



Impact Assessment of Greek Shipping on the Economy and Society

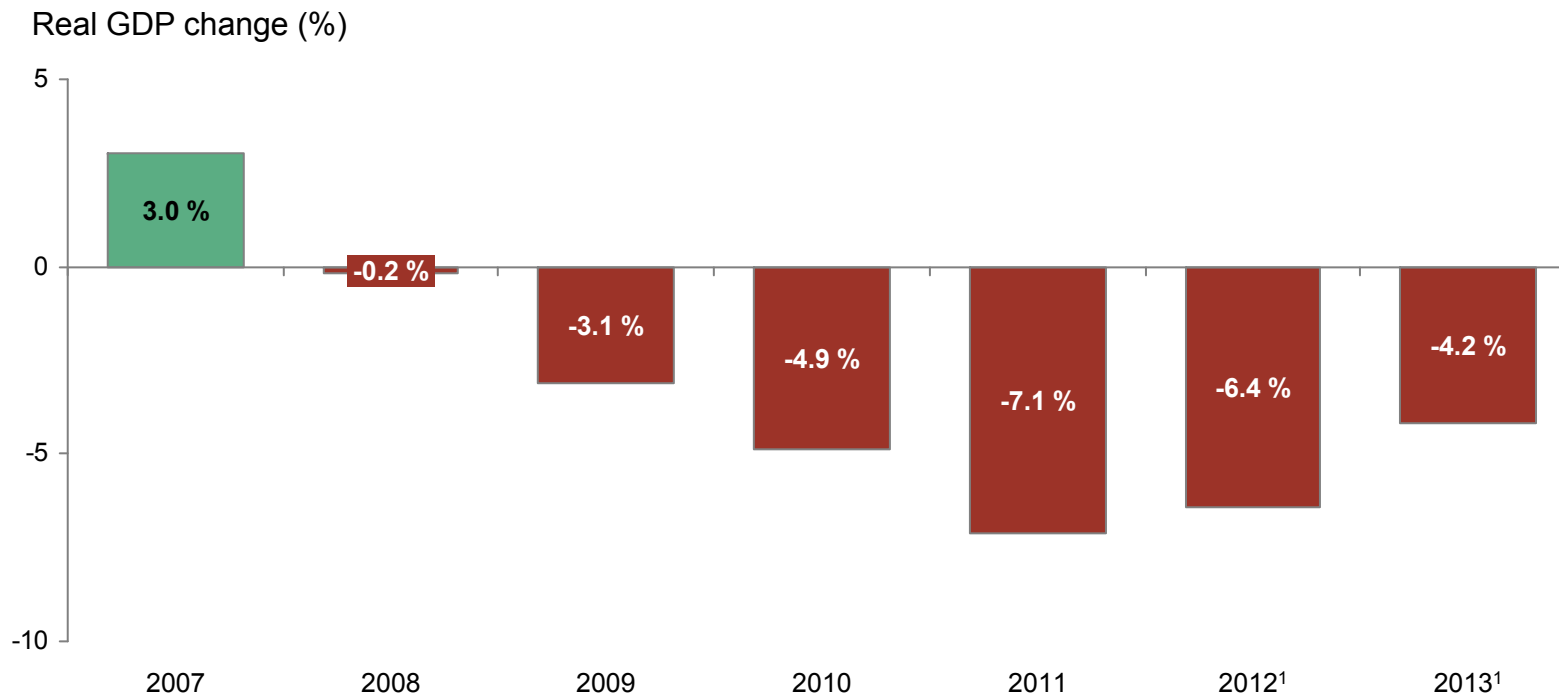
October 2013

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Greece is on the downturn; due to its size, Greek Shipping could become a key growth driver of the Greek economy

Greek economy under protracted recession since 2008

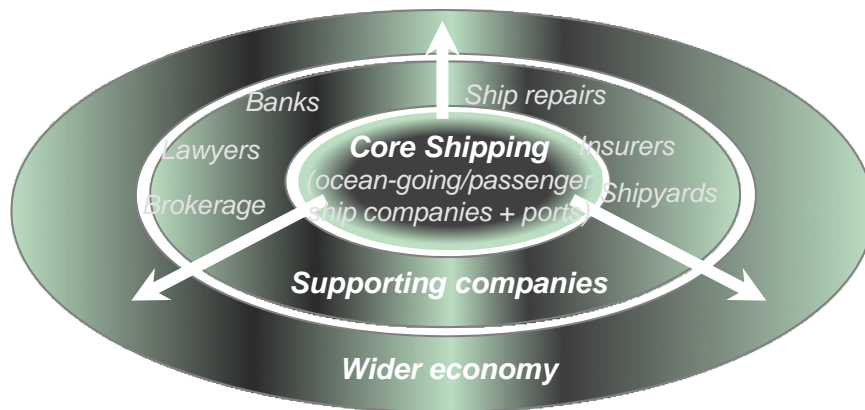


How can Shipping further support the recovery of the Greek economy?

1. Forecast
Source: Eurostat

The study covers the classic impact as well as the broader impact of shipping cluster in Greek economy and society

Classic impact assessment: Economic impact of the shipping cluster itself

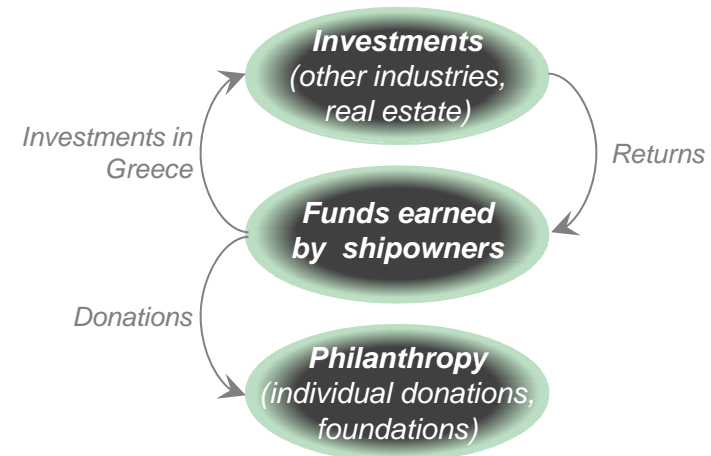


Quantitative study on economic impact of shipping activities

- Contribution to the Greek economy (in €-terms)
- Employment effects

Based on standard econometric model (multipliers derived from Input / Output tables)

Broader impact: Economic and social impact of funds from shipping activities



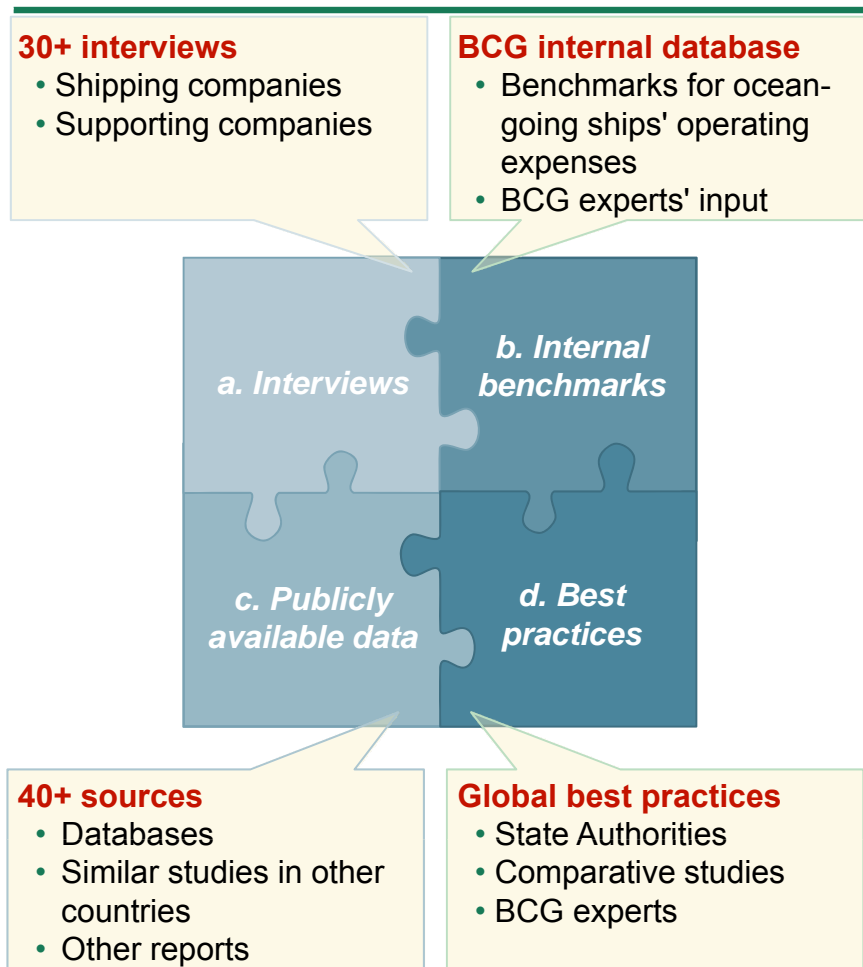
Explorative study of impact generated from funds that have been originally earned from shipping activities

- Investments into other industries
- Philanthropy

Furthermore, the perspective of shipping activities in Greece are part of the study

Impact assessment study based on a comprehensive approach incl. databases, interviews with experts and desk research

Database built based on four different types of sources

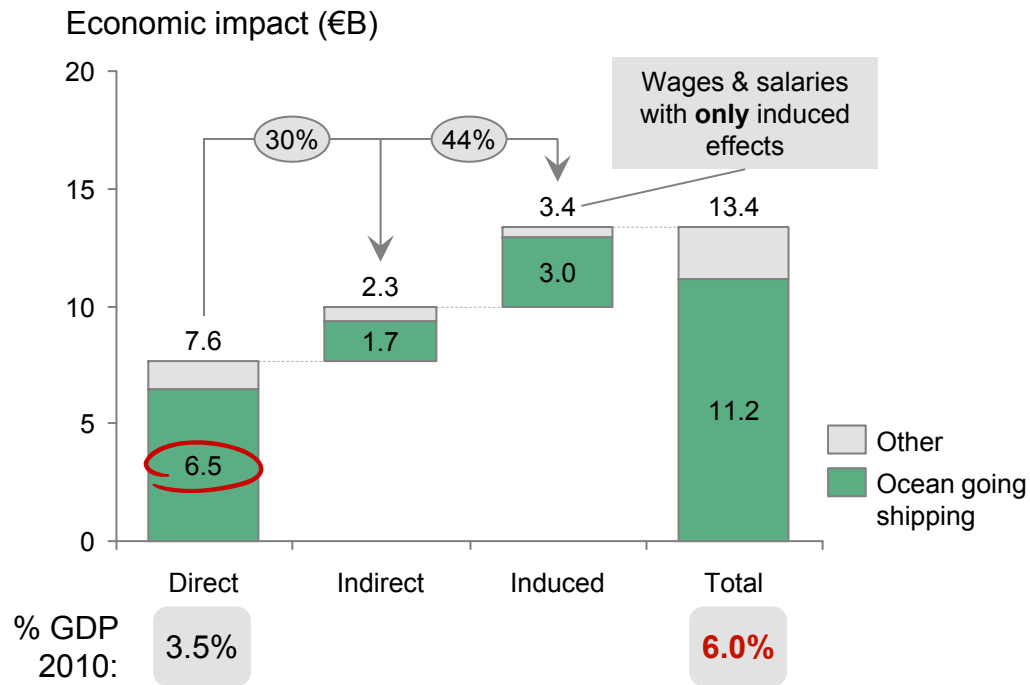


The outcome of the impact assessment study includes 2 elements

- 1 Assessment of the economic and social impact of Greek Shipping cluster**
 - Core Shipping companies (ocean-going, passenger, ports)
 - Supporting companies
 - Wider economy and society
- 2 Recommendations for further developing Greek Shipping cluster in order to enhance its direct impact on the Greek economy**

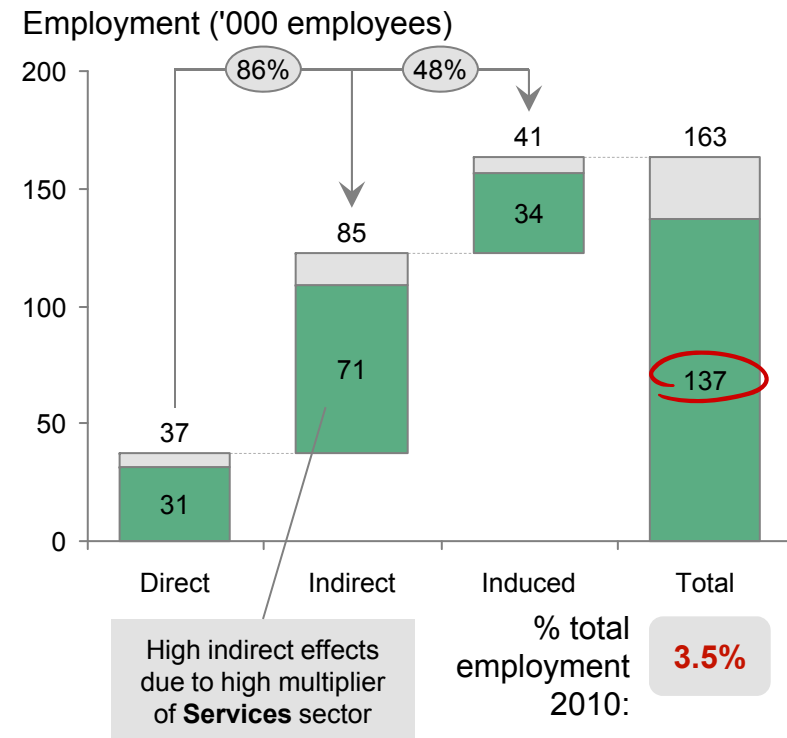
Greek Shipping cluster contributes ~€13.5B to the Greek economy and generates ~ 165,000 jobs

Out of ~€13.5B total impact, €6.5B directly from ocean-going shipping



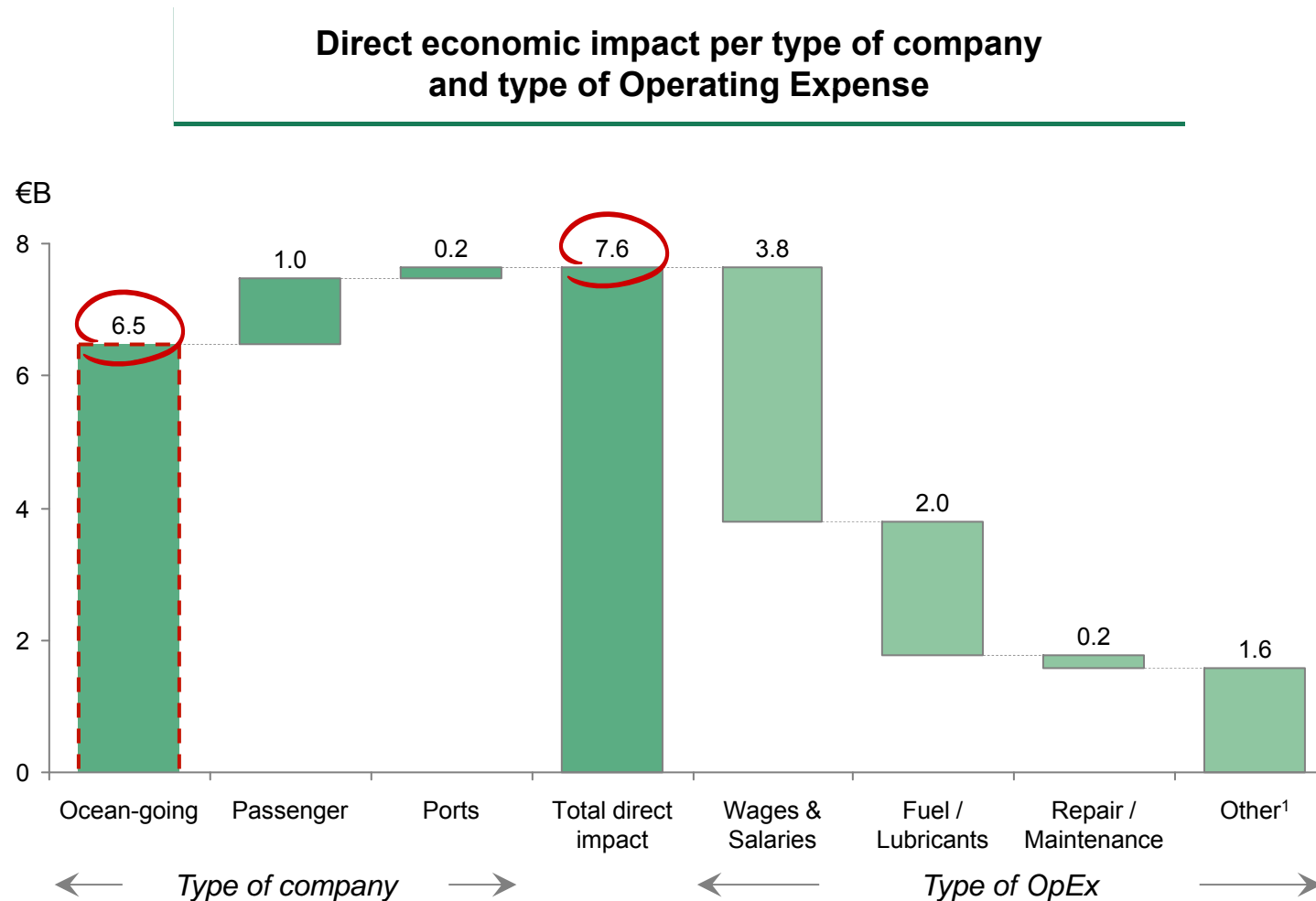
Given the overall GDP contraction over the last years total impact exceeds 7% of economy in 2013

Out of ~165,000 total jobs, ~140,000 people employed by the Greek ocean-going shipping



Previous studies of the sector have estimated more than 200,000 people employed by shipping

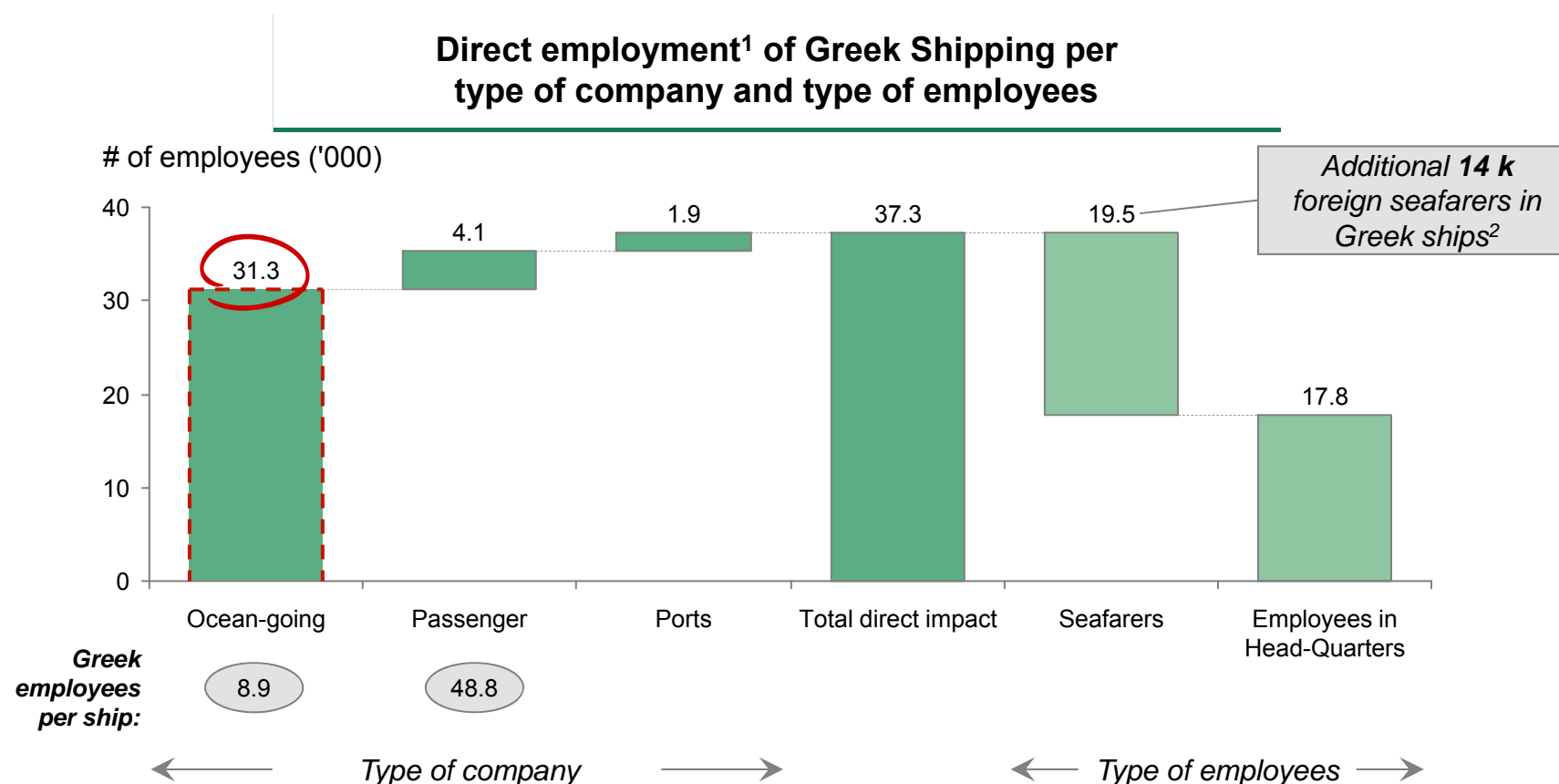
Ocean-going shipping with the highest contribution on the direct impact of the cluster



1. Including Admin expenses, insurance fees, consumables, 3rd party fees, depreciation etc..
Source: Company Annual Reports 2010, analyst reports, Industry experts' interviews, BCG analysis

Ocean-going ship companies drive 85% of direct employment

Almost same allocation of direct employment between on shore and sea



1. Employees that are based or live in Greece 2. Ships under Greek flag or other ships that are affiliated with NAT (Seamen's Pension Fund) – Alpha Bank Economic Bulletin 2009
Source: Company Annual Reports 2010, analyst reports, Industry experts' interviews, BCG analysis

Sea transport sector largest contributor to Greek **Services** **Balance inflows**



Sea transport inflows from Greek Shipping companies' services ...

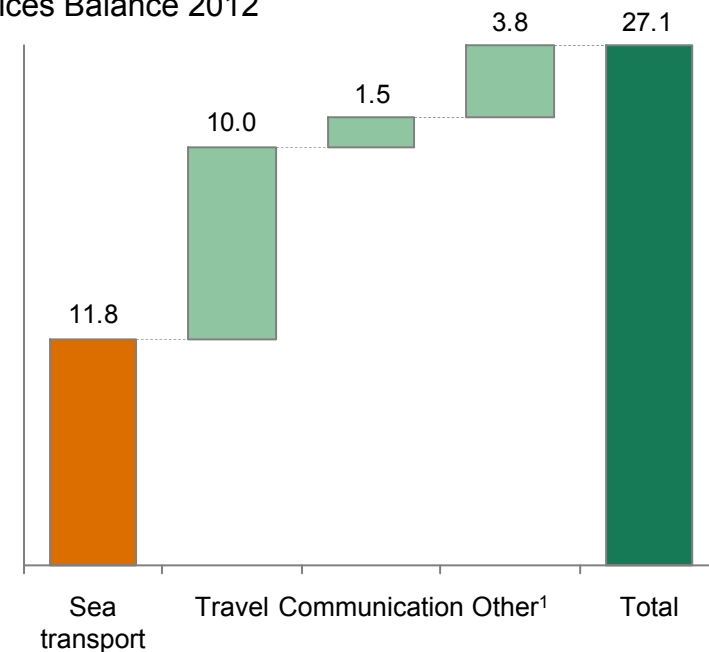
€12-15B annual receipts from sea transport services that are provided to foreigners

- Mainly from revenue generated by Greek shipping companies for transferring cargo across the world on behalf of third parties

€140B cumulative during 2002-2012

... represent the biggest component of **Services Balance (2012)**

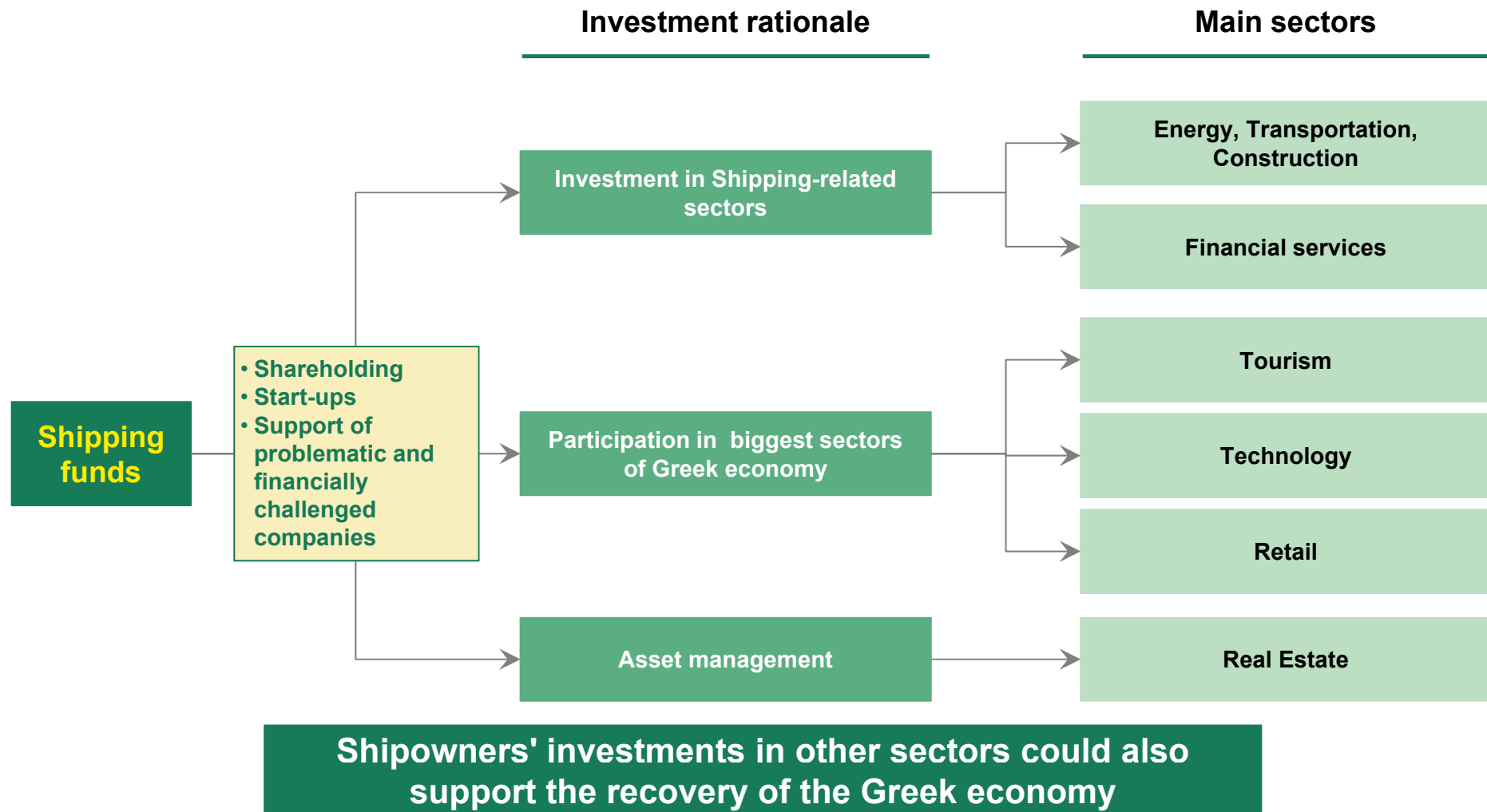
€B inflows (receipts) of Services Balance 2012



**No investment required in Greece
to drive sea transport inflows to Greece**

1. Including Constructions, Insurance, Financial Services, Computer & information etc.
Source: Bank of Greece, BCG analysis

Greek shipowners invest **beyond shipping** in key sectors of the Greek economy



Greek shipowners contribute **further to the society** through three different channels of philanthropic activity

Channels of philanthropic activity

Foundations



Union of Greek Shipowners



Individual donations



Concrete recommendations for enhancing the direct impact coming from Greek Shipping on the country's economy

Recommendations

- 1 Integration of shipping in the long-term national development strategy**
- 2 Increase enrollment in maritime schools in order to increase employment of Greeks in the shipping cluster¹**
- 3 Upgrade educational quality and establish private maritime schools**
- 4 Simplify requirements and processes for start-ups and reduce bureaucracy**
- 5 Stable institutional framework to maintain attractiveness in an increasingly competitive international ship registration environment and to attract further shipping activities**

1. In February 2013, Greek State gave the green light for the establishment of private maritime schools
Source: Press search, Interviews with industry experts, BCG analysis

Summary of the study

Greek-owned fleet is **leading** the **World Cargo Shipping**, being first in total capacity. Furthermore, Greek-owned ships under EU flags are also ranked in the first position with 42.72%¹.

Greek Shipping is a **key growth driver** and could support Greek economy's liquidity, employment, GDP and investments

- It contributes to the Greek economy **€13.4B** (2010 figures), more than **6.0% of Greek GDP**, and **3.5%** of country's **total employment** annually
- The **direct contribution** of Greek ocean going shipping to country's economy is estimated at **€6.5B**
- ~ **165,000 people** are employed in the whole Greek Shipping cluster
- At least **€12-15B annual** contribution to the **Services Balance** – **€140B** contribution **over the past decade**
- Beyond Shipping, Greek ship-owners are **investing shipping funds** traditionally **in other sectors of the Greek economy**, further boosting the country's economic development, and contribute to the society through their **philanthropic activities**

5 concrete recommendations could increase the direct contributions of Greek Shipping to country's economy

- **1.** Long-term national development strategy **2.** Increase enrollment in maritime schools in order to increase employment of Greeks in the shipping cluster **3.** Upgrade educational quality and establish private maritime schools **4.** Simplify requirements and processes for start-ups and reduce bureaucracy **5.** Stable and competitive institutional framework

1. In terms of dwt. Source: Jan 2013, IHS Fairplay World Shipping Encyclopaedia

Appendix

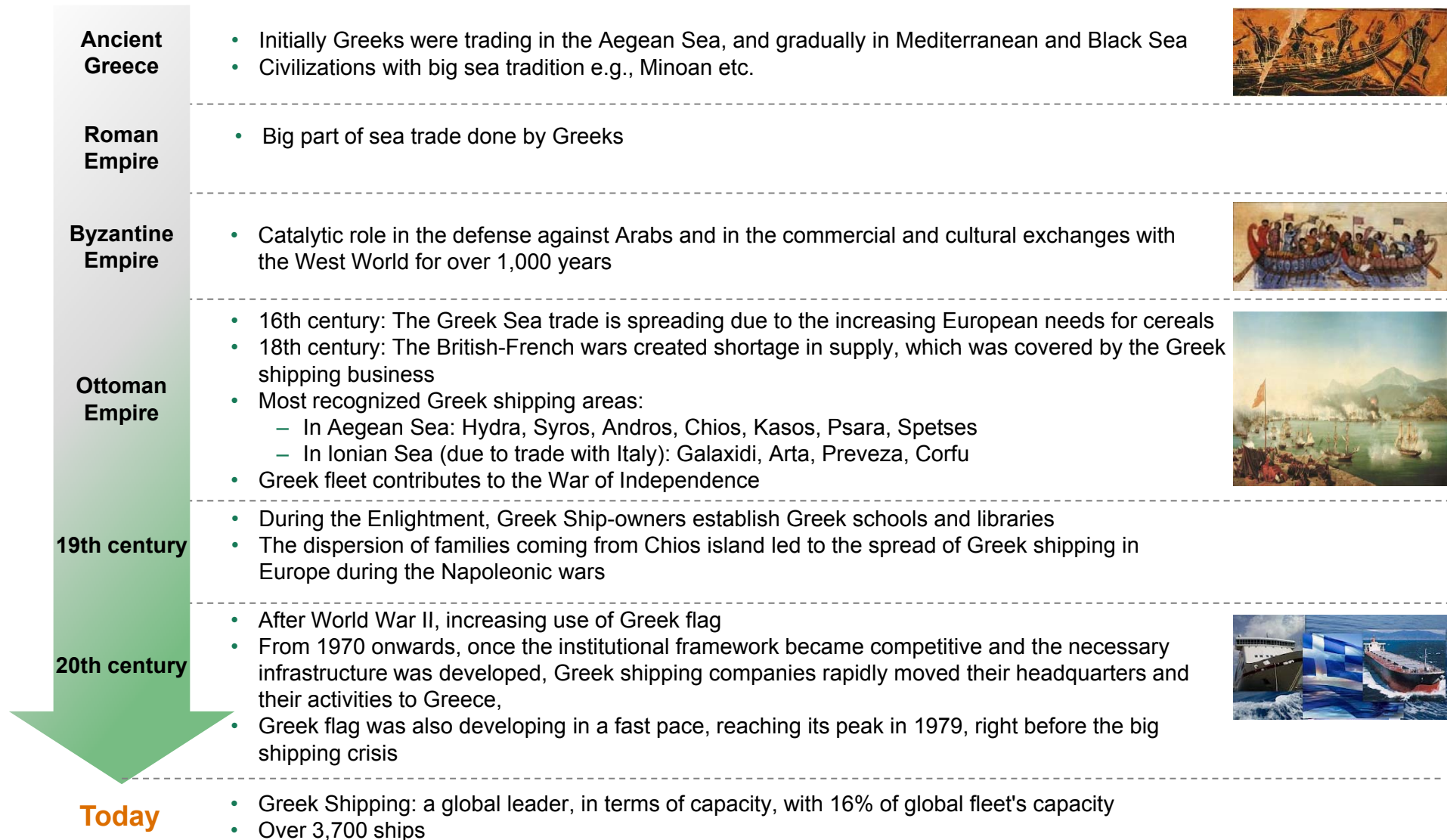
Introduction to Greek Shipping and detailed methodology used in the study

Appendix

Introduction to Greek Shipping

Methodology

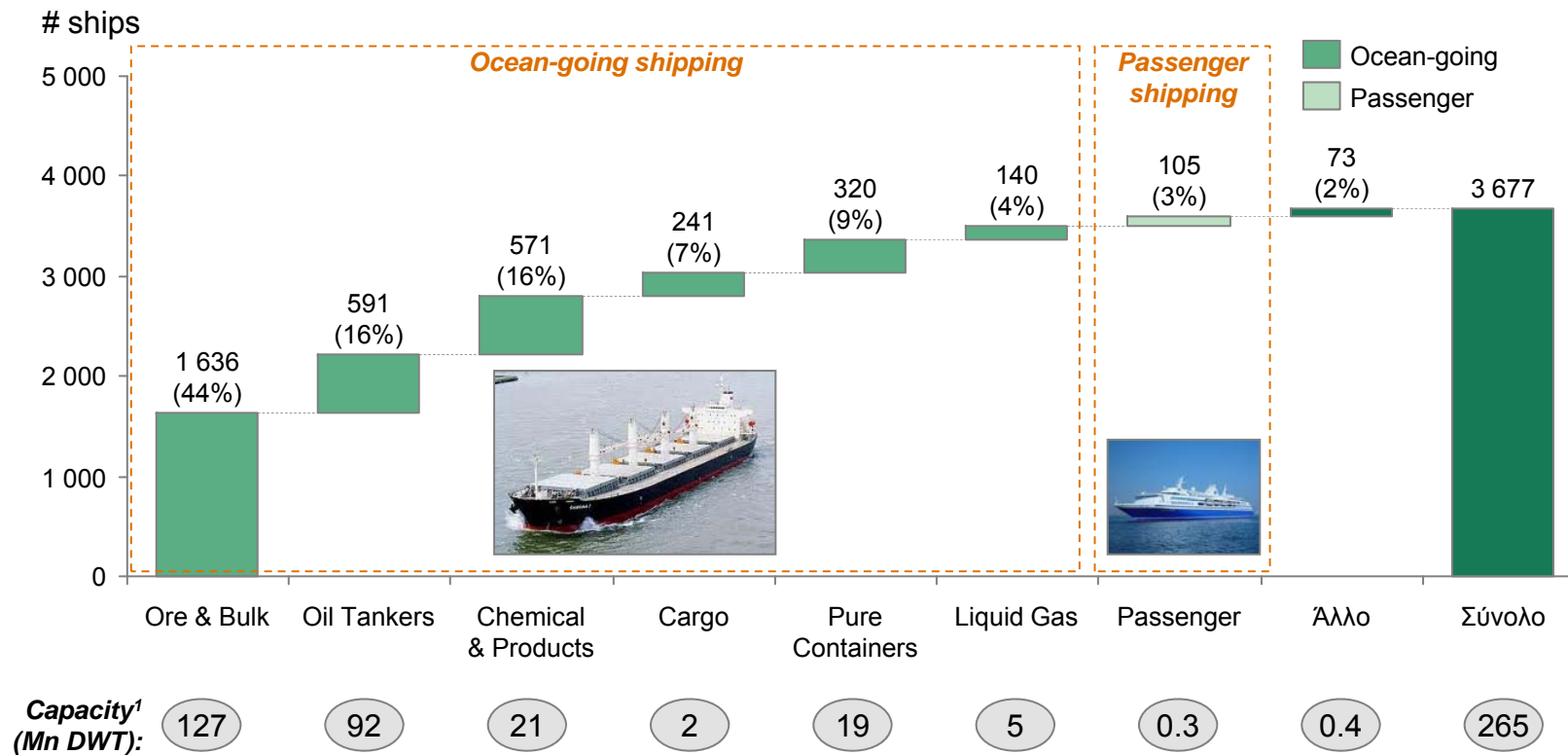
Greece, a country with a long tradition in Shipping



Source: press search

Ocean-going shipping represents ~95% of Greek fleet

Greek fleet, March 2013

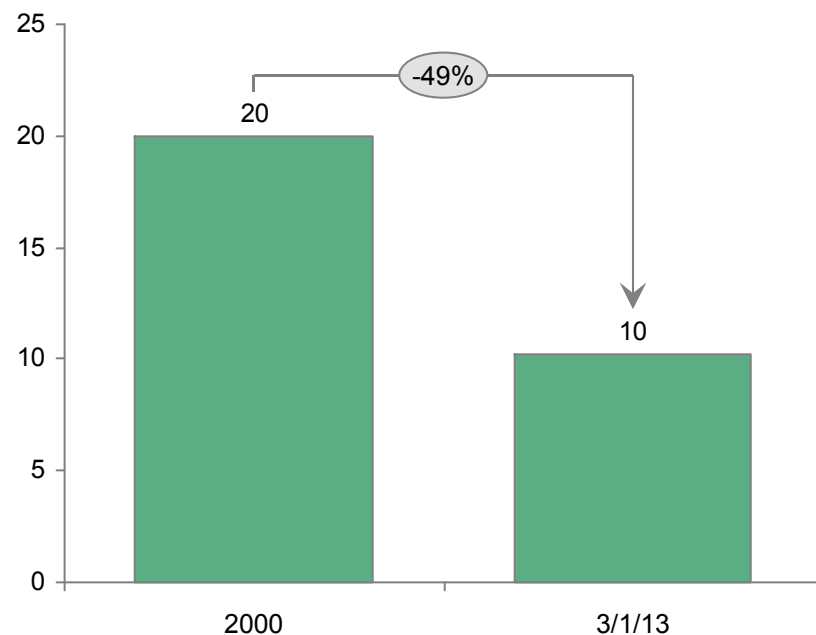


Note: Ships over 1,000 GRT in service and currently on order
 1. Data as of March 2013
 Source: Greek Shipping Co-operating Committee March 2013

Average age of Greek-owned fleet reduced by 9 years during the past decade driven by newbuilding investments

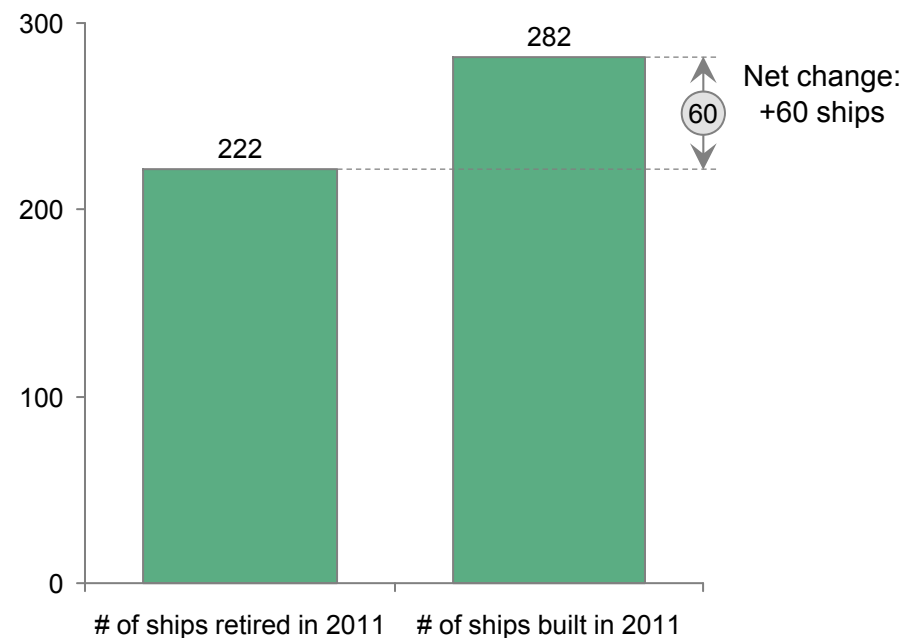
Average age¹ of Greek-owned fleet

Average age



Ship scrapping and investments on new ships during 2011

of ships



**Continuous investments even during crisis
for World ocean-going shipping**

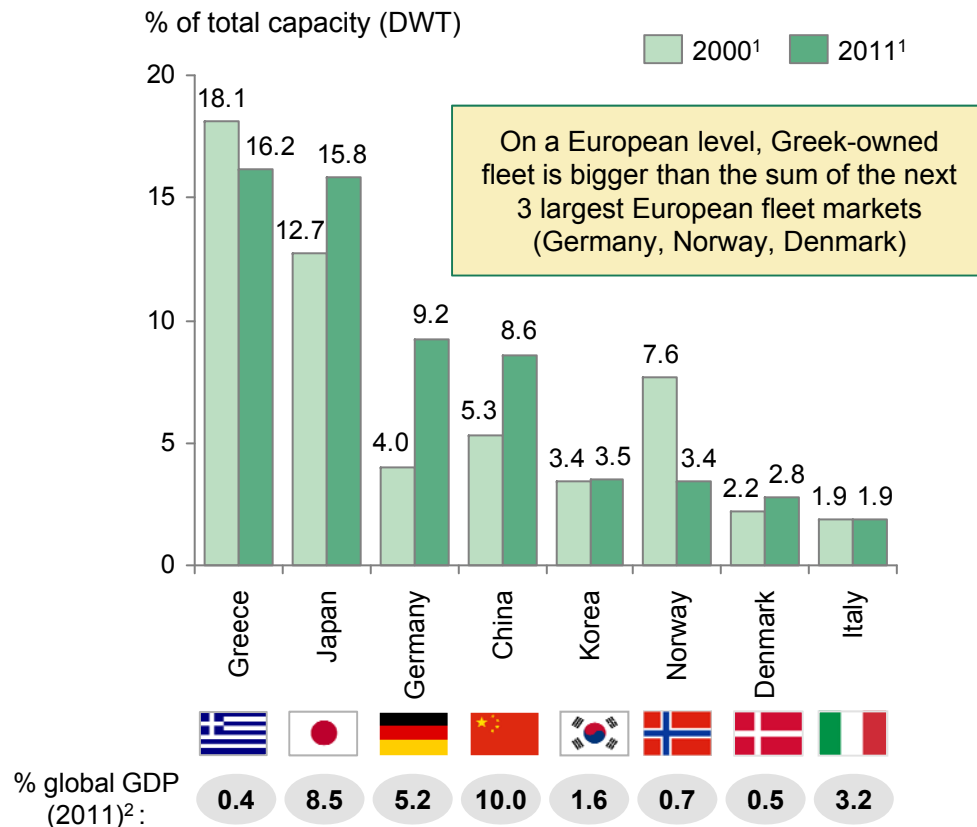
1. In terms of number of ships and not capacity

Note: Left Hand Side graph: data from Lloyd's Register of Shipping – Fairplay - Greek Shipping Co-operating Committee March 2013 were used

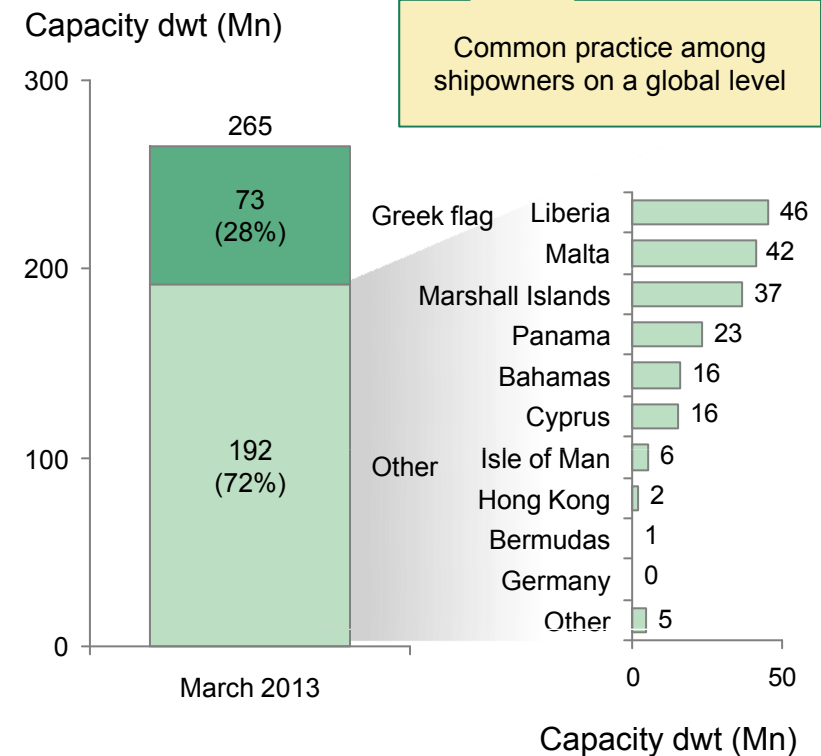
Source: Hellenic Chamber of Shipping, Lloyd's Register of Shipping – Fairplay March 2013, Greek Shipping Publications online database 2012, Marine Information Services

Greek-owned fleet is leading World ocean-going shipping against strong competitors

Greek-owned fleet with the highest global capacity, lower though vs. 2000 levels



Greek flag is important, but Greek shipowners prefer mostly foreign flags



1. Data as of Jan 1st of the respective year 2. Gross Domestic Product

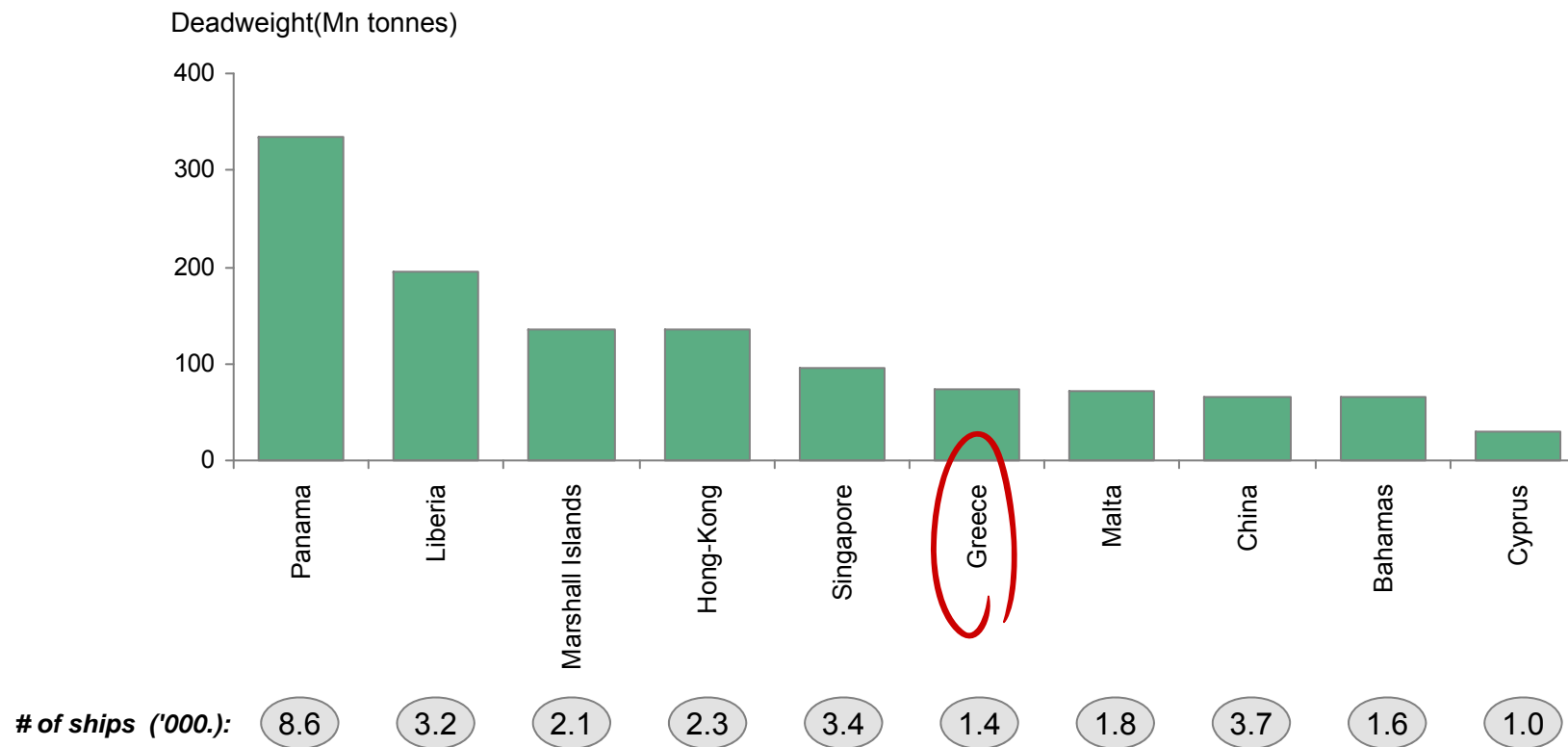
Note: Right Hand Side graph: Due to lack of data for other countries from Lloyd's Register of Shipping – Fairplay, UNCTAD database was used as common source of data

Source: UNCTAD, Review of Maritime Transport, 2000, 2011, EIU, Lloyd's Register of Shipping – Fairplay March 2012

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Greek flag among most preferred flags globally

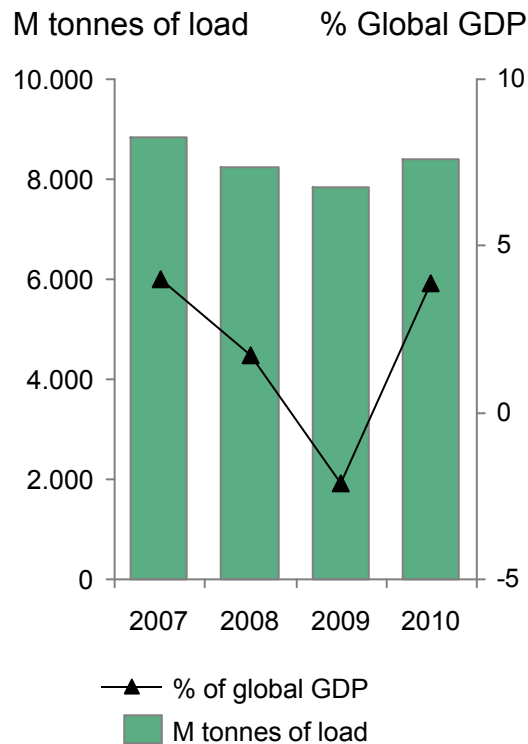
Top preferred flags for global fleet based on capacity, Jan 2013



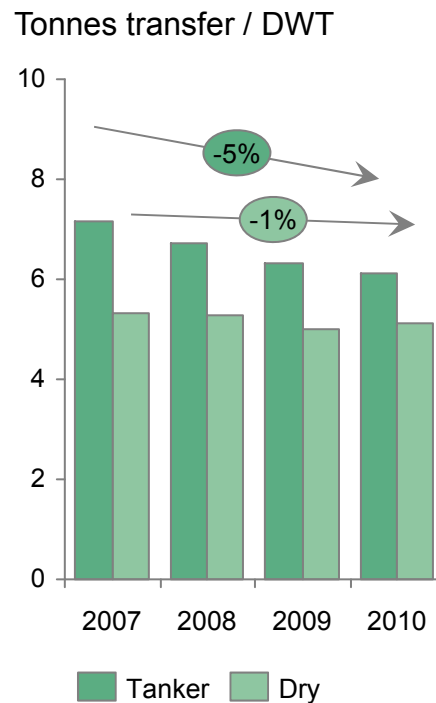
Note: Ships over 1,000 GT
Source: IHS Fairplay/ World Shipping Encyclopaedia, Jan 2013; Clarkson Research Services March 2013

Due to the global economic crisis, shipping is on the downturn

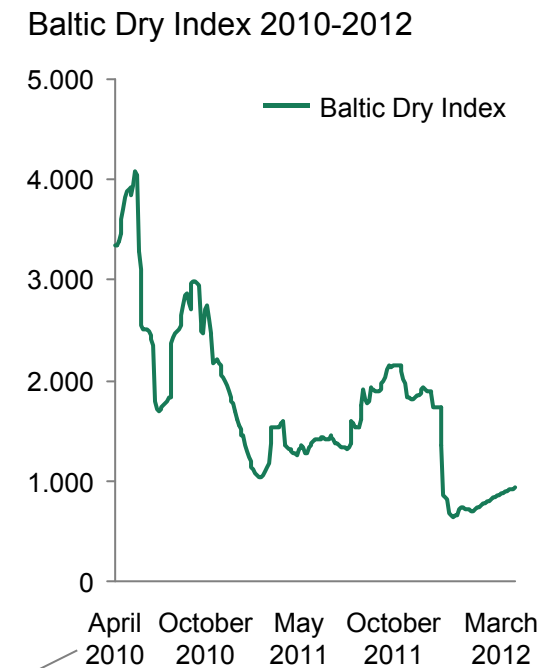
Crisis with a negative impact on global demand



Increased fleet led to reduction in productivity



Dry transfers with the highest hit



Low charter market indexes due to not only the reduction in global demand but also due to the increase supply, which was driven by high number of deliveries for orderings made in the rising period 2007-2008

Note: Baltic Dry Index Closing Daily Price
Source: Naftemporiki, UNCTAD

Appendix

Introduction to Greek Shipping

Methodology

The study was based on more than 70 interviews and sources

40+ sources

- BCG Tanker Benchmarking Initiative
- BCG Container Benchmarking Initiative
- Marine information Services
- Lloyd's
- Clarkson's
- EIU (Economist Intelligence Unit)
- Hellenic Statistical Authority
- Eurostat
- Company Annual reports 2010
- International Maritime Association
- Bank of Greece
- Analyst reports (Alpha Bank)
- Hellenic Chamber of Shipping
- Greek Shipping Publications database
- UNCTAD, Review of Maritime Transport
- The World Bank - Doing business 2012report
- Financial Times
- Policy Research Corporation
- Hill Dickinson – International Ship Registration Requirements
- Ernst & Young Shipping Industry Almanac 2011
- Druid Entrepreneurship and innovation - organizations, institutions, Systems and regions
- Harvard Business School
- The Steel And Shipbuilding Industries Of South Korea: Rising East Asia And Globalization Kyoung-ho Shin Paul S. Ciccantell
- A study of Korea's shipbuilders strategy for sustainable growth, Duck Hee Won
- SingaporeSetup.com
- Shipping Strategy by P.Lorange, Cambridge University Press
- SunStar Manila newspaper
- Input-Output Methodology Guide, Scottish Government
- Center of Maritime Economics & Logistics Erasmus University Rotterdam
- The Economic Significance of Maritime Clusters – July 2010, Danish Shipowners' Association
- The economic impact of the UK Shipping Industry - Oxford Economics
- The Greek Shipping Register, a proposal for the Foundation of an International/ second Greek Shipping register, Andreas Merikas, Sofia Gialoutsi, Nikitas Kanellopoulos
- Foundations websites¹

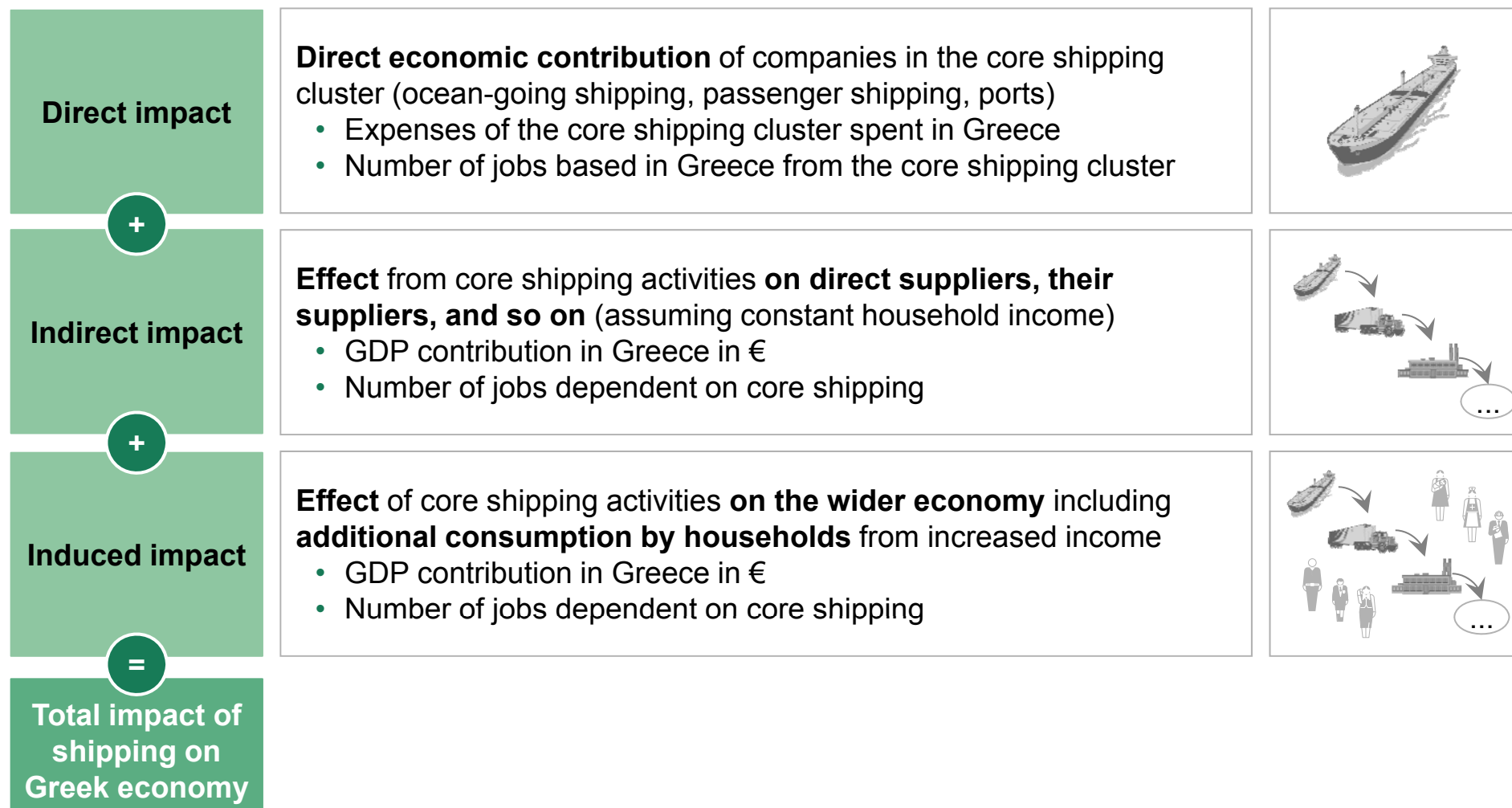
30+ interviews

- Interviews with Greek Shipowners
- Greek law firm
- UK law firm
- P&I club
- Shipyards
- Greek Ship brokerage
- Foreign Ship brokerage
- Biggest Greek Banks

1. Eugenides, Laskaridis, Latsis, Lemos, Niarchos, Onassis, Pateras, Tsakos...

Unique methodology for quantitative assessment

Euros spent and employees based in Greece and their impact on the economy quantified in 3 effects



Methodology based on unique set of **sources**

