



## *Cruise industry: A sector with potential revenues of €2bn*

- Cruise tourism is among the world's fast growing sectors, as the number of cruise passengers worldwide doubled during the past decade to over 20 million in 2011.
- Our empirical work indicates that the driving force behind this growth is the increase in income per capita globally combined with more competitive pricing of cruise packages achieved largely through economies of scale.
- Within this growth story, the Mediterranean is a key destination, as it boosted its share in the global cruise market to 21 per cent in 2009 from 15 per cent in 2004.
- The most popular destinations in Europe are Italy, Spain and Greece, each of which attracts some 2-2.5 million tourists each year to this sector.
- Although Greece is a highly attractive destination for cruises, it has not managed to capture the tourist revenue that it could, because Greek ports are not used as home ports for cruise ships due to their low competitiveness but mainly as ports of call. This shortcoming is crucial to the sector's development, as average expenditure per passenger (by the passenger and the cruise line) is around €600 in home ports and roughly €80 in ports-of-call.
- Based on our model, we estimate that global demand will exceed 30 million cruise tourists in 2016. If this is realized and Greece retains its share in the global cruise market, annual revenues from cruise tourism will exceed €0.9 billion in 2016 (from €0.6 billion in 2011).
- However, over the next five years Greece could secure even greater gains – better reflecting its natural comparative advantages – if a number of significant structural distortions are removed. The full liberalisation of cabotage combined with investment programmes for ports (mainly in Piraeus) are initiatives in the right direction. But it is also necessary to:
  - ✓ promote concession agreements for the management of cruise terminals as well as the upgrade of facilities in less developed ports
  - ✓ enhance competitiveness in ship repair and bunkering services, and
  - ✓ formulate a strategy that ensures the smooth arrival of tourists so as to avoid delays that could damage the growth prospects of the industry
- Under the scenario of increased home porting whereby 2/3 of cruise passengers visiting Greece would actually start their cruise from a Greek port, the above mentioned increase in global demand could potentially boost annual revenue for the cruise sector in Greece to as much as €2 billion in 2016 from €0.6 billion in 2011.

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Cruise tourism is a fast growing industry globally. Worldwide, the number of cruise tourists exceeded 20 million in 2011 (around 2 per cent of total tourist arrivals), posting average annual growth of 8 per cent over the past 20 years (compared with 4 per cent for tourism overall). On the back of this global growth momentum, Greece should capture significant economic benefits thanks to its natural comparative advantages (natural beauty, archaeology and fine weather). It is notable that the upward trend in demand for cruise tourism during 2009-2011 led to an average annual growth of *circa* 15 per cent in cruise passenger traffic in the port of Piraeus, albeit as a port of call.

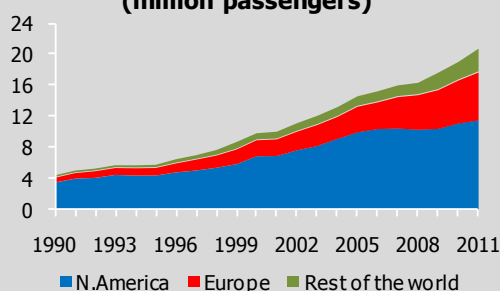
### 1. The global cruise market

Global demand is largely driven by the North American market (USA and Canada) – the place of origin of 60 per cent of cruise passengers. However, European tourists (mainly from the UK and Germany) have been steadily gaining market share (30 per cent in 2011, from 21 per cent in 2000 and 14 per cent in 1990). Moreover, Europe as an origin of cruise tourists presents significant potential for further growth, as cruise tourism has a low penetration rate in Europe (around 1.5 per cent of the population in the key European markets). Note that the penetration rate in North America (where there is greater familiarity with this particular form of tourism) is 3.3 per cent and thus is closer to its saturation point. In addition, it is worth mentioning that Asian countries (which account for 7 per cent of global demand) also present significant growth potential in the years ahead, as cruise passengers currently represent just 0.04 per cent of the respective population.

As a result of the recent surge in demand, the ratio of cruise accommodations to total tourist accommodation capacity grew to 0.9 per cent in 2010 from 0.6 per cent in 2000. As occupancy and nights spent are higher on cruise ships than at hotels, the contribution of the cruise industry to total tourism demand reached 3 per cent in 2010 compared with 1.9 per cent in 2000. In addition, because of the higher revenues generated per day by cruise tourists versus other tourists (with the gap steadily declining over the years), the ratio of cruise receipts to total tourism receipts rose to 3.6 per cent in 2010 from 2.7 per cent in 2000.

The key driving forces behind this growth have been the increase in

**Global Cruise Demand  
(million passengers)**

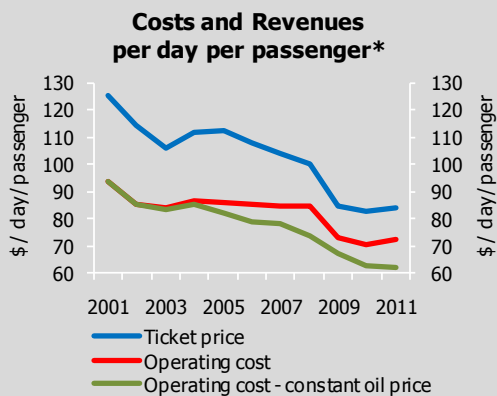


Source: European Cruise Council, PSA, Cruise Market Watch

**Global Cruise Market**

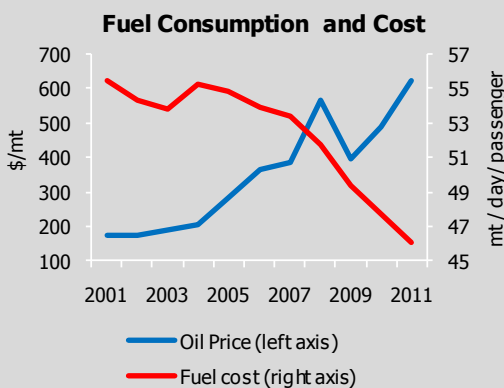
	Cruises		Tourism total		% cruises in tourism	
	2010	2010	2010	2010	2010	2000
Tourists (mil.)	18.9	940	2.0%	1.4%		
Available beds (mil.)	0.4	46	0.9%	0.6%		
Demand (mil. nights)	140	4,720	3.0%	1.9%		
Average number of nights	7	5				
Total revenue (\$ mil.)	33	919	3.6%	2.7%		
Revenue per night per passenger (\$)	236	195				

Source: UNWTO, G.P. Wild, Cruise Market Watch, ISL Cruise Ship Register, Cruise company reports, NBG estimates.

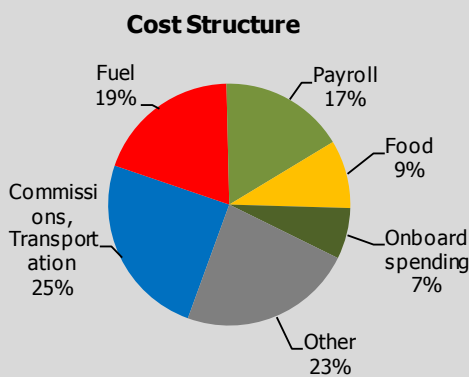


\* in real terms (deflated)

Source: Cruise companies' annual reports, NBG estimates



Source: Cruise companies' annual reports, NBG estimates



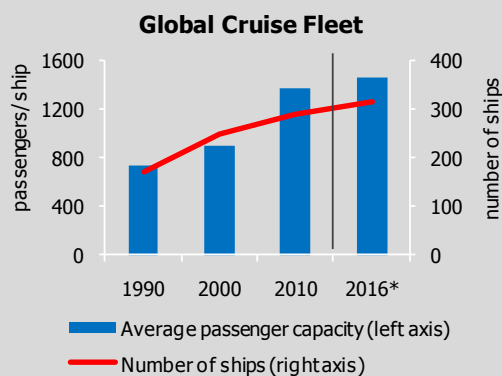
Source: Cruise companies' annual reports,

global income per capita as well as the downward trend in the relative price of cruise packages versus other holiday options. Our estimates indicate that the doubling of global demand for cruise holidays over the past 15 years was mainly due (by 60 per cent) to the fall in cruise prices relative to hotel prices (down 35 per cent between 1995 and 2010) and secondarily due (by 40 per cent) to the increase in global income per capita in constant prices (up 22 per cent over the same period).

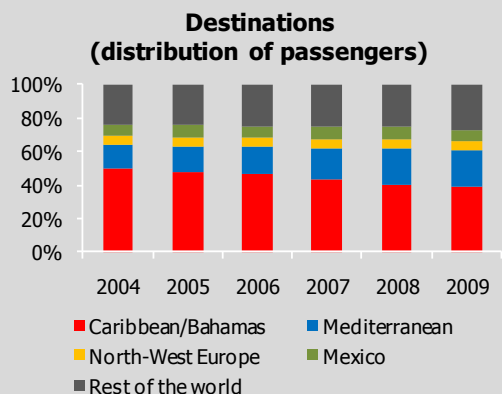
The decrease in cruise prices has been achieved largely through economies of scale. The growing demand for cruise services has been met not only by increasing the number of ships, but mainly by increasing their size. Specifically, the international cruise market in 2010 was served by 290 ships with an average capacity of 1,400 passengers per ship (compared with 250 ships with an average capacity of 900 passengers per ship in 2000) and an average age of 18 years. Supply is largely concentrated in two cruise lines (Carnival and Royal Caribbean Cruises), which control 1/2 of the cruise fleet in terms of number of vessels. However, as their ships are younger (11 years on average) and larger (circa 2,000 passengers per ship), these two cruise lines account for 70 per cent of global capacity, with a strong presence in both America and Europe.

A cost analysis of the two largest cruise lines reveals the impact of economies of scale achieved by restructuring the fleet. Specifically, daily operating costs (excluding fuel) have remained unchanged in nominal terms at circa \$115/passenger over the past decade. In real terms (deflated), this translates into a 30 per cent price decrease. On the other hand, despite improved efficiency (as reflected in lower fuel consumption per passenger), the steep increase in oil prices has pushed up the daily cost of fuel to \$30/passenger in 2011 from \$10/passenger in 2001. As a result, the fuel component in total operating costs was close to 20 per cent in 2011 as compared with 9 per cent in 2001. Nevertheless, cruise lines absorbed the surge in oil prices and passed through the reduction in real terms of other operating costs, almost entirely, to passengers. Thus, the daily fare per passenger remained close to \$170 throughout the decade (in deflated terms, a 30 per cent decrease).

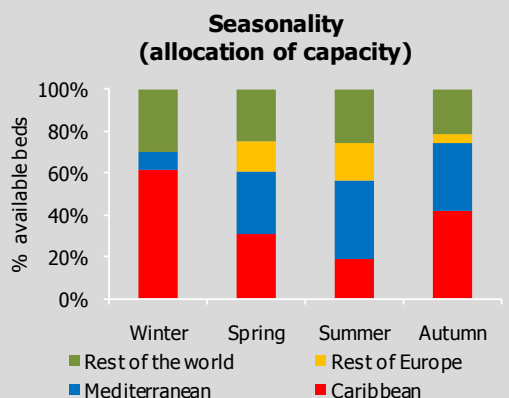
Note that the trend to build cruise ships of greater capacity is



Source: ISL Cruise Register, ECC estimates



Source: Republic of South Africa/Cruise Industry News



Source: World Tourism Organisation, NBG estimates

forecast to continue, as there are currently orders for 24 new ships for the period 2012-2016, with an average capacity of 2,800 passengers per ship. Accordingly, it is likely that economies of scale will continue to impact, and thus help contain prices.

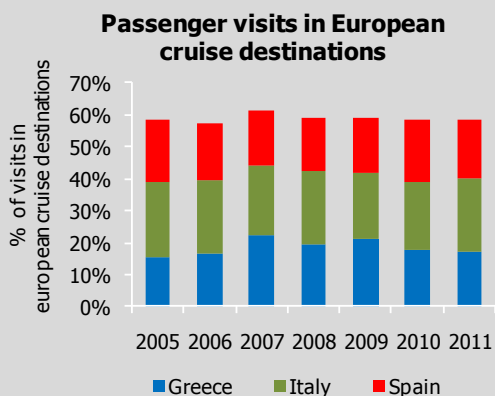
The main cruise destinations are the Caribbean and the Mediterranean, which together capture more than 60 per cent of cruise passengers. It is notable that in the past five years the market share of the Mediterranean has increased, reaching 21 per cent in 2009 (vs. 15 per cent in 2004). The reverse has occurred in the Caribbean market (40 per cent in 2009, from 50 per cent in 2004), though it continues to be the most popular cruise destination, attracting mainly American passengers. These two destinations present certain differences:

- First, the allocation of the cruise fleet capacity between the two regions is marked by different seasonal fluctuations. Specifically, the Mediterranean captures a greater percentage of available ship capacity during the summer months (approx. 40 per cent, versus less than 20 per cent in the Caribbean). The Caribbean is favoured as a destination in the other months of the year, the greatest share being in the winter (over 60 per cent), when the Mediterranean posts its lowest performance (less than 10 per cent).
- In addition, the average cruise lasts less than a week in the Caribbean, while the average is as much as two weeks in the Mediterranean.

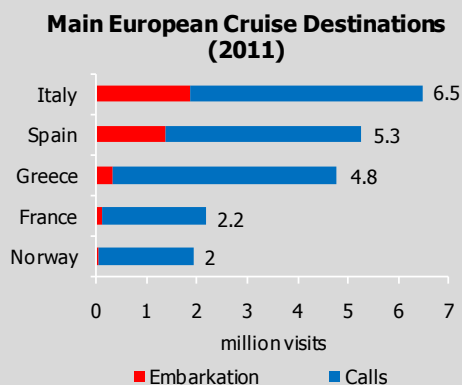
## 2. The European cruise market

Up to 200 cruise ships were active in the European market in 2011 (60 per cent of the world cruise fleet capacity), with an average ship capacity of 1,200 passengers per ship. The vast majority of cruise passengers who chose European destinations visited Mediterranean ports (75 per cent), while the rest visited ports in Northern Europe and the Atlantic. Note that almost ½ of the cruise passengers in the Mediterranean come from North America (USA and Canada), while Europeans travelling in the Mediterranean come mainly from the UK and Italy (each country representing 10 per cent of passenger demand for cruises in the Mediterranean).

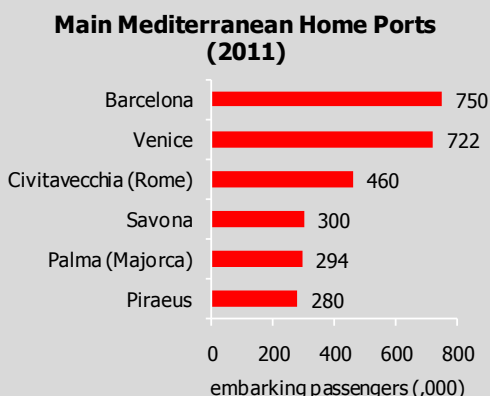
Italy, Spain and Greece are the three leading cruise destinations,



Source: European Cruise Council, NBG calculations



Source: European Cruise Council, NBG calculations



Source: European Cruise Council

whose share of the European cruise market has stood consistently at 60 per cent. Specifically, each of these 3 Mediterranean countries hosts 5-6.5 million visits by cruise tourists annually. Given that each tourist visits 2-3 ports per country, each country attracts around 2-2.5 million cruise tourists. This figure represents 11 per cent of the total number of foreign tourists visiting Greece (2 million cruise passengers and 16 million other arrivals). The respective rate for Italy is nearly 6 per cent and for Spain 4 per cent.

Although Greece holds first place as a port-of-call<sup>1</sup>, it ranks third (after Italy and Spain) in respect of total cruise passenger visits (see graph). During the period 2007-2009, the number of visits to Greek ports was nearly as high as that to Italian ports (attracting over 1/5 of the total visits to European ports). However, this increase in market share was not sustained in the following years, partly because of disturbances in the smooth operation of the Greek ports.

The low competitiveness of Greek ports is reflected in the fact that they are not generally used by cruise operators as home ports. Specifically, only 16 per cent of cruise passengers visiting Greece embarked from a Greek port in 2011 (while the respective rate is estimated at around 3/4 in Italy and Spain). In this context, Piraeus ranks 6<sup>th</sup> with 280,000 passenger embarkations. Note that the two leading home ports for Mediterranean cruises are Barcelona and Venice (each attracting about 750,000 passengers in 2011).

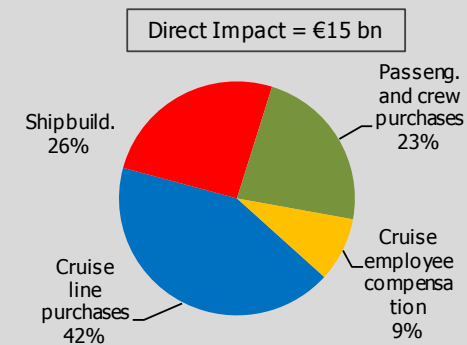
### 3. The contribution of the cruise industry to the Greek economy

The cruise industry generated an estimated €15 billion in direct expenditures in Europe in 2011 (vs. €8.5 billion in 2005). Italy accounted for 30 per cent of such expenditures, Spain 9 per cent and Greece only 4 per cent (expenditures of circa €600 million, corresponding to 0.3 per cent of GDP and 5.2 per cent of total tourist spending).

The fact that the benefit to the Greek economy from the cruise industry is relatively low, despite the country's popularity as a

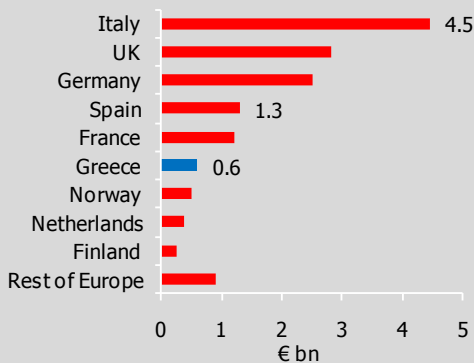
<sup>1</sup> The popularity of Greece as a cruise destination was reflected by the fact that the Greek islands were awarded the distinction of Best Mediterranean Destination 2010 (specifically for the route Rome – Irakleio, Santorini, Mykonos, Kos) by Cruises News Media Group. 150 tour operators and 12,000 passengers voted on the basis of the following criteria: destination quality, port infrastructure, cities, sightseeing, nearby tours, food and other.

### Direct Cruise Industry Expenditures in Europe (2011)



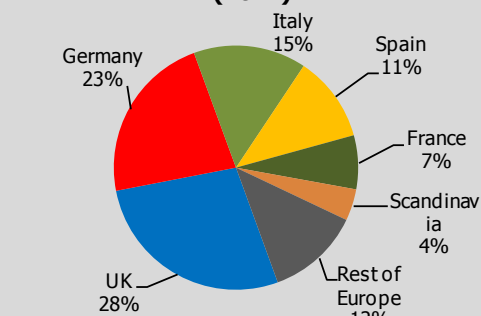
Source: European Cruise Council

### Direct Cruise Industry Expenditures in Europe (2011)



Source: European Cruise Council

### European cruise passengers\* (2011)



\* with both european and non-european destinations

Source: European Cruise Council

cruise destination (capturing 17 per cent of visits to European ports) is partly due to two structural barriers which are difficult to overcome:

- Cruise shipbuilding (which accounts for 26 per cent of total cruise industry expenditures in Europe) is essentially nonexistent in Greece. This activity is mainly concentrated in Italy and Germany, which reap ½ of the above mentioned expenditures, while in Greece such activities are confined to ship maintenance and minor repairs.
- The low share of Greek passengers in European demand for cruises to European and non-European destinations (around 1 per cent) also limits the expenditures that Greece can capture from the cruise sector. Specifically, the bulk of expenditures gained by European economies from cruise lines (circa 35 per cent of lines' expenditures) concerns activities in the countries from which the passengers originate (e.g. advertising, travel agent commissions, market research). Note that the U.K. and Germany are the two largest source markets for cruise passengers (more than half of European demand).

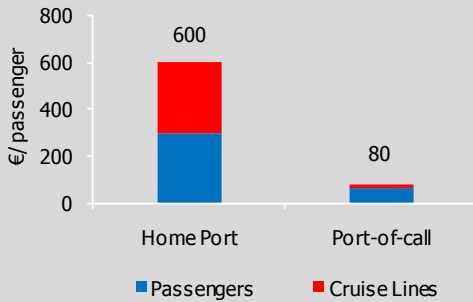
The overall impact of these factors excludes Greece from activities that generate nearly ½ of European expenditure by the cruise industry.

However, besides the factors outlined above, Greece has not even managed to capture the tourism revenue that it could as a highly popular cruise destination. Specifically, Greek ports are mainly ports-of-call, not home ports; accordingly, passenger and cruise line spending in Greece underperforms as:

- Cruise lines usually use home ports as their base for the provision of fuel, food and other equipment and where they carry out the bulk of ship repairs. We estimate that average expenditure per passenger is around €300 in home ports (of which two thirds concern fuel cost) versus approx. €20 in ports-of-call (mainly port fees).
- In addition, passengers require accommodation services in home ports (usually for at least 1-day pre- or post-cruise stay), thus countries where home ports are located reap additional benefits through airfares (airport fees and likely income for domestic air lines). Assuming that almost all cruise

passengers arrive by plane to Greece as a home port and half also stay over one night, we estimate that average spending per passenger in home ports is around €300 (including other spending by tourists in the country). By contrast, passenger visits to ports-of-call (calls) are of short duration (4 to 6 hours). On the basis of European data and our estimates, average spending per passenger is around €60 and mainly concerns food, tourist items, transportation and sightseeing.

**Expenditure per type of port (€/passenger)**



Source: European Cruise Council, NBG estimates

Accordingly, if the part of cruise tourists who just pass through Greece (i.e. excluding those that already embark from Greek ports) started their cruise from a Greek port (approximately 1.5 million annually), the additional revenues for Greece would be substantial. Some of these revenues would derive directly from passenger spending, while improvements in the infrastructure and services supplied to cruise lines is essential as well to increase their spending. Thus, combining these two effects (€280/passenger + €240/passenger = €520/passenger), additional revenue could reach €800 million annually in the event that the above mentioned 1.5 million tourists embarked at a Greek port.

#### 4. The domestic cruise sector presents significant growth prospects

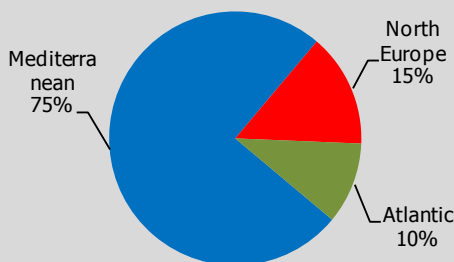
In the years ahead, the cruise industry in Greece could benefit from the following two factors: (i) the increase in global demand and (ii) promotion of home porting at Greek ports. Under these perspectives, we have estimated three alternative scenarios for the course of the Greek cruise sector over the next 5 years:

##### ➤ Scenario 1: Growth in global demand

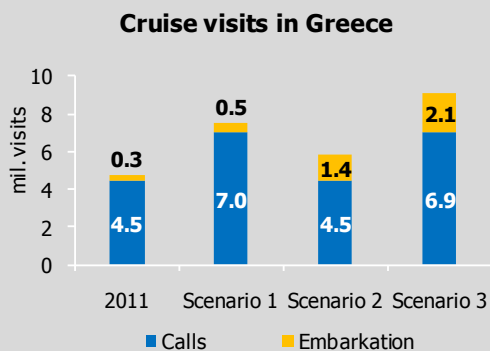
In line with our model (as described in the first section) and on the assumption that (i) per capita income at constant prices continues to grow internationally by an average of 2 per cent over the next 5 years, (ii) cruise prices in nominal terms remain at current levels (as economies of scale are likely to improve further, see p. 2), and (iii) hotel prices in nominal terms keep rising at their average long-term rate (3 per cent p.a.), we estimate that global demand will exceed 30 million passengers in 2016 (versus 20 million in 2011).

If Greece manages to keep its share of the global cruise market unchanged, it would benefit from the increase in global demand

**European Cruise Destinations**

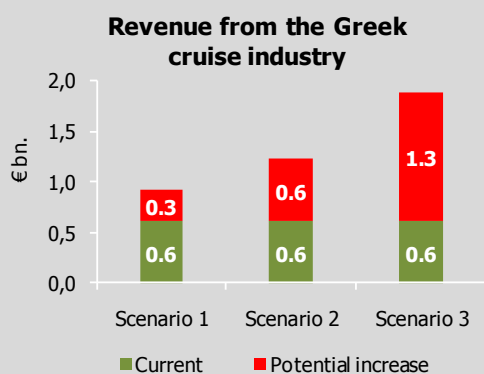


Source: Policy Research Corporation



Scenario 1: Growth in global cruise demand  
 Scenario 2: Increase in greek home porting  
 Scenario 3: Growth in demand + home porting

Source: European Cruise Council, NBG estimates



Scenario 1: Growth in global cruise demand  
 Scenario 2: Increase in greek home porting  
 Scenario 3: Growth in demand + home porting

Source: European Cruise Council, NBG estimates

capturing 7.5 million visits in 2016, versus 5 million visits on average in the 3-year period 2009-2011<sup>2</sup> (corresponding to an increase from 2 million to 3 million passengers). On the basis of the current situation (only 16 per cent of cruise passengers in Greece embark from Greek ports), the growth in cruise passenger traffic could boost the annual revenues of the industry by around €300 million over a five-year period (an additional 2.5 million visits due to port-of-call stops with a revenue of €80/calls, and an extra 200,000 embarking passengers with a revenue of €600/passenger).

➤ **Scenario 2: Increase in home porting at Greek ports**

Given that spending by passengers and cruise lines is higher in home ports than in ports-of-call, enhancing the role of Greek ports as cruise hubs would significantly boost the sector's revenue potential. If this were to occur, even if global demand remained flat, boosting Greek home porting would still bring about an increase in cruise tourism revenue. Specifically, the impact would be twofold: (i) spending by passengers is higher in home ports than in ports-of-call (see pp. 6-7), and (ii) the increase of home porting would probably lead to increase in port-of-call visits, as an additional Greek destination would most likely be added to cruises starting out from Greece (in other words, while embarking passengers would increase, there would be no decrease in calls). Accordingly, with global demand remaining unchanged, if 2/3 of passengers visiting Greek ports start their cruise from Greece (versus 16 per cent in 2011), 2 million total cruise passengers would correspond to 5.9 million visits and total annual revenue would exceed €1.2 billion, as compared with €605 million in 2011 (circa 1.1 million additional embarking passengers generating an input of €600 per passenger).

➤ **Scenario 3: Increase in global demand and Greek home porting**

In case there is an increase in both global demand (30 million tourists in 2016) and in Greek home porting (i.e. 2/3 of passengers visiting Greece set out from a Greek port), embarking passengers will be circa 2 million in 2016 (from 0.3 million in 2011) while total cruise passengers will exceed 3 million in 2016 (from 2 million in 2011). Under this scenario, the additional benefit amounts to €1.3 billion (an additional 2.4 million calls with revenue of €80 per call

<sup>2</sup> Due to the high variability of Greek cruise data, we take the 3-year period as a reference point.



## Piraeus Port Authority Cruise Investment Plan 2012-2016

Project Description	Budget (€ mil.)
Extension of the southern front of the cruise port	230
Elevated mean of transport on track (monorail)	120
Piraeus Cultural Coast	60
Cruise Passenger Terminal and 5* Hotel	50
Other	10
<b>Total</b>	<b>470</b>

Source: Piraeus Port Authority Investment Plan (2012-2016)

## Main Mediterranean Cruise Ports

	Barcelona	Venice	Civitavecchia	Palma	Piraeus
<b>Cruise Passenger Traffic 2011 (mil. passengers)</b>					
Embarked	750	722	460	294	280
Total traffic	1,907	1,060	1,940	1,135	1,280

### Infrastructure\*

	Barcelona	Venice	Civitavecchia	Palma	Piraeus
Length of quay (km)	2.4	3.3	2.6	2.3	2.8
Berth Capacity	8	16	6	7	9
<i>of which: large ship berths</i>	3-4	4-5	3-4	4	1
Passenger terminals	7	6	5	5	2

### Cruise Terminal Operators

Private companies	Carnival	Other	Carnival MSC RCI	-	-

\* The most preferable benchmark of infrastructure is the length of the quay because the berth capacity depends on the number and the size of ships that arrive simultaneously at the port. Moreover, the definition of large ships may vary between different port authorities.

Source: European Cruise Council, Port Authorities

and an additional 1.8 million embarking passengers with a revenue of €600 per passenger) raising total revenues to around €1.9 billion in 2016 (from €0.6 million in 2011).

To sum up, the additional direct annual benefit for the Greek economy from the cruise sector could be in the range of €0.3 billion to €1.3 billion over the next 5 years, depending on the growth of global demand and Greek home porting. Furthermore, given that the current direct revenue of €0.6 billion corresponds to 12,000 jobs, the aforementioned increase in direct expenditures could have a multiplying effect, creating 10,000-30,000 new jobs (20,000-40,000 jobs in 2016 versus 12,000 in 2011).

## 5. The challenges for the Greek cruise industry

At this point it is important to note that both the growth of home porting and the ability of Greek cruise destinations to reap the benefits of increased demand require uneventful business conditions and adequate infrastructure.

To this end, we underline two **positive developments**:

- In April 2012, the full liberalization of cabotage came into legal effect. As a result, cruise lines (whether EU- or non-EU-flagged) are allowed to sail round-trips embarking from and disembarking at Greek ports. Note that similar attempts had been made in the past; however, they failed due to the fact that the cruise lines were obliged to sign contracts that imposed various restrictions (i.e. frequency of visits, duration of berthing, employment of Greek seamen), a practice not required in other Mediterranean ports. This obligation no longer exists, and accordingly Greek ports have become more attractive as home ports for cruise lines.
- The investment plan of the Piraeus Port Authority for the period 2012-2016 includes almost €500 million targeting the cruise sector<sup>3</sup>. Almost ½ of this amount is earmarked for the extension of the cruise port facilities (with 6 new berths for large ships) and the construction of cruise passenger terminals, while the remaining amount will finance other

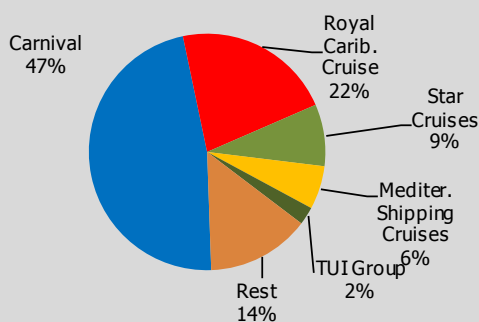
<sup>3</sup> The aforementioned projects will be financed by EU funds combined with private-sector money (through concession agreements).

related infrastructure at the port (a 5-star hotel, a “cultural coast”, a rail link for fast cruise passenger access to the Athens-Piraeus ISAP line and the suburban railway network, etc.). These investments should enhance significantly the competitiveness of Piraeus Port vis-à-vis other large Mediterranean ports (see table).

On the other hand, given that the global cruise industry is controlled by 4-5 large operators that schedule their trips 2-3 years in advance, it is essential that all other remaining **obstacles** be removed:

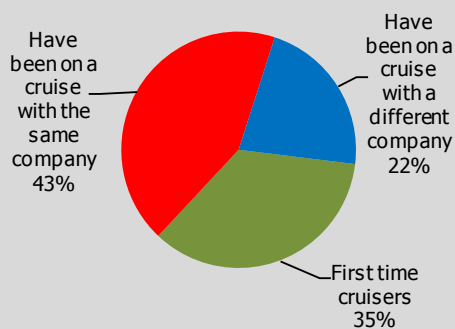
- The inefficient operation of Greek ports damages their competitiveness. According to international practice, ports are controlled by state agencies; however, management of the cruise terminals at the ports is undertaken by private companies, usually the cruise lines themselves (see table). Their participation in the management is secured by means of long-term concession agreements. The implementation of such a formula at Greek ports would thus enable these companies to contribute valuable know-how to the necessary infrastructure investments, as well as the improvement of procedures and operating systems. In addition, the ability of ports to adapt to the needs of specific cruise lines means that a greater volume of passenger traffic can be handled and accordingly more revenue generated for the domestic market. Consequently, it is very important that various legal obstacles in arranging concession agreements are overcome so as to foster the improvements required to enable the domestic cruise sector to tap its full potential.
- A typical example of current operating problems is the lack of a berth allocation system for cruise ships (such as exists at most Mediterranean cruise ports). As a result, ships are berthed on a “first-come first-served” basis, a practice that discourages cruise lines from approaching Greek ports since it poses obstacles to timely and effective route planning.
- The infrastructure at many Greek ports-of-call is unable to service large cruise ships, while other important shortcomings also exist, such as the lack of adequate passenger terminals. Accordingly, there is a significant potential for improving the competitiveness of Greek ports by carrying out investments

**Global Market Share of Cruise Lines (based on capacity)**



Source: ISL Cruise Ship Register

### Cruise passenger profile



Source: Carnival Corporation & plc

that could be financed through BOT agreements (Build, Operate and Transfer).

- To tap the maximum revenue from home porting, better support services are needed to effectively serve cruise lines. Specifically, enhanced competitiveness in areas such as ship repairs, bunkering and other cruise services is a prerequisite for Greek home ports to become hubs for the cruise lines.

Besides addressing the issues outlined above, it is important that a strategy be formulated that ensures the smooth arrival of tourists so as to avoid the delays that could damage the growth prospects of the industry. The lack of such a strategy so far has led cruise lines to cancel arrivals at Greek ports and seek alternative routes abroad, meaning that even current revenues are placed in jeopardy. In addition, strengthening the brand name of Greece in international markets, attracting low-cost or charter airlines, and marketing attractive accommodation packages at Greek hotels could provide a significant stimulus to the sector in Greece. It should be borne in mind that since the cruise sector is controlled by just a small number of lines which desire a stable (i.e. satisfied) clientele, any change in the image of Greek ports – and of our country in general – will most likely have a positive medium-term impact.

In conclusion, the benefits that can be reaped by the Greek economy from further growth of the cruise sector are very significant. However, if the challenges outlined in the foregoing analysis are not met effectively, these benefits will remain on the drawing board.

# SECTORAL REPORT

August 2012



## NATIONAL BANK OF GREECE

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