

special focus

the shipping industry & business

#whatyouknow

Shipping is one of the oldest industries in the world. It began thousands of years ago when seafarers traded simple items such as food and jewels. Today, it remains one of the leading forms of transportation and plays an integral part in our global economy.



The Global Shipping Industry



Shipping is the backbone of the world economy, transporting the biggest share of world trade. Shipping plays an important role in the intercontinental trade of raw materials, products and commodities. It is said that "without shipping, half the world would starve, and the other half would freeze".

More than **80%** of world trade carried by sea

Around **1.5 million** seafarers employed globally

Among the first industries to adopt widely implemented international safety standards

KEY PLAYERS

Shipowner
Owner of merchant vessels which are equipped for trade and delivery.

Shipbuilder
Company involved in the construction of ships and other floating vessels.

Shipmanager
Company engaged by shipowners to maintain and operate the vessels.

Regulators
Maritime regulations are developed at the global level.
Key regulators are:
IMO INTERNATIONAL MARITIME ORGANIZATION
Responsible for measures to improve the safety and security of international shipping and to prevent pollution from ships.
More than 170 member states of IMO implement and enforce these international rules into their legislations.
International Labour Organization
Aligned with the Maritime Labour Convention 2006 and responsible for implementing internationally recognised labour standards to protect the rights of seafarers.

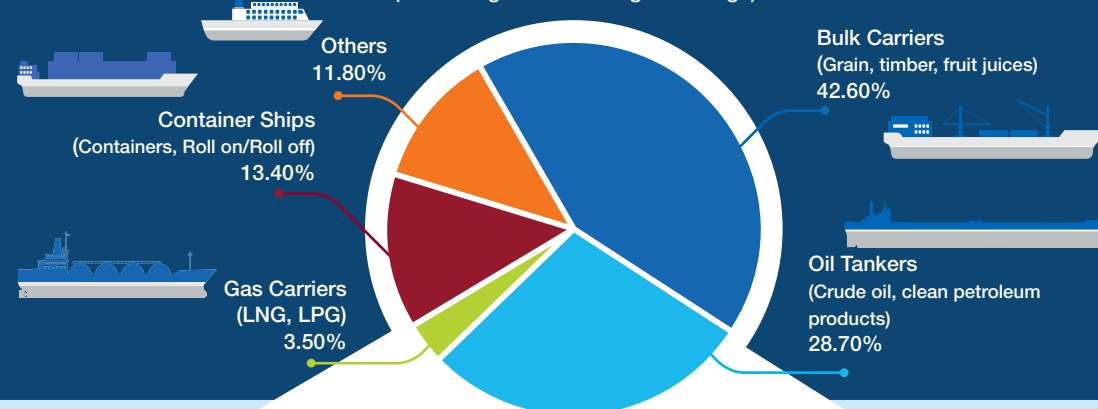
Classification Society
A non-governmental organisation that establishes and maintains technical standards for the construction and operation of ships and offshore structures.
Some examples of Classification Societies:
DNV-GL (Germany), ClassNK (Japan), Lloyd's Register (UK), American Bureau of Shipping (ABS) (USA)

Protection and Indemnity Insurance (P&I) Club
P&I insurance is a form of mutual maritime insurance provided by a P&I Club that provides cover for open-ended risks including damage to cargo, war risks and risks to environmental damage.
Some examples of P&I Clubs:
Britannia P&I, London P&I Club, UK P&I Club, GARD P&I Club

MAIN VESSEL TYPES

In early 2019, there were 95,402 vessels in the total world fleet accounting for 1.97 billion in deadweight tonnage (dwt).

World Fleet by Vessel Types, 2018 - 2019 (Percentage of Deadweight Tonnage)



Deadweight tonnage (dwt) refers to maximum weight that the ship can carry including all the cargo, fuel, fresh water, crew and other supplies.

(Source: UNCTAD Review of Maritime Transport 2019)

MISC operates in these shipping categories, particularly in LNG and Petroleum shipping

ENERGY SHIPPING CARGOES & VESSELS

Petroleum
Crude Oil: Unrefined petroleum product composed of hydrocarbon deposits and other organic materials.
Clean Petroleum Products: Produced from the processing of crude oil and other liquids at petroleum refineries.

LNG
Liquefaction: Conversion of natural gas to liquid. Cooled down to approx. -160°C, 600x smaller.
Sea Transportation: Transported in double-hulled ships with cryogenic tanks.
Regasification: Conversion of liquid to natural gas. Heated up to more than 0°C, More than 600x larger.

LNG carriers vary in cargo capacity, from 1,000 cbm to 267,000 cbm. Majority of modern vessels are between 125,000 cbm and 175,000 cbm capacity.

Large tankers : VLCC (200,000 - 320,000dwt)
Carries crude oil. Offers economies of scale because it carries large amounts over long distances.

Mid-sized tankers : Aframax (45,000 - 160,000dwt)
Carries crude oil and clean petroleum products. Used for short-haul voyages such as between the ports in the Caribbean, Europe, and the United States.

Smaller tankers : MR2 (Below 45,000dwt)
Commonly used to transport clean petroleum products over shorter distances.

Learn more about MISC's LNG Asset Solutions and Petroleum & Product Shipping segments on pages 42 to 43 and 88 to 101.

KEY DRIVERS IN ENERGY SHIPPING

DEMAND FOR ENERGY SHIPPING

1. DEMAND AND SUPPLY OF OIL & GAS

Demand: Demand for oil & gas around the world; Seasonality: Demand is higher in the first and fourth quarter of the calendar year.

Supply: Oil production caps by OPEC+ coalition; Development of new oil and gas fields opens new trade routes and diversify the supply sources; Natural disasters, war and geopolitical developments.

2. TRANSPORTATION DISTANCE
The longer the distance between the source of crude oil (exporter) and the refinery (importer), the greater the demand for shipping services.

SUPPLY OF VESSELS

SUPPLY OF SHIPPING CAPACITY

Cyclical nature of the shipping market driven by the supply and demand of vessels which affects the charter rates and capital flows in the market.

CYCLICALITY OF THE SHIPPING BUSINESS

- Tonnage growth:** Number of vessels in the market increases over time.
- Overupply of vessels in the market:** Causes lower freight rates and reduces earnings and profitability for shipowners.
- Older vessels are removed from the market:** Over time, older, less efficient vessels are disposed as they become too uneconomical to run.
- Market rebalances:** Freight rates stabilises, leading to increased earnings and profitability for the shipowners.
- New vessels are ordered:** Investment by shipowners in building new vessels with lead time to delivery of about two years.

MAIN CHARTER TYPES

- Chartering is an activity in which a customer agrees to hire the use of a vessel from a shipowner
- Customer is often referred to as the 'charterer' of the vessel
- Charterparty is the agreement between the shipowner and the charterer

Spot Charter: Charterer hires a vessel and crew for cargo transportation from a load port to a discharge port, at an agreed freight rate (usually on a per-tonne basis).
Charterer Pays Charter Hire → Vessel Owner Bears the cost
Capital Cost + Operating Cost + Voyage Expenses

Time Charter: Chartering of a vessel for a designated period e.g. 12 months, at a set daily charter rate. The charterer selects the ports and directs the vessel where to go, but the operation and general management of the vessel still lies with the owner.
Charterer Pays Charter Hire → Vessel Owner Bears the cost
Voyage Expenses → Capital Cost + Operating Cost

Bareboat Charter: An arrangement where the charterer has possession and control of the vessel, including the right to appoint its own crew to manage the vessel.
Charterer Pays Charter Hire → Vessel Owner Bears the cost
Operating Cost + Voyage Expenses → Capital Cost

Capital Cost: Cost of the ship including financing cost

Operating Cost: Crew cost, Administration & management, Repair & maintenance, Dry docking, Insurance

Voyage Expenses: Fuel (Bunker), Port charges, Canal dues

LIFE CYCLE OF A VESSEL

Design
Preliminary/Concept Design, Basic Design, Detail Design

Construction
Steel Cutting, Keel Laying, Launching, Commissioning, Delivery

Operation
Operational Control, Ship Maintenance, Upgrading and Repairs

Scrapping
Dismantling, Recycle

Depending on the vessel type, the average construction period from the time the vessel is ordered until its delivery is approximately two years.

Average economic lifespan is between 20 - 25 years.

Once a vessel has reached its economic lifespan, it will be disposed under specific rules and regulations. Disposal/recycling process must be done in an environmentally friendly manner.

Did you know?
Some vessels that are still within its economic lifespan can be converted for other use in the energy industry, such as FPSO, FSO, FSU and others.