the islands**
Adriatic sea routes	**Passenger transportation (household final demand)**	**Freight transportation (intermediate demand from enterprises)**	**Exports**	

The overall economic impact estimation takes into consideration the interconnections in the economy

Passenger shipping transport

Input-Output model

Direct

Economic activity of shipping passenger companies

Indirect

The impact generated along the supply chain of passenger shipping

Induced

The impact from household consumption of part of the wages earned by employed persons

Total

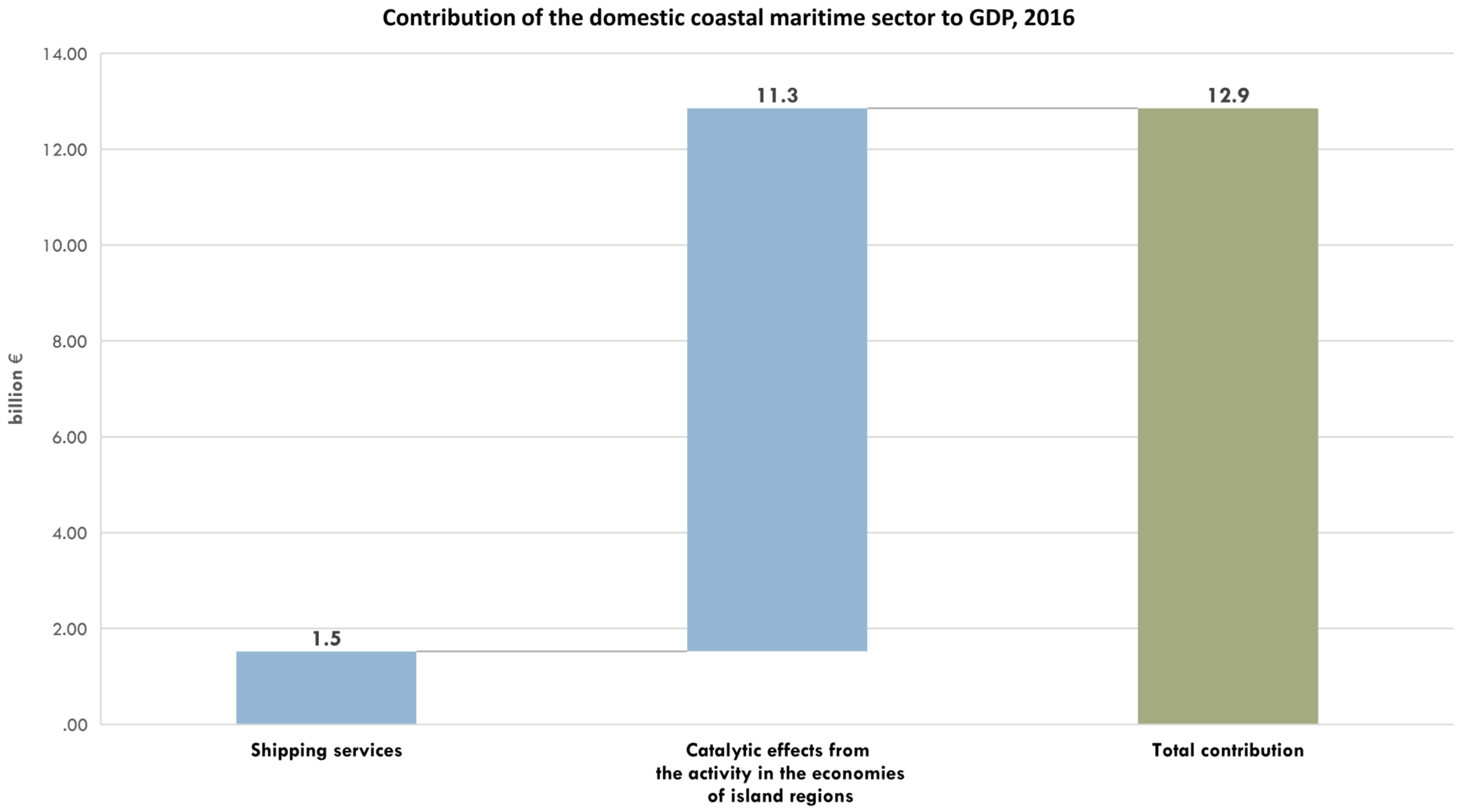
Value Added, employment, tax revenues

Main assumptions of the Input-Output model

- Constant production technology
  - The production of the final product of each branch requires inputs and work in constant proportions
- Constant prices
- Constant consumption preferences
- There are no restrictions on the production capacity of the industries

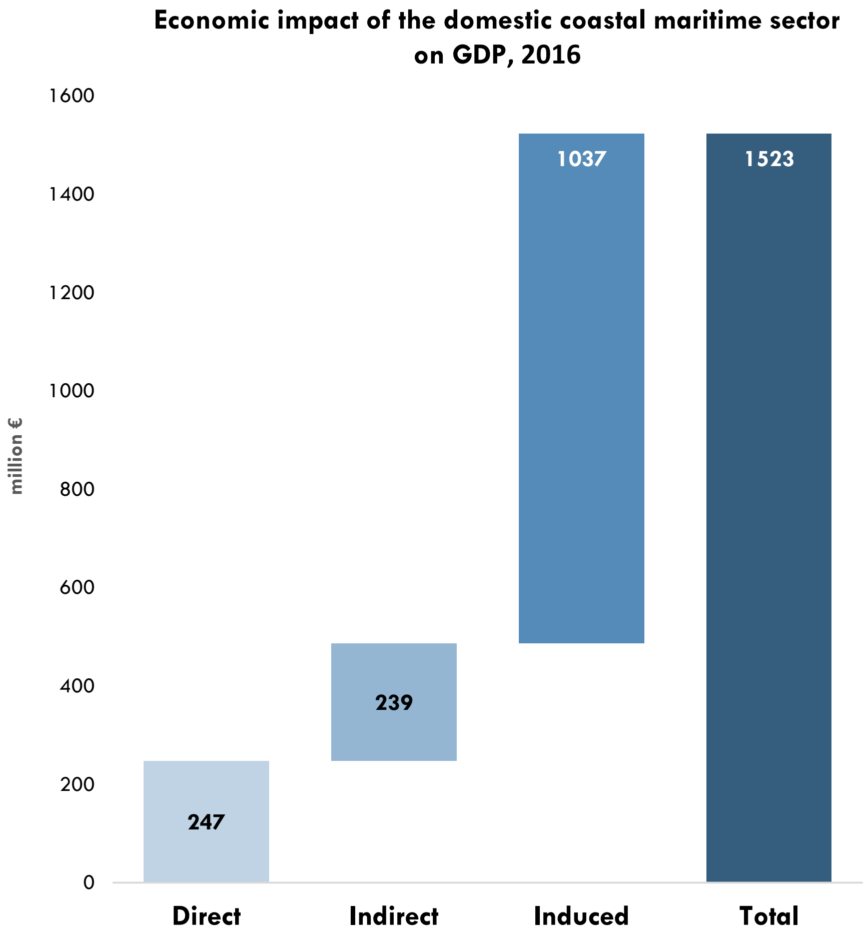
Indirect and induced effects are estimated from the input-output model, considering the interconnections between the different branches of economic activity.

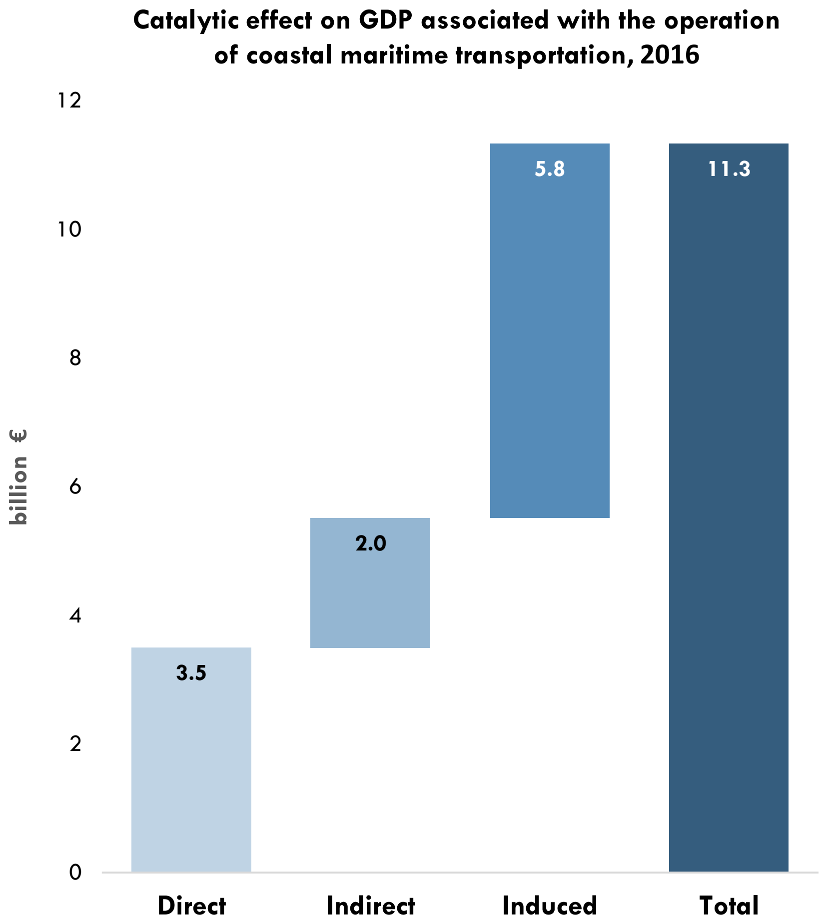
The total contribution of the domestic coastal maritime sector is estimated at 7.3% of GDP in 2016 (€12.9 billion)



Source: IOBE estimations

Coastal transportation services in the domestic market contribute €1.5 billion to GDP (0.9% of GDP in 2016)

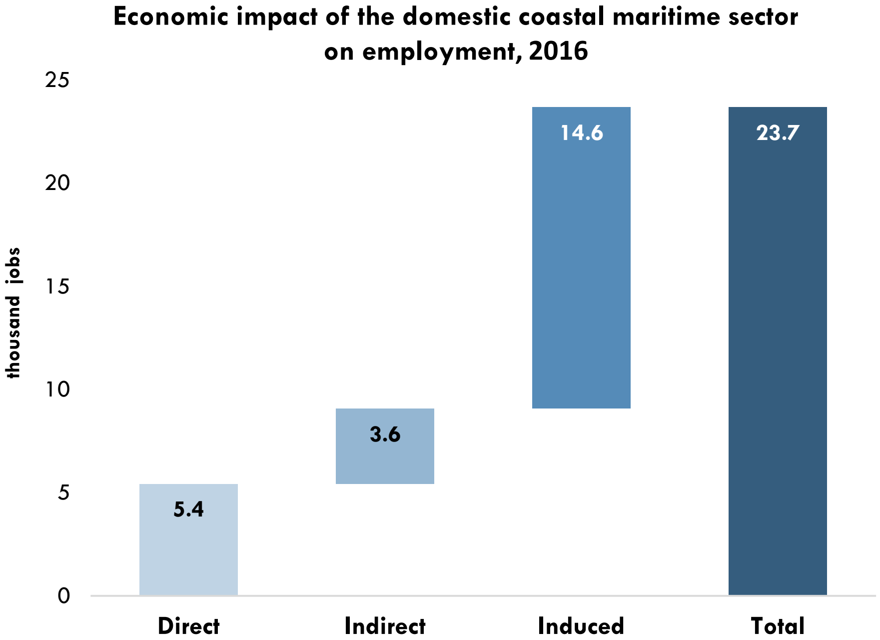


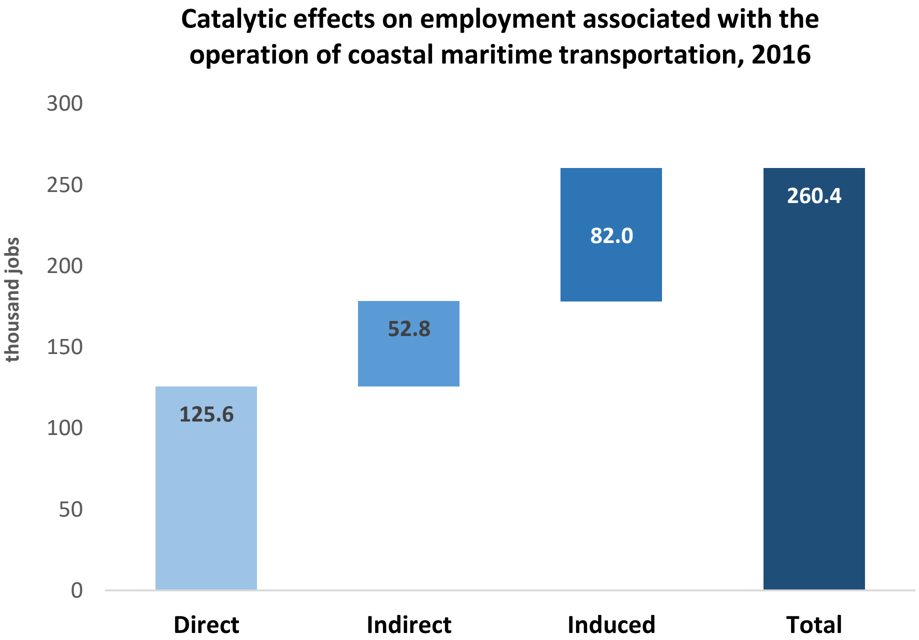


Source: IOBE estimations

Considering the catalytic effect in the Greek islands, the economic impact is estimated at €11.3 billion (6.5% of GDP in 2016)

In terms of employment, the total contribution from the domestic coastal shipping is estimated at 284,000 jobs

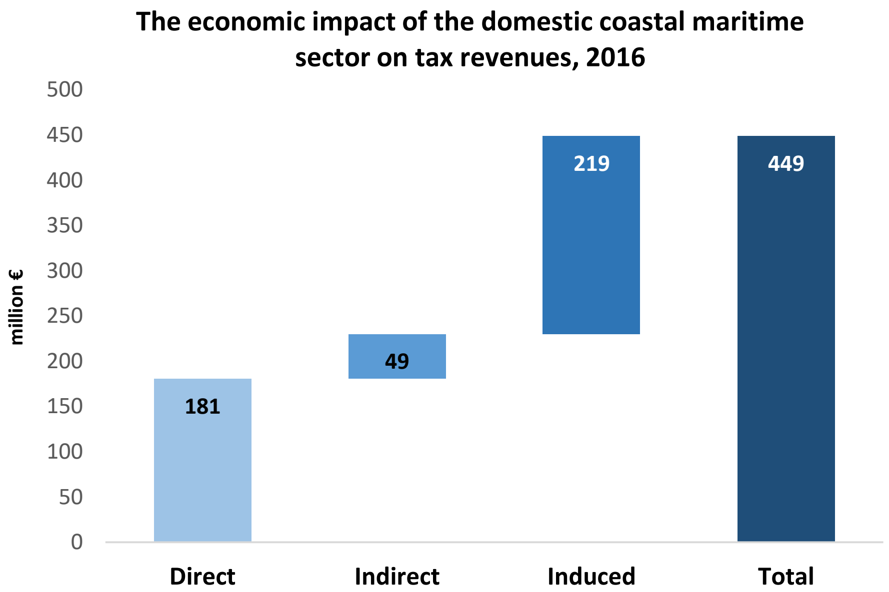


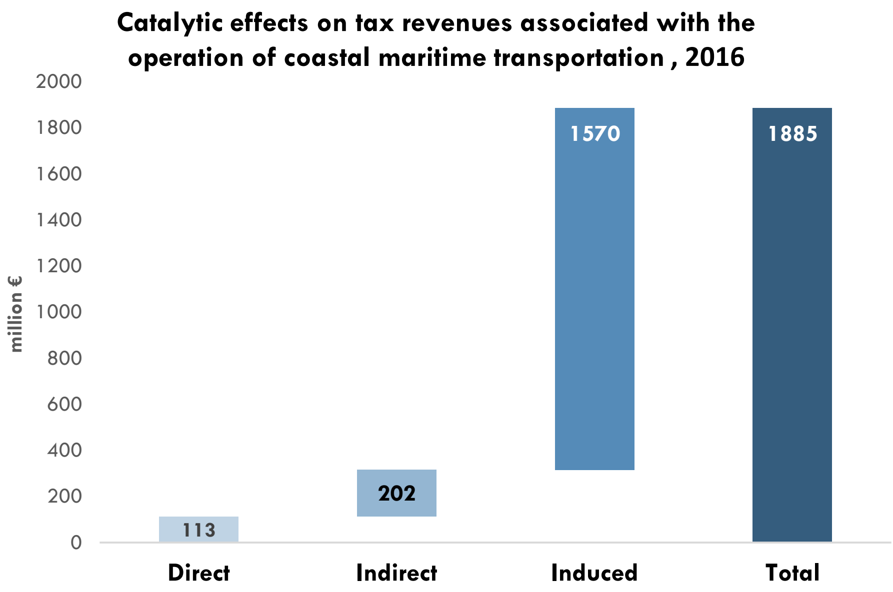


Source: IOBE estimations

- The total contribution of coastal transportation services accounts for 7.9% of total employment
- Corresponds to 53% of total employment in the Greek island regions
- The direct effect in employment is estimated at 5,400 jobs

The total contribution of the domestic coastal shipping to tax revenues is estimated at €2.3 billion

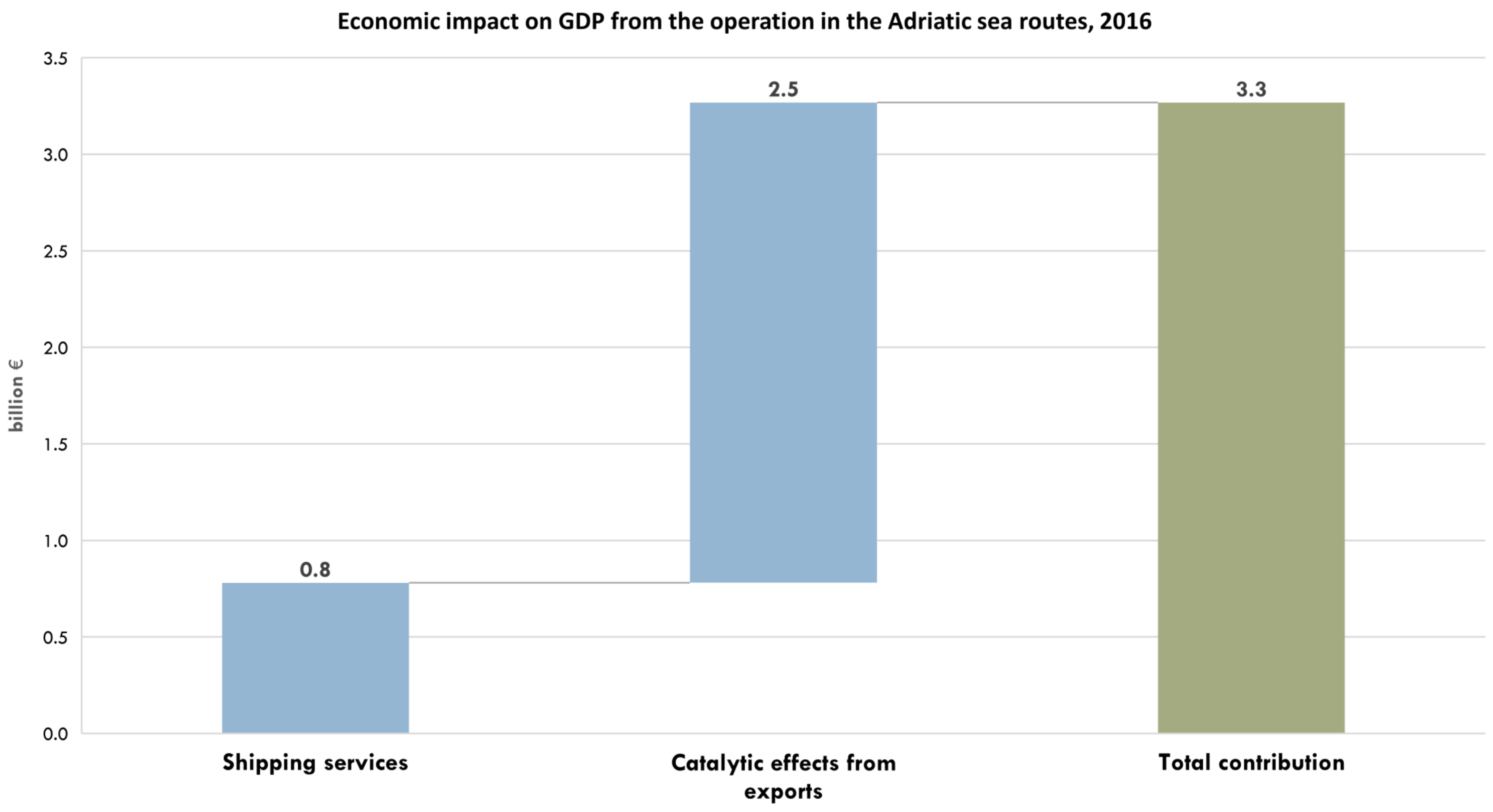




Source: IOBE estimations

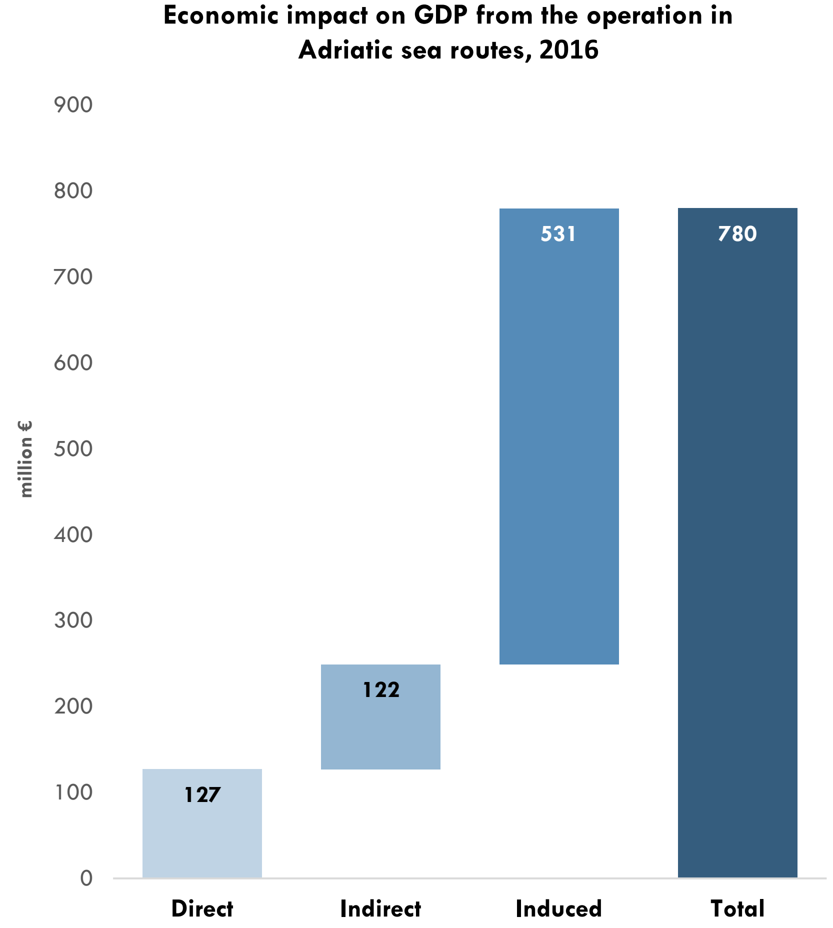
- VAT revenues from fares are estimated at €133 million, whereas social contributions from shipping passenger companies stood at €45.3 million
- 3/4 of the total contribution to tax revenues (approximately €1.8 billion) correspond to induced effects
- The high multipliers in terms of value added and tax revenues are related to the low value added and tax burden in the agriculture sector
  - Correspondingly, the low employment multipliers are mainly due to the labour intensive characteristics of the agriculture sector in Greece

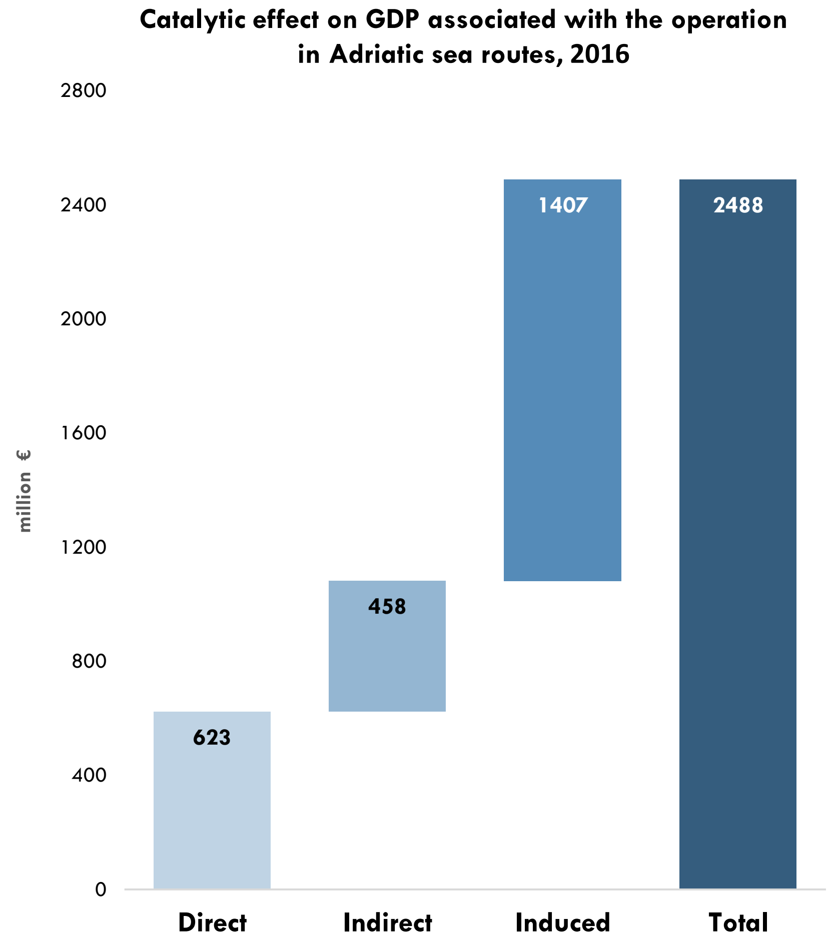
The contribution of passenger shipping from the operation in the Adriatic sea is estimated at €3.3 billion (1.9% of GDP)



Source: IOBE estimations

The transport activity in the Adriatic sea routes contributes about €780 million to GDP (0.4% of GDP in 2016)



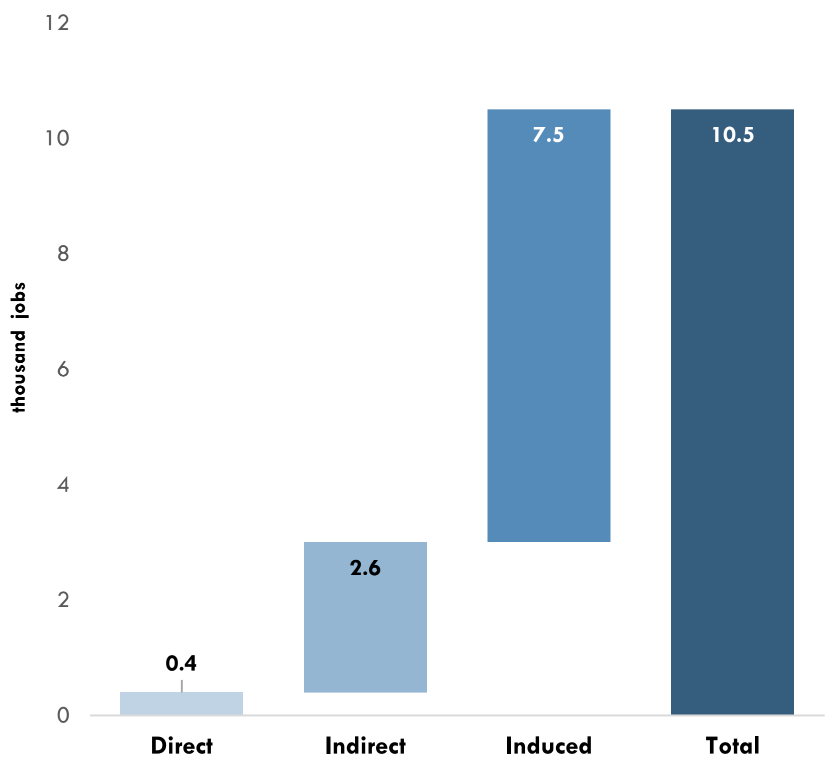


Source: IOBE estimations

The contribution from the catalytic effects of the operation in the Adriatic lines is estimated at €2.5 billion (1.4% of GDP in 2016)

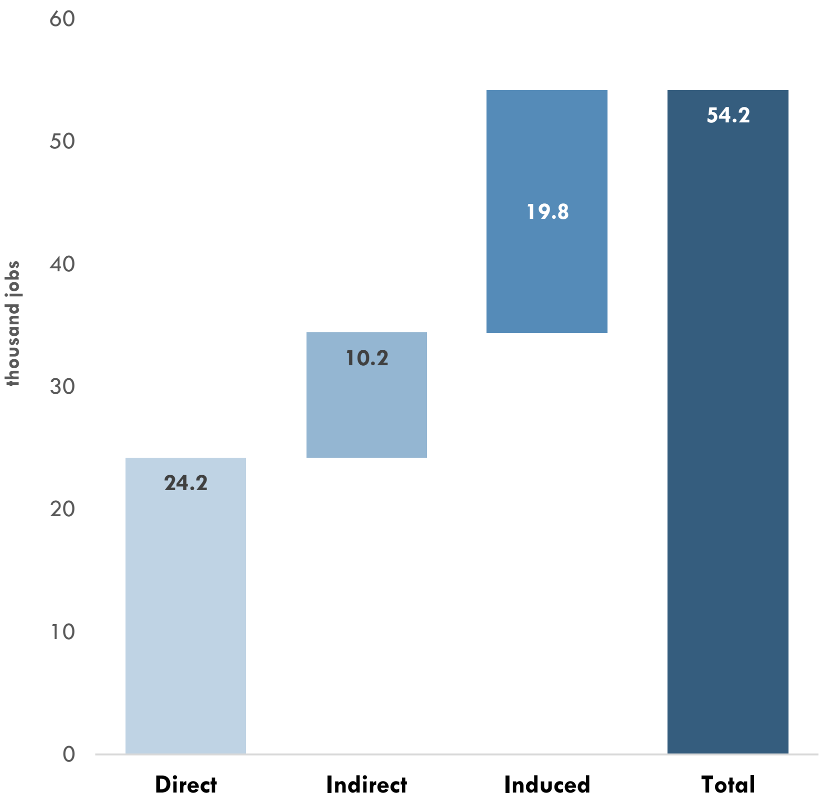
In terms of employment, the total contribution from the Adriatic sea routes is estimated at 65,000 jobs

Economic impact on employment from the operation in Adriatic sea routes, 2016



Source: IOBE estimations

Catalytic effects on employment associated with the operation in the Adriatic sea routes, 2016



Corresponds to 1.8% of total employment in the domestic labor market

The total contribution of the passenger shipping sector to the Greek economy is estimated at €16.1 billion (9.2% of GDP in 2016)

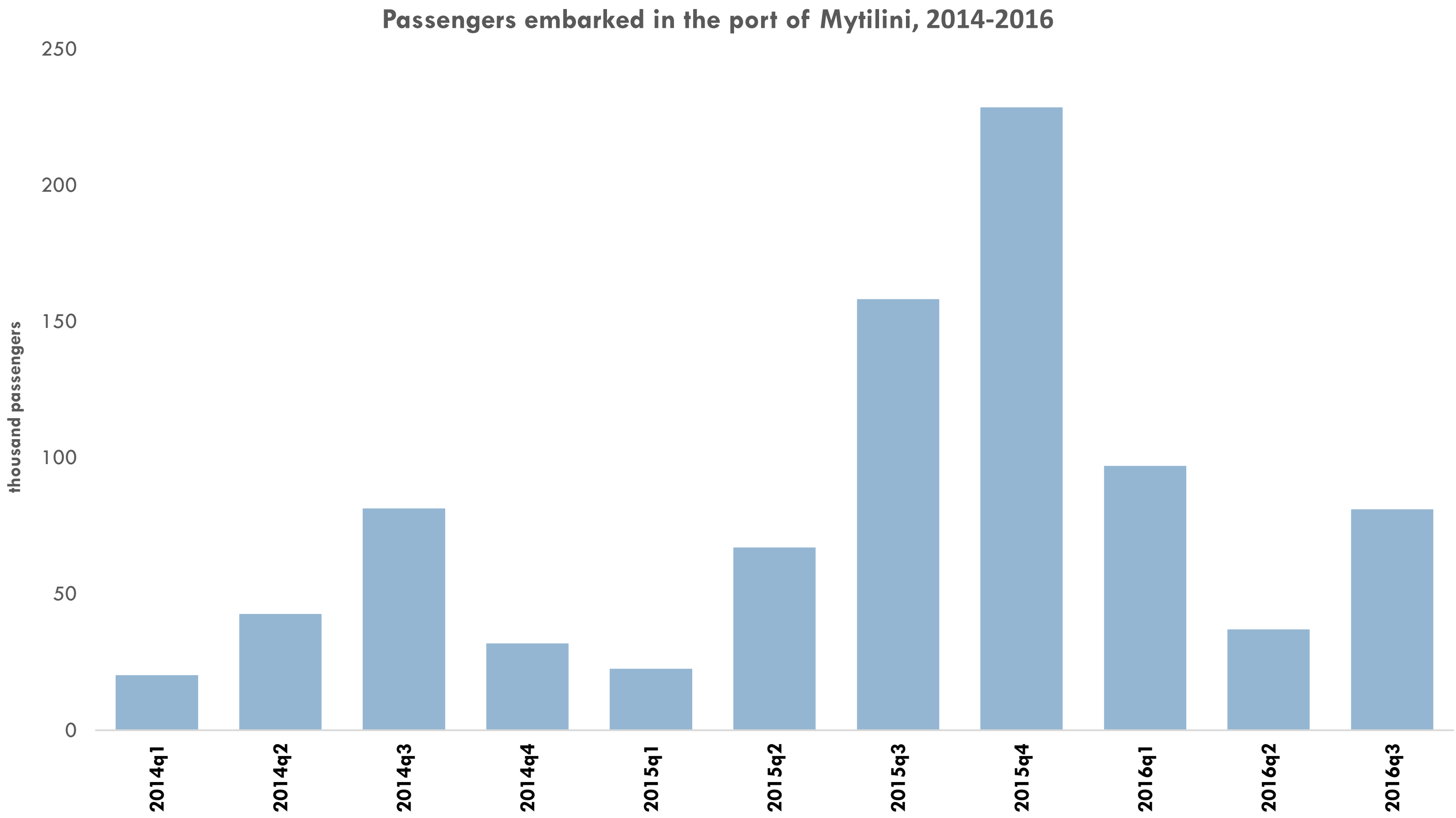
The economic impact of passenger shipping, 2016

	Impact from the demand for coastal maritime services	Catalytic effects	Total
Domestic routes			
GDP (billion €)	1.5	11.3	12.9
Employment (thousand)	23.7	260.4	284
Adriatic sea routes			
GDP (billion €)	0.8	2.5	3.3
Employment (thousand)	10.5	54.2	64.7
Passenger shipping – Total*			
GDP (billion €)	2.3	13.8	16.1
Employment (thousand)	34.2	314.6	348.8

* Excluding ferry services and cruises

In terms of employment, the contribution of passenger shipping accounts for 9.7% of total employment in 2016

The passenger shipping sector contributed to island decongestion during the refugee crisis



Source: ELSTAT

Approximately 700,000 refugees used coastal transportation services in order to travel from islands of the Aegean to the mainland from January 2015 to March 2016

3. Challenges and regulatory issues faced by the sector

3.1 Expected changes in the business environment

The Greek economy is expected to show a modest recovery

European Commission forecasts on the Greek economy

Y-o-Y change	2017	2018
GDP	2,1	2,5
Private consumption	1,4	1,4
Exports of goods and services	3,8	4,2
Imports of goods and services	3,0	3,8
Inflation (%)	1,8	1,7
Employment	1,4	1,7
Unemployment (%)	22,8	21,6

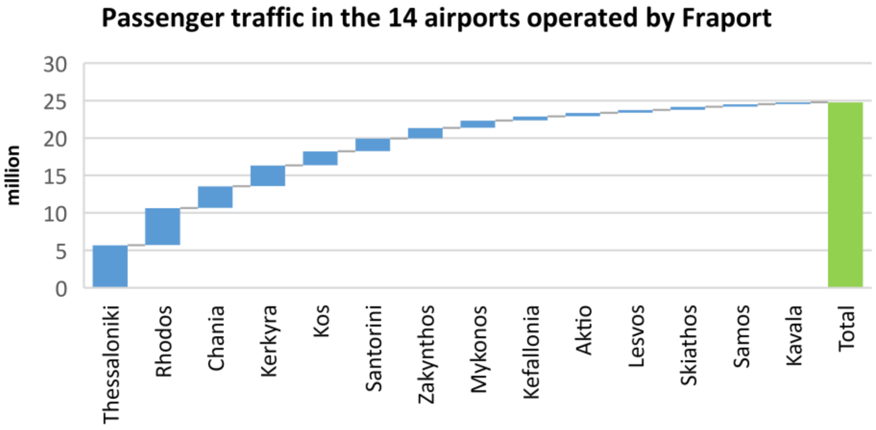
Source: European Commission (European Economic Forecast, Spring 2017)

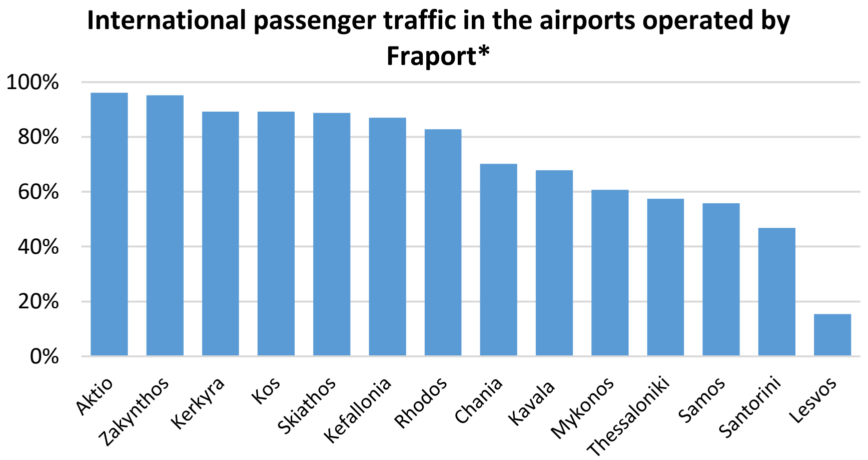
- The Greek economy is expected to expand in 2017 by about 1.5-2.1%
- Household consumption (private consumption) is expected to grow by 1.4% in 2017 and 2018
- Inflation is expected to accelerate to 1.8% in 2017 and 1.7% in 2018
- Exports are expected to grow mainly due to increase in the exports of services
- Tourism receipts may show a moderate increase in 2017
- In the labor market employment is expected to increase by 1.4% in 2017 and 1.7% in 2018
  - The unemployment rate is expected to drop below 21% by the end of 2018

Tourism is expected to have a positive effect on the Greek economy – Concerns for the oil prices

- According to SETE inbound visitors in 2021 are expected to reach 35 million
  - «Sea & Sun», road tourism and city breaks are expected to be the main drivers
- The wider e-ticket use is anticipated to contribute to cost reduction and the modernisation of the pricing policy of the coastal shipping companies, boosting the sector's competitiveness
- However, the operation of the passenger shipping sector is negatively affected by the increase in oil prices
  - During the first nine months of 2017, the price of fuels for shipping have increased by 38% compared to the same period of 2016
  - According to the spring forecasts of the European Commission, the Brent oil prices are expected to reach $55.5 per barrel in 2017 and $55.9 per barrel in 2018
    - Higher by 3.9% and 4.7% respectively compared to 2016 ($53.4 per barrel)

The concession of 14 Greek regional airports to Fraport might have a negative effect on coastal shipping passenger traffic





(*) Share in total passenger traffic (domestic and international)

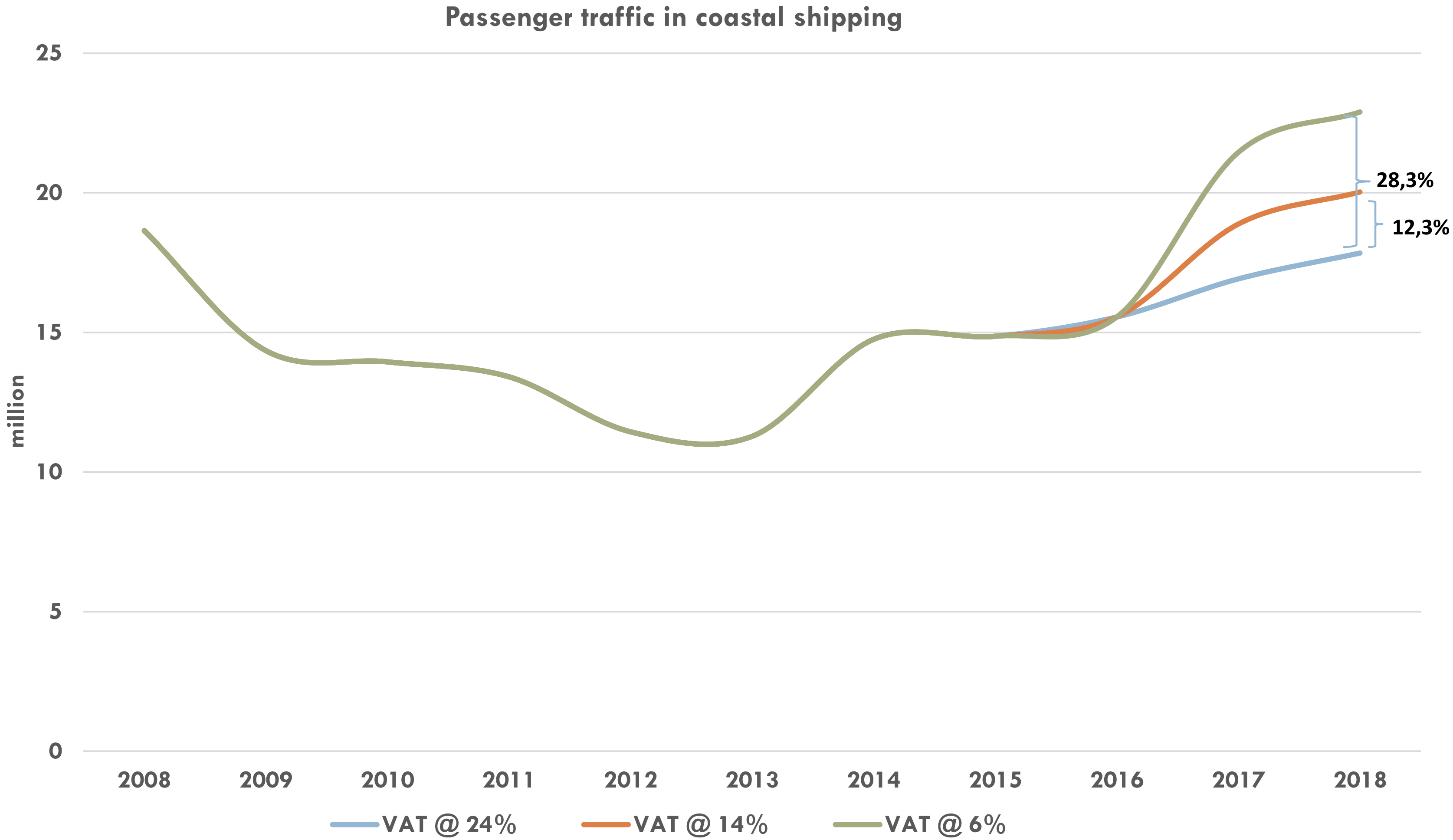
Source: Civil Aviation Authority **Data processing:** IOBE

- Fraport AG operates the Frankfurt International Airport, which is one of the major global air transportation hubs
- Most passenger traffic in the Greek regional airports operated by Fraport concerns inbound tourism from abroad
- Only 3 airports (Thessaloniki, Aktio, Kavala) are located in the mainland
- The total number of passengers in 2016 (arrivals and departures) in the 14 airports stood at 24.8 million (or 47% of total airport passenger traffic in Greece)
  - International passenger traffic represents 73% of total traffic

However, the freight transport with coastal shipping is expected to be affected positively

3.2 VAT impact

The reduction of the VAT rate is expected to stimulate demand, with benefits to the economy of the islands



Source: ELSTAT, IOBE estimations

VAT at a reduced rate of 14%, provided that the tax reductions will pass to the ticket prices, would increase passenger traffic by 12% in 2018, whereas a VAT rate of 6% could increase passenger traffic by 28%

Increased demand for coastal shipping services leads to higher expenditure in the economy of the island regions

Estimation of the revenues from a potential VAT reduced rate of 14% and 6%, 2017-18

Scenario	Additional passengers (in million)	Additional revenues for the shipping companies (€ million)	Additional tourism expenditure (€ million)	Additional GDP in the islands (€ million)	Additional man-years in the islands (thousand)	Change in VAT revenues from ticket sales (€ million)	VAT from additional visitors (€ million)
VAT 14%	2.0	€95	€778	€1070	17.9	-€72.4	€123
VAT 6%	4.8	€220	€1797	€2472	41.5	-€53.4	€284

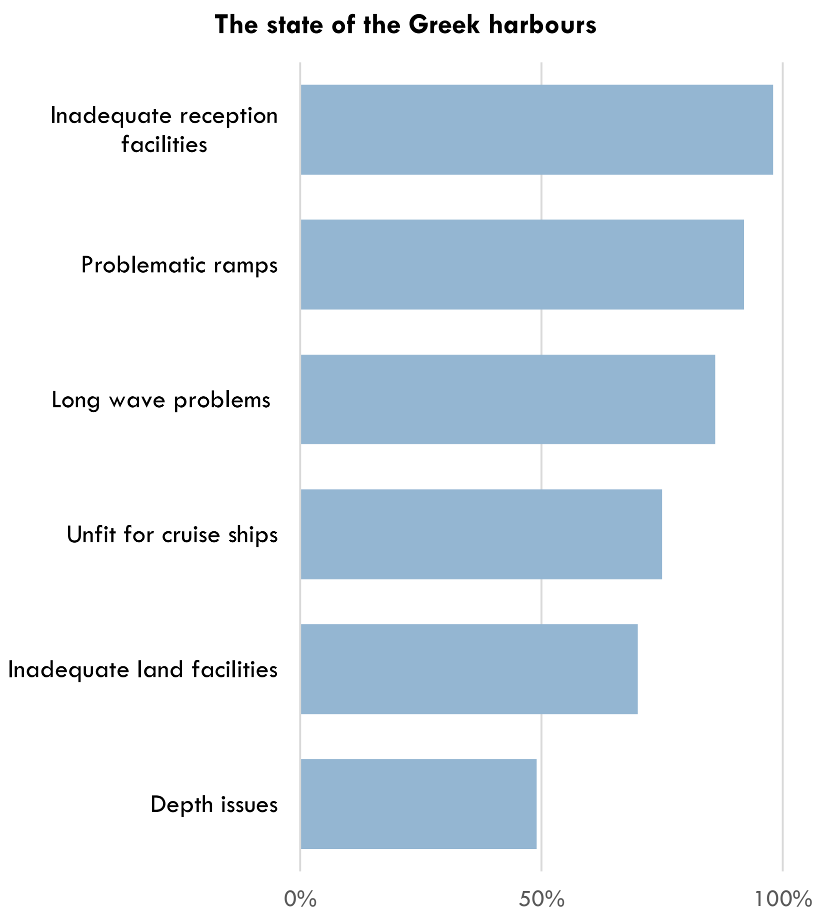
Source: IOBE estimations

- The additional revenues to passenger shipping companies from reducing the VAT rate to 14% are estimated to total €95 million in 2017 and 2018
  - Doubled in case of a VAT at a reduced rate of 6%
- Tourism expenditure in islands grows by €778 million with VAT of 14% and by €1.8 billion for VAT at 6%
- Considering the economic interdependencies between the sectors, the GDP in the island economies is higher by €1 billion and €2.5 billion respectively
- VAT reduction has a positive effect on the labor market, creating 18,000 to 42,000 jobs
- The gain in terms of VAT revenue from the additional visitor expenditure outweighs the VAT revenue losses on the tickets*

(*) Provided that the additional expenditure is not replacing expenditure in other domestic destinations and tax evasion does not exceed 60% of the potential VAT revenues in the islands

3.3 Other structural and regulatory issues

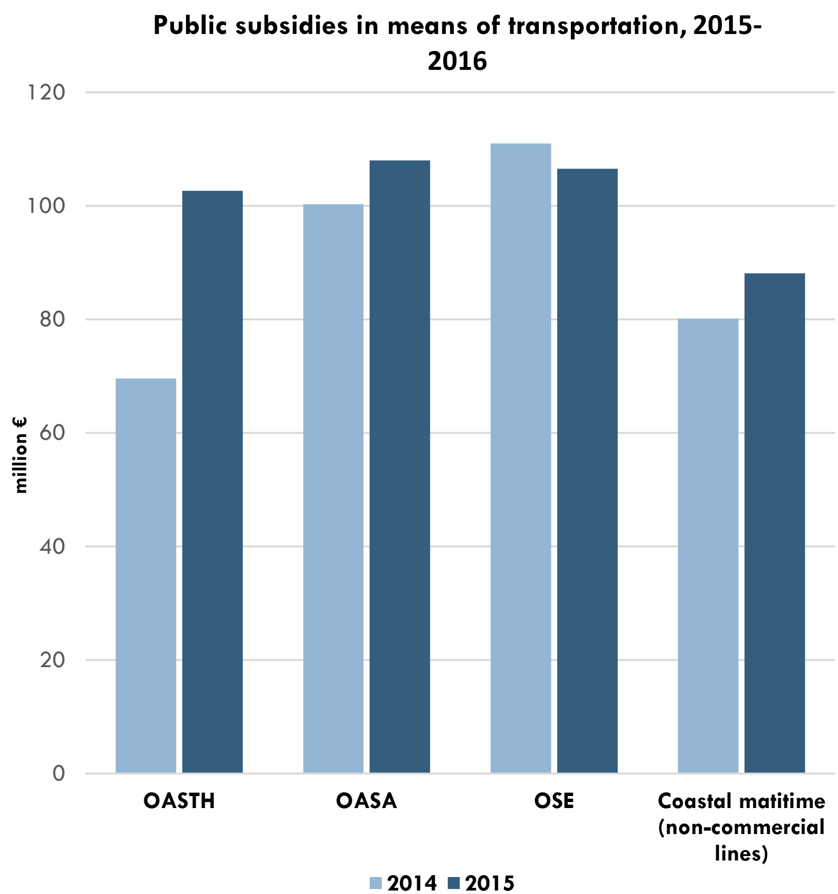
The port infrastructure in the Greek islands remains an issue



Source: Laboratory of Harbour Works, NTUA

- The downgraded port infrastructure is an important problem for the sector
- Almost all Greek ports have inadequate reception facilities, while nine out of ten have problematic shore ramps
- Depth issues are encountered at almost half of the existing ports, hindering calls by new, modern coastal shipping vessels
- Despite the downgraded port infrastructure, significant surcharges incur for passengers and vehicles traffic
  - Approximately €31.2 million from all Greek ports in 2016

The state subsidies of the coastal shipping sector are lower compared to other transport operators



Source: Ministry of Finance **Data processing:** IOBE

- According to the State Budget, the amount of public subsidies to OASTH, OASA and OSE stood at €281.8 million in 2014
  - Higher by 12.5% in 2015 (to €317.2 million)
- In contrast, the subsidies for non-commercial lines by the Ministry of Maritime Affairs stood at €80.1 million in 2014 and €88.1 in 2015
  - Approximately 25% of the total transport subsidies

New major challenges for the Greek coastal shipping sector

- Obligation to adopt new **shipping fuel technology** by 2020 due to environmental regulations
  - This will result in higher operating costs of the vessels, due to the higher cost of the new fuel or the cost for the necessary ship modifications
  - The new regulations will have a significant impact on shipbuilding costs

4. Conclusions

Conclusions (1/3)

- Changes in the external environment over the past two years have favoured the passenger shipping industry
  - GDP remained unchanged between 2014 and 2016, following the deep recession
  - Gradual decline of unemployment
  - Increase of international tourist arrivals
  - Oil prices remained at relatively low levels
- The demand for coastal shipping services recovers gradually, following the decline during the previous years
  - In 2016, passenger traffic in domestic routes increased by 1.6% (or 255,000) compared to the previous year
  - The growth is stronger in vehicle traffic (+13%)
- The operation of the coastal shipping sector is positively affected by disposable income and international airport arrivals
  - Negative relationship with ticket prices and domestic airport arrivals
  - In many island destinations the increased arrivals at the airports was accompanied by an increase of freight volumes

Conclusions (2/3)

- The coastal maritime sector provides a vital link of the islands with the mainland
  - It is the main means of transportation with the islands, even in destinations with airports
  - Freight transportation to and from the islands relies mainly on coastal shipping services
- The contribution of the coastal maritime sector to the Greek economy is substantial, with significant economic implications for the islands
  - It contributes with passenger and vehicle transportation, facilitating other sectors of economic activity, mainly in the islands of the country
  - In terms of GDP, the contribution from the demand for coastal transportation services in domestic routes is estimated at €1.5 billion in 2016
  - Considering the catalytic effects as well, the total contribution of the domestic coastal shipping sector is estimated at 7.3% of GDP in 2016 (€12.9 billion)
- Overall, the contribution of the passenger shipping sector, including the operation in the Adriatic sea routes, is estimated at 9.2% of GDP in 2016

Conclusions (3/3)

- Higher fuel cost and high VAT rates on coastal transportation tickets have a negative effect on the transportation cost of passengers and vehicles in Greece
  - The VAT rate increased by 11 percentage points between 2015 and 2016
  - Greece has the second largest VAT rate in sea passenger and vehicles transportation in the EU
    - In Italy, the VAT rate is at 10%
    - The VAT rate is also lower in other EU countries with developed coastal transportation services (for instance, 6% in Sweden)
  - The share of fuel cost in total operating expenses tends to be higher for the Greek passenger shipping companies
    - The increased price of fuel oil observed in 2017 compared to the previous year, may result in losses for the companies
  - A reduction of the VAT rate on passengers and vehicles could strengthen demand, with substantial implications for the Greek economy
    - An increase by 12.3% of the demand for coastal transportation services in case the low VAT rate (14%) is applied
      - The economy of the island regions could benefit from €1.0 billion in GDP terms and 18,000 jobs
    - A VAT rate of 6% is estimated to increase demand for coastal shipping by 28.3%
      - Higher GDP by €2.5 billion and 42,000 additional jobs
    - Prerequisite: full pass-through of the tax reduction to the ticket prices

Appendix

Results from the regression analysis

Passengers

Dependent Variable	
Ticket price	-1,401*** (0,226)
Demand for tickets with a single period lag	0,238*** (0,037)
Disposable income	0,798***0,132)
Constant	11,59***(1,153)
D_2009-2013	-0,278***(0,037)
D_Mar	
D_Apr	
D_May	
D_Jun	0,195***(0,058)
D_Jul	0,648***(0,057)
D_Aug	0,676***(0,059)
D_Nov	
D_Dec	
Domestic arrivals	-0,156***(0,042)
International arrivals	0,283***(0,034)
R^2	0,917
Mean VIF	2,98

Note: Standard error in the parenthesis *** The hypothesis that the estimated coefficient is non-statistically significant is rejected at 1% level of significance. ** The hypothesis that the estimated coefficient is non-statistically significant is rejected at 5% level of significance * The hypothesis that the estimated coefficient is non-statistically significant is rejected at 10% or higher level of significance.

Vehicles

Dependent Variable	Model 1 (All types of vehicles)	Model 2 (Cars)	Model 3 (Trucks)
Total arrivals at the airports	0,438*** (0,087)	0,521*** (0,102)	0,317*** (0,088)
Ticket price for coastal transportation services	-0,125 (0,492)	0,092 (0,578)	-
GDP	1,175*** (0,117)	1,574*** (0,138)	0,383 *** (0,112)
Constant	-5,036 (3,335)	-11,868*** (3,914)	3,416 (2,231)
R^2	0,81	0,85	0,36

Note: Standard error in the parenthesis *** The hypothesis that the estimated coefficient is non-statistically significant is rejected at 1% level of significance. ** The hypothesis that the estimated coefficient is non-statistically significant is rejected at 5% level of significance * The hypothesis that the estimated coefficient is non-statistically significant is rejected at 10% or higher level of significance.