



2024 Review of maritime transport

Chapter II

World shipping fleet and services

In 2023 and the first half of 2024, the shipping industry faced significant disruptions and volatility. The global fleet grew at an annual rate of 3.4 per cent in 2023, up from 3.2 per cent in 2022 and below the average 5.2 per cent of 2005–2023. Total fleet capacity reached about 2.4 billion dead weight tons.

In 2023, the global fleet and container ship capacity grew faster than trade volumes, and this trend is expected to continue in 2024. Concerns over excess capacity in container shipping have eased for now, due to disruptions in shipping routes boosting demand. Once vessel rerouting slows down, overcapacity issues are likely to return.

The global fleet is getting older, and there is an urgent need to shift to low-carbon technologies and fuels. However, together, ongoing uncertainty about future fuels and technology, trends in global shipyard capacity, newbuild prices, construction costs, demolition rates and increased distance-adjusted demand for ships could delay fleet renewal decisions.

Key global fleet developments for 2023 and the first half of 2024 are set out in section A. Factors influencing shipowners' decisions on fleet renewal and how they might green their fleets are examined in section B. Policy recommendations are provided in section C.



A. Developments in the global shipping fleet

Shipping continues to navigate a complex operating landscape

Complexity, volatility and uncertainty were the hallmarks of the shipping industry's operating landscape in 2023 and the first half of 2024. Shipping faced a new wave of supply chain disruptions, reconfigured shipping routes, restructuring in the liner shipping market, new regulatory requirements, further decarbonization efforts, heightened geopolitical tensions and intensified climate change impacts. While economic factors continued to shape shipping supply, the added complexity arising from the interplay of the above cited factors has also influenced global fleet dynamics, impacting trends in ship carrying capacity, deployment patterns, orderbook, construction, demolition, and shipbuilding.

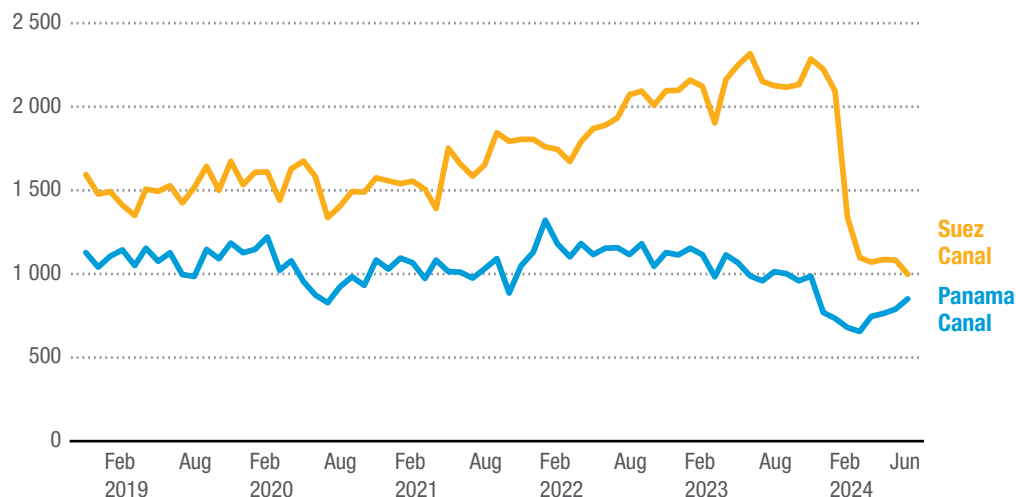
Shipping seems to have found a “new normal” as it continued to cope with the disruptions caused by the war in Ukraine and the legacies of the COVID-19 pandemic.

However, increased geopolitical instability and climate-related factors upended shipping in 2023 as ships transiting the Suez and Panama Canals had to be diverted onto longer routes. Attacks on vessels in the Red Sea prompted most shipping lines to reroute around the Cape of Good Hope. At the same time, the Panama Canal had to cut daily ship transits due to drought and low water levels. The Suez Canal handles about 10 per cent of the world maritime trade volume and 22 per cent of world container trade. The Panama Canal handles approximately 3 per cent of global maritime trade volume (see chapter I). By June 2024, the number of ship transits through the Panama Canal and the Suez Canal were down by over half compared to previous peaks (December 2021 and May 2023, respectively). Most of the decline in the Suez Canal has happened since December 2023 due to the onset of the Red Sea crisis, while the number of transits through the Panama Canal have been decreasing over the last two years due to reduced water levels (figure II.1).

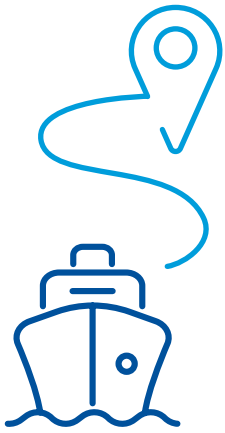
Complexity, volatility and uncertainty were the hallmarks of the shipping industry's operating landscape in 2023 and the first half of 2024

Figure II. 1

Panama and Suez Canals: Number of monthly ship transits



Source: UNCTAD calculations, based on data from Clarksons Research Shipping Intelligence Network.



Geopolitical instability and climate-related factors upended shipping in 2023 as **ships transiting the Suez and Panama Canals had to be diverted onto longer routes**

In 2023, container ships made up 43 per cent of the number of transits through the Suez Canal, with bulkers accounting for 19 per cent, followed by tankers transporting refined petroleum products, chemicals and crude oil. In June 2024, compared to the average in mid-December 2023, the total carrying capacity of ships (ship tonnage) arriving at the Gulf of Aden had dropped by 76 per cent, and the number of transits through the Suez Canal were down 70 per cent. Ship capacity arrivals by gas carriers, car carriers, container ships, bulkers, product tankers and crude tankers fell by 100 per cent, 96 per cent, 92 per cent, 64 per cent, 60 per cent and 50 per cent, respectively. Arrivals at the Cape of Good Hope increased by 89 per cent.

Rerouting vessels around Africa adds distance and extends transit times. A ship travelling from Shenzhen, China, to Rotterdam, Kingdom of the Netherlands, through the Suez Canal travels 10,000 nautical miles in about 31 days. By going around the Cape of Good Hope, the distance increases to 13,000 nautical miles and takes about 41 days (Coyne, 2024). Diverting tonnage around the Cape of Good Hope increases global vessel demand by 3 per cent and container ship demand by 12 per cent (Clarksons Research, 2024a). This reflects the uplift in ton-mile demand for global vessels and container ships in June 2024 compared to the demand if there had been no rerouting away from the Red Sea and the Suez Canal. The additional demand and increased ton-miles have altered global ship capacity, affected supply and demand balance, supported charter markets, boosted ship sales and purchases and lowered ship demolition levels.

However, rerouting ships onto longer routes is triggering market inefficiencies, such as port congestion and higher costs. Rerouting vessels around the Cape of Good Hope due to the disruption in the Red Sea has overwhelmed many ports.

Off-schedule arrivals, for example, cause logistical issues such as having to reposition empty containers (Shipfinex, 2024). Recent bottlenecks at the Port of Singapore, caused by ships being diverted around the Cape of Good Hope, illustrate the ripple effects on other ports from the increased loads (Li, 2024 and Dom, 2024). Longer routes also hike up costs for crew wages, chartering, insurance and fuel. For instance, additional costs for an Asia–Europe round trip by a median-sized container ship average \$1 million through the Suez Canal compared to \$1.7 million around the Cape of Good Hope. This represents an additional cost of \$160 per forty-foot equivalent unit (FEU) container arriving in Europe through the Suez Canal, or \$272 of additional costs for a FEU around the Cape of Good Hope (ITF, 2024). Ultimately, these additional costs translate into higher freight rates and shipping expenses (see chapter III).

Other concerns include threats to seafarers' safety, greater exposure to piracy incidents, challenges in capacity management, a heavier carbon footprint, and difficulties in complying with environmental rules. Rerouting has increased ship sailing speeds, as operators try to stick to schedules. This generates additional fuel consumption and carbon emissions, which undermine ships' environmental performance and regulatory compliance. For example, the speed of container ships of 17,000 TEU and beyond increased 5 per cent in the first quarter of 2024 compared to 2023 (Clarksons Research, 2024a).

The increased additional costs faced by ships travelling to and from Europe due to vessel rerouting coincide with the introduction of the European Union Emissions Trading System (ETS). Since January 2024, the ETS was extended to the shipping industry, making ships accountable for 50 per cent of emissions on voyages to and from the European Union and 100 per cent of emissions for port calls and transits within the European Union.¹

¹ European Commission (n.d.), Reducing emissions from the shipping sector, see https://climate.ec.europa.eu/eu-action/transport/reducing-emissions-shipping-sector_en.

According to estimates by OceanScore, the additional ETS-related expenses for shipping companies could triple; rerouting around the Cape of Good Hope has caused bunker consumption to increase three-fold due to extended distances and higher speeds (up from 16 to 20 knots) (World Cargo News, 2024).

In 2023, fleet capacity grew faster than maritime trade volumes; longer routes helped absorb surplus capacity

At the start of 2024, the global fleet was made up of around 109,000 vessels

(including cargo and non-cargo ships), each weighing at least 100 gross tons. Global fleet capacity grew by 3.4 per cent (table II.1 and figure II.2), slightly up from 3.2 per cent in 2022. However, this growth rate is lower than the average of 5.2 per cent recorded over 2005–2023, which was driven by rapid fleet expansion during 2005–2012.

Fleet growth was uneven in 2023 with container ship capacity jumping by nearly 8 per cent and that of liquified gas carriers growing by 6.4 per cent. Tanker growth remained low, expanding by less than 2 per cent. The world's total fleet capacity reached about 2.4 billion dead weight tons, with bulkers making up 42.7 per cent and oil tankers 28.3 per cent of the total.

Table II. 1
Developments in the world fleet capacity by vessel types

Fleet composition by vessel type	Indicator ^a	2023	2024	Percentage change
Bulk carriers	Thousand dead weight tons	974 452	1 004 281	3.1
	Percentage share	42.8	42.7	
Oil tankers	Thousand dead weight tons	652 850	665 424	1.9
	Percentage share	28.7	28.3	
Container ships	Thousand dead weight tons	305 844	329 490	7.7
	Percentage share	13.4	14.0	
Other types of ships	Thousand dead weight tons	261 525	270 657	3.5
	Percentage share	11.5	11.5	
Offshore supply	Thousand dead weight tons	87 055	89 093	2.3
	Percentage share	3.8	3.8	
Liquefied gas carriers	Thousand dead weight tons	88 221	93 882	6.4
	Percentage share	3.9	4.0	
Chemical tankers	Thousand dead weight tons	51 535	52 582	2.0
	Percentage share	2.3	2.2	
Other/n.a.	Thousand dead weight tons	26 177	26 316	0.5
	Percentage share	1.1	1.1	
Ferries and passenger ships	Thousand dead weight tons	8 537	8 784	2.9
	Percentage share	0.4	0.4	
General cargo	Thousand dead weight tons	82 708	84 047	1.6
	Percentage share	3.6	3.6	
World total	Thousand dead weight tons	2 277 379	2 353 899	3.4

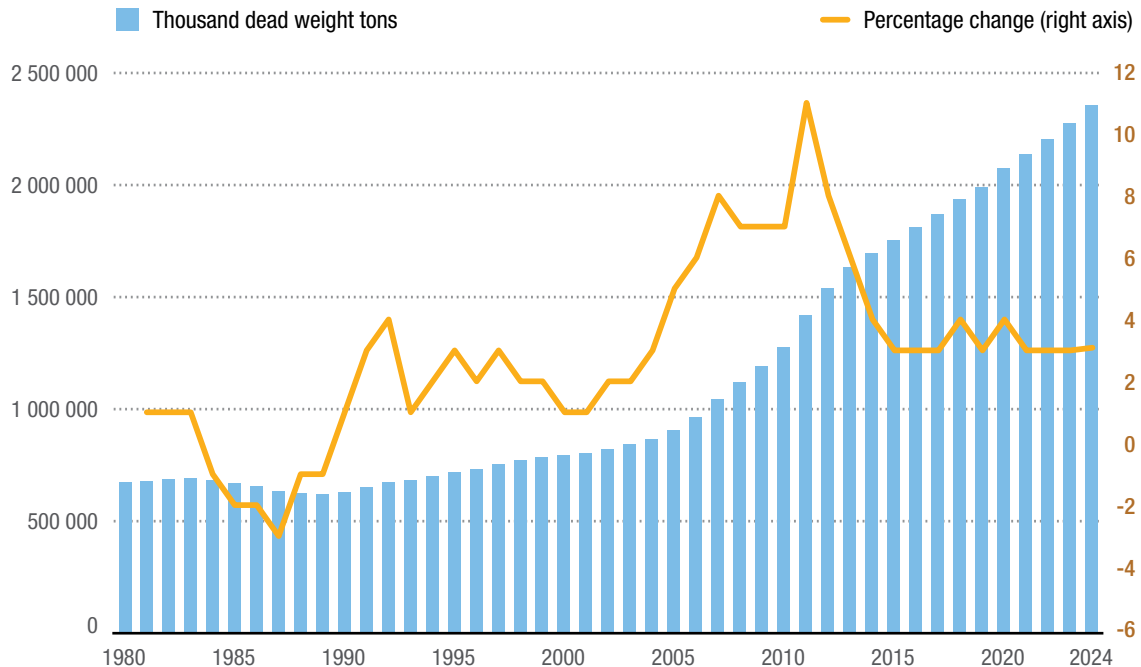
Source: UNCTAD calculations, based on data provided by Clarksons Research Services.

^a Propelled seagoing merchant vessels of 100 gross tons and above, as of 1 January 2024. Dead weight tons for some individual vessels estimated.



Figure II. 2

Trends in yearly world fleet growth: Capacity continues to expand in 2023 and 2024 but below the long term average



Source: UNCTAD calculations, based on data from Clarksons Research Shipping Intelligence Network.

Over the years, the structure of the world shipping fleet evolved in tandem with shifts in the structure of maritime trade. Dry cargo, particularly bulk commodities such as iron ore, coal and grain, increased their share in maritime trade, overtaking oil cargo. Containerization has reduced the need for general cargo ships, with breakbulk cargo increasingly transported in containers. As result, over the years, the share of dry bulk carriers increased and outpaced the share of oil tankers. Meanwhile, the share of container ships and other specialized vessels continues to overtake that of general cargo ships (figure II.3).

In 2023, ship capacity grew faster than maritime trade but lagged behind the demand measured in ton-miles (see chapter I). Fleet capacity growth is projected to grow at a similar rate in 2024 (by 3.4 per cent) and decelerate to 2.7 per cent in 2025 (Clarksons Research, 2024b). This slowdown reinforces the trend of recent years while also reflecting a low orderbook,

long lead times at shipyards, higher newbuilding prices, and a strong second-hand market. Despite prevailing challenges and increased operating expenses (up 8 per cent year-on-year) and reduced earnings compared to the record levels seen in 2021 and 2022, most ship segments experienced solid cash flow and continued asset price increases (see chapter III) (Clarksons Research, 2024c).

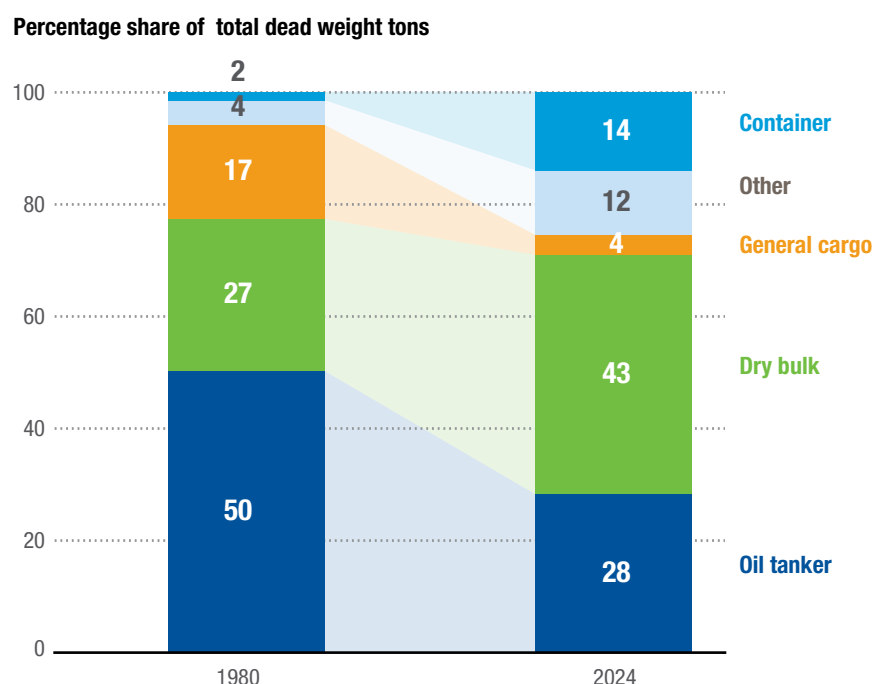
In 2023 and the first half of 2024, the supply of ship capacity and vessel utilization were shaped by system inefficiencies and new opportunities to deploy fleet capacity arising from ongoing supply chain disruptions and rerouting. An example is the use of “shadow” fleets (particularly in tankers) amplified by the continued war in Ukraine and reinforced by latest disruptions. This trend has extended the service life for existing ships, boosted ship sales and purchases, increased second-hand prices, slashed ship demolition levels and motivated some investments in newbuilt vessels.





Figure II. 3

The shares of various ship types in the world fleet capacity, 1980 and 2024



Source: UNCTAD calculations, based on data from table II.1 of this report and UNCTAD statistics.

More ships were delivered in 2023 due to orders placed during the post-pandemic boom

In 2023, 1,665 vessels were delivered, adding 64.8 million gross tonnage capacity to the active fleet, that is, 3 per cent of the total fleet. Reversing the downward trend of 2022, ship gross tonnage delivered went up (16 per cent) in 2023, with container ships accounting for 35.3 per cent of the total, followed by bulkers (30.7 per cent), oil tankers (12.1 per cent) and liquefied gas carriers. The distribution of gross tonnage across these vessel types is detailed in table II.2. In 2024, most new deliveries will be container ships and gas carriers, while most new orders are for tankers and bulkers.

In 2023, China, the Republic of Korea and Japan continued to dominate the shipbuilding market with these three countries accounting for about 95 per cent of the global output. This was the first time that China delivered more than 50 per cent of the world's new ship capacity. The Republic of Korea contributed 28.2 per cent and Japan contributed 14.9 per cent. China dominated all ship segments, except for oil tankers and liquefied gas carriers, which were led by shipbuilders in the Republic of Korea. The decline in contributions from Japan and the Republic of Korea in recent years have enabled Chinese shipyards to take the lead. In addition to entering the liquefied natural gas (LNG) carrier segment in 2022, China overtook the Republic of Korea in container shipping in 2023. Shipyard output in the Republic of Korea peaked at around 35 per cent in 2016. Historically, the output from Japan in the 1970s and 1980s hovered at around 50 per cent (BRS Shipbrokers, 2024).

For the first time ever, **China delivered more than 50% of the global new ship capacity**





Table II. 2
Deliveries of newbuilt vessels, 2023

Newbuild vessels	China	Japan	Republic of Korea	Philippines	Viet Nam	Europe	Rest of the world	World total	Percentage share
<i>(By type)</i>									
Gross tons and percentage share									
Oil tankers	1 844 222	350 537	4 988 816	2 232	425 986	130 282	90 014	7 832 089	12.1
Bulk carriers	12 473 399	6 352 971	195 148	790 002	46 011			19 857 531	30.7
General cargo ships	644 605	270 809	269 391		818	146 927	95 291	1 427 841	2.2
Container ships	13 512 628	2 231 385	7 100 704				42 600	22 887 317	35.3
Liquefied gas carriers	1 280 996	351 535	4 952 060			2 999	12 123	6 599 713	10.2
Chemical tankers	524 528	207 459	45 930			9 797	9 376	797 090	1.2
Offshore supply	1 517 788	3 922	740 491		31 352	50 903	149 790	2 494 246	3.9
Ferries and passenger ships	564 993	39 132	24 161	13 488	8 400	1 263 319	74 068	1 987 561	3.1
Other/n.a.	684 261	157 432	1 185	216	513	19 699	28 075	891 381	1.4
Total	33 047 420	9 965 182	18 317 886	805 938	513 080	1 623 926	501 337	64 774 769	100
Percentage share	51.0	15.4	28.3	1.2	0.8	2.5	0.8	100.0	

Source: UNCTAD calculations, based on data from Clarksons Research Services.

Note: Propelled seagoing merchant vessels of 100 gross tons and above.

Fleet growth was moderate in 2023, with the ship orderbook remaining limited but greener

In 2023, the global ship orderbook increased by 9.8 per cent in terms of vessels and by 9.1 per cent in terms of capacity; this is less than three times the increase in 2022. Limited availability of berths at shipyards and high prices for newbuilds contributed to moderating growth. Despite the continued flow of fresh orders, the global orderbook remained relatively low, standing at 11 per cent of the active capacity, similar to level seen in 2019 (figure II.4).

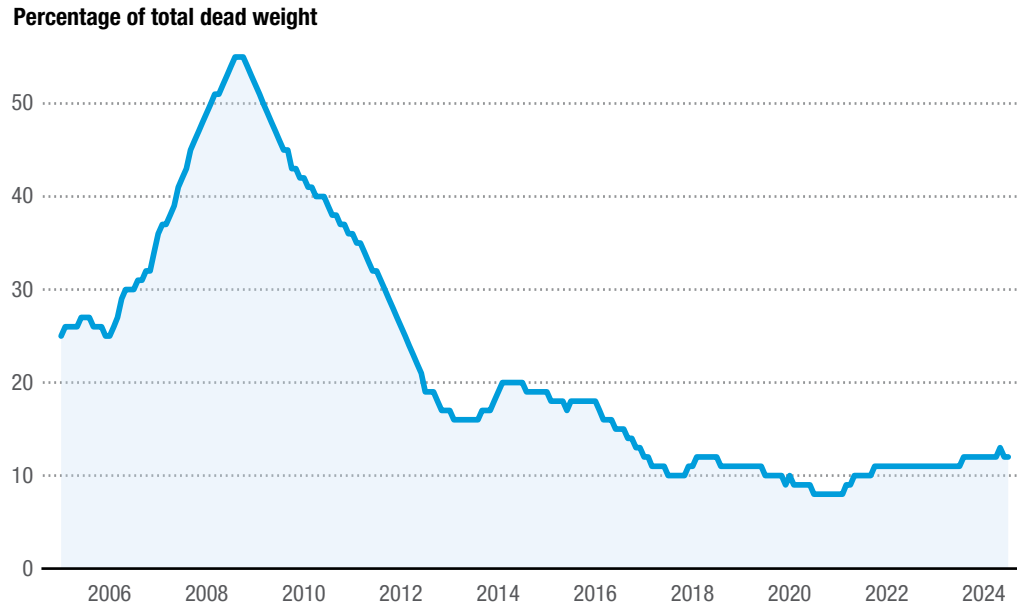
At the start of 2024, the global ship orderbook represented 12 per cent of dead weight tonnage, totalling 4,870 vessels and 283 million tons. In terms of value, the orderbook reached 405.5 billion in June 2024, marking a 20.7 per cent increase from the same period in 2023. The size of the current orderbook does not closely follow traditional shipping cycle patterns, whereby more orders are typically placed during good times. For perspective, at the height of the global downturn in 2009, the orderbook as a percentage of dead weight tonnage of the active fleet was more than four times the size of the orderbook in 2023 and the first half of 2024. The relatively larger ship orderbook in 2009 and 2010 reflects the prevailing order cancellation trends and the fact that orders were made before the downturn.





Figure II. 4

Global ship capacity ordered as a percentage of the active fleet tonnage



Source: UNCTAD calculations, based on data from Clarksons Research Intelligence Network.

Note: Propelled seagoing merchant vessels of 100 gross tons and above.

In 2023, the composition of the orderbook shifted due to some fleet renewal plans and shipyards having a greater focus on building tankers and bulkers and as opportunities from the container shipping highs of 2021–2022 waned. At the start of 2024, the LNG carriers orderbook accounted for over 50 per cent of active capacity while container ships, bulkers, and tankers accounted for 25 per cent, 9.7 per cent and 7.5 per cent, respectively (Clarksons Research, 2024b).

In 2023, the oil tanker orderbook dropped to its lowest rate in three decades (4.4 per cent of the fleet capacity) before recovering to 7.5 per cent in the first quarter of 2024. The rise in orders for crude tankers can be put down to increased shipments from the United States and Brazil, rerouting trends due to the war in Ukraine and shipowners' ambitions to renew ageing crude tankers and align with environmental regulations. As regulations tighten up in the second-hand market, with a stronger focus on "know your customer" requirements (the need to verify clients), newbuilds become more appealing

– they come with a clean ownership record and put owners in a better position for future transactions (Jallal, 2024). In 2023, the orderbook for bulkers grew marginally from 8.3 per cent of capacity in 2022 to 8.6 per cent before reaching 9.7 per cent in the first quarter of 2024, a share overshadowed by the 78 per cent recorded during the 2009 downturn.

Growing interest in LNG, including for fuelling ships, has boosted the orderbook for these vessels. LNG carriers averaged 27 per cent of fleet capacity in 2022, nearly 50 per cent in 2023 and over 51 per cent in the first quarter of 2024. While impressive, the highest LNG carriers orderbook-to-fleet-capacity ratio was recorded in 2006 (88 per cent). Liquefied petroleum gas (LPG) carriers have also attracted more orders, with a share of approximately 23 per cent in 2023. This reflects expectations that LPG carriers and vessels designed to run on ammonia (NH₃ vessels) will be capable of transporting ammonia as an alternative fuel (BRS Shipbrokers, 2024).

Growing interest in LNG, including for fuelling ships, has boosted the orderbook for these vessels



Despite the relative weakening of the container freight market compared to 2021–2022 and the capacity influx of 2023, new orders remained surprisingly firm in 2023. Container ships continued to claim a large share of ship capacity on order in 2022 (24.1 per cent), in 2023 (29.5 per cent) and the first quarter of 2024 (24.5 per cent).

Ordering was boosted by dual-fuel vessels, which accounted for most of the container ship capacity on order at the start of 2024 (MDS Transmodal, 2024). In recent years, much of the container ship capacity ordered is alternative fuel-capable. Meanwhile, orders for ships that carry cars remain high, driven by car manufacturers in China (BRS Shipbrokers, 2024).

Although the fuels of the future remain uncertain, the greening of the global orderbook is under way. This includes orders for ships that can use multiple types of fuel and those equipped with dual fuel capabilities, allowing them to use more than a single fuel type. At the start of 2024, uptake of energy saving technologies continued. Around 50 per cent of the gross tonnage of vessels on order was designed to use alternative fuels, and over 14 per cent was classified as alternative fuel-ready. LNG accounted for 36.1 per cent of the alternative fuel-capable orderbook while the methanol-capable orderbook, driven by container ships, increased its share to 9.3 per cent, up from 4 per cent at the start of 2023 (Clarksons Research, 2024b). Twelve orders for ammonia-capable ships were placed for the first time in 2023, while wind-assisted propulsion attracted more interest. Ports are also expanding their green infrastructure, with 195 ports currently offering LNG bunkering, 77 developing this capability and 28 providing bunkering for at least one other alternative fuel. At least 205 ports provide some shore-side power, with around 2,500 ships currently being fitted with shore power connections (Clarksons Research, 2024c). Shore-side power allows ships to shoreside electrical power at berth while their main and auxiliary engines are shut down.

Ordering was boosted by dual-fuel vessels, which accounted for most of the container ship capacity on order at the start of 2024

The world fleet is ageing; environmental targets are hardening but progress towards fleet renewal remains slow

Regulatory measures to combat climate change increased in 2023. The European Union introduced the ETS scheme and compliance with the requirements of the International Maritime Organization (IMO) relating to the Energy Efficiency Existing Ship Index (EEXI) and the Carbon Intensity Indicator (CII) became mandatory. IMO also adopted its 2023 IMO Strategy on Reduction of GHG Emissions from Ships, which strengthened targets for shipping by aiming for net-zero emissions by 2050. Meanwhile, international efforts to decarbonize other modes of transport are also ongoing (box II.1).

In the context of growing decarbonization commitments, as well as a relatively moderate orderbook and restrained investment in newbuilds, global fleet renewal is emerging as a key theme. The global shipping fleet is ageing, with many ships soon due to reach the end of their service. The age of the global fleet by dead weight tonnage at the start of 2024 was 12.5 years; the age by vessel counts averaged 22.4 years, an increase of 2 per cent over the same period in 2023. Smaller, older ships are contributing to the higher average age. The fleet matured by more than three years compared to the previous decade (table II.3, figure II.5 and figure II.6), and more than half of the fleet by vessel count is now over 15 years old. Average ages of ships went up across all fleet segments, except for container ships, which saw an influx of new vessels in 2023.

The growing age of the global fleet and implications for fleet renewal could emerge as a concern given the stringent GHG emission reduction targets introduced by IMO in 2023, as well as continued uncertainty about the outcome of current negotiations at IMO that aim to adopt a basket of midterm measures (fuel standard and price mechanism);

Box II. 1

“Avoid”, “shift” and “improve”: strategies to reduce greenhouse gas emissions from inland transport

In February 2024, the Inland Transport Committee of the Economic Commission for Europe of the United Nations adopted its landmark ITC Strategy on Reducing Greenhouse Gas Emissions from Inland Transport (ECE 2024). The Strategy provides integrated solutions for the reduction of GHG emissions from the inland transport sector with an aspirational goal of net-zero by 2050. The Strategy complements the IMO Strategy on Reduction of GHG Emissions from Ships and the long-term aspirational goal of the International Civil Aviation Organization (ICAO) for net-zero carbon emissions from aviation by 2050 (ICAO, 2022).

GHG emissions from global transport have continuously risen over the past decades across most world regions. The transport sector accounts for roughly 15 per cent of total GHG emissions and about 23 per cent of global energy-related carbon dioxide (CO₂) emissions (IPCC, 2022). Inland transport contributed more than 72 per cent of these emissions in the transport sector, with 69 per cent stemming from road transport (IPCC, 2022), which remained one of the fastest growing (1.7 per cent per year) among all global energy-using sectors (IPCC, 2022). These figures highlight the critical role of transport, particularly inland transport, in combating climate change, and the great potential it has to help countries meet their climate change mitigation goals.

While many United Nations Member States are already taking action to decarbonize transport, current transport policies and measures are insufficient to put transport on a decarbonization pathway in line with the 1.5°C target of the Paris Agreement. It is clear that further ambitious innovative action is needed (ECE, 2024a and 2024b). Meeting the 1.5°C goal and progressing towards achieving the Sustainable Development Goals implies a radical transformation of mobility and transport systems and for these to be prioritized in policy, regulatory and fiscal frameworks. The decarbonization strategy from the Inland Transport Committee greatly contributes to these efforts. It includes an initial climate action plan, with 33 coordinated actions for the Committee and its 21 subsidiary bodies, and it also recommends further actions for the inland transport sector of individual countries. The strategy follows a broad decarbonization framework based on “avoid”, “shift” and “improve” measures, which are defined as follows:

- Avoid: Reduce unnecessary vehicle kilometres by promoting compact development, increasing accessibility to services and minimizing the need to travel.
- Shift: Transition to low- and zero-carbon sustainable transport modes and operations.
- Improve: Enhance vehicles, infrastructure and operations to be more environmentally friendly.

The framework provides guidance for countries and the Inland Transport Committee and its subsidiary bodies to take concrete steps. With the adoption of this strategy, the ambitious goal of decarbonizing transport can be achieved across all modes of transport (air, inland and maritime transport) within the United Nations family.

Source: ECE, 2024.

Although the fuels of the future remain uncertain, **the greening of the global orderbook is under way**



Bulk carriers are relatively young, ~11.1 years in 2024, while general cargo vessels are the oldest (28 years)

the need to ensure the availability at scale of safe alternative fuels and related bunkering infrastructure; and current market trends discouraging fleet demolition and investment in newbuilds. By delaying fleet renewal decisions, these considerations mean that the global fleet will continue to age, and the shipping industry will not be operating a younger, more efficient and environmentally sustainable fleet.

Retrofitting older vessels is one solution, as this helps extend a vessel's economic life and ensures the ship remains competitive while compliant with environmental regulations. That said, retrofitting means downtime for ships, as the vessel is taken out of operation for extended periods, which reduces available capacity. Retrofits also

mean that older vessels could still lag behind newbuilds in terms of performance and efficiency (Ship Universe, 2024).

Bulk carriers are relatively young, averaging 11.1 years in 2024, while general cargo vessels are the oldest (28 years). Average ages for fleets by number of vessels across developed and developing country flags were comparable and hovered at around 22 years at the start of 2024 (table II.3).

Although, currently, over 30 per cent of fleet tonnage is made up of "eco" ships, which are typically at least 20 per cent more efficient at present-day speeds, a rapid transition to more sustainable shipping is necessary. The industry must renew its fleet and adopt newer, greener and more efficient vessels.



Table II. 3

The age profile of the merchant fleet: average ship sizes of the world fleet and fleet capacity in developed and developing economies

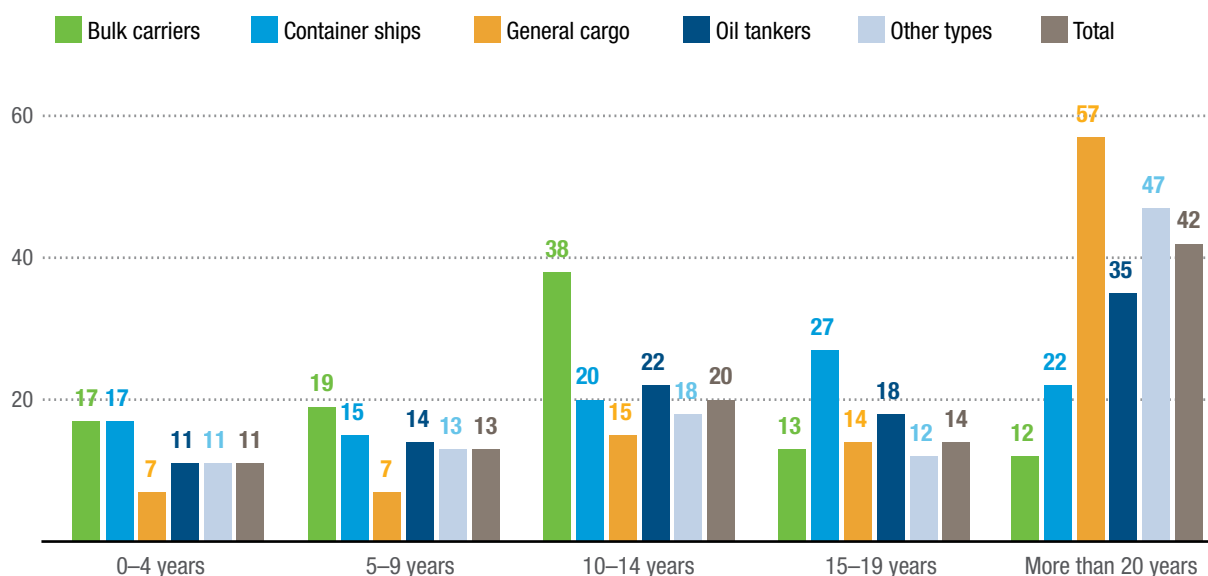
		Age group						
		0–4	5–9	10–14	15–19	More than 20		
Ship type	World average ship sizes in dead weight tons							
Bulk carriers		83 752	80 858	75 558	68 374	50 202		
Container ships		68 382	81 065	63 231	42 856	28 566		
General cargo		6 246	5 777	6 673	4 715	2 743		
Oil tankers		88 519	74 244	66 393	63 151	20 977		
Other ship types		7 942	7 144	4 554	6 764	3 109		
All ships		36 893	34 007	32 488	25 415	7 213		
		Age group					Average age	
		0–4	5–9	10–14	15–19	More than 20	2023	2024
Developing economies								
All ships	Percentage of total ships	11.6	12.5	21.3	14.7	39.8	20.9	21.3
	Percentage of dead weight tons	17.9	17.0	27.6	17.5	20.1	13.2	13.6
	Average ship size (dead weight tons)	25 930	22 763	21 772	19 929	8 464		
Developed economies								
All ships	Percentage total ships	12.3	13.8	20.0	13.8	40.1	21.3	21.8
	Percentage of dead weight tons	21.5	22.5	33.3	15.3	7.5	10.8	11.1
	Average ship size (dead weight tons)	54 417	50 640	51 745	34 487	5 801		

Source: UNCTAD calculations, based on data provided by Clarksons Research Services.

Note: Propelled seagoing vessels of 100 gross tons and above, as of 1 January 2024. Dead weight tons for some individual vessels have been estimated. The average age of a dead weight ton is calculated as the sum of all products of the age and dead weight tonnage of a ship, divided by the sum of the dead weight tonnage of all ships.

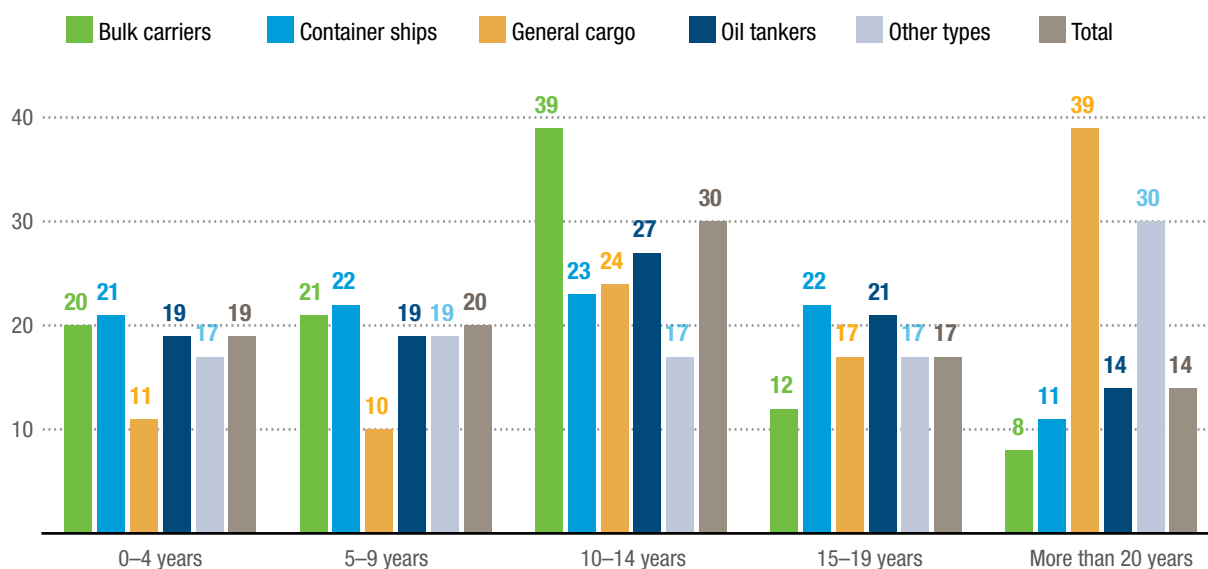


Figure II. 5
Average age of world fleet, percentage number of vessels, 2024



Source: UNCTAD calculations, based on data provided by Clarksons Research Services.
Note: Propelled seagoing vessels of 100 gross tons and above, as of 1 January 2024.

Figure II. 6
Average age of world fleet, percentage of dead weight tons, 2024



Source: UNCTAD calculations, based on data provided by Clarksons Research Services.
Note: Propelled seagoing vessels of 100 gross tons and above, as of 1 January 2024.

The industry must renew its fleet and adopt newer, greener and more efficient vessels

A newer fleet would replace outdated older ships, meet environmental goals and deliver on future demand for shipping capacity and services. This demand could be driven by market conditions or other factors, such as disruptions, as seen in the past four years.

Fleet renewal will require investing in newbuilt ships, retrofitting existing ones and scrapping older tonnage. However, limited ship demolition activity due to factors such as strong charter markets and demand for shipping capacity arising from disruptions and increased distances, is extending the lifespan of older vessels and delaying their removal. The need to transition to low-carbon fuels and comply with more stringent environmental regulations means the fleet must be renewed in a timely manner. However, uncertainty about the fuels of the future makes this more complicated. At the same time, the current orderbook is uneven. The largest shipping segments (dry bulk, crude, product and chemical tankers) are seeing limited renewal and seem less prepared to meet environmental goals. A concern in this respect is the low contracting activity in these segments and an orderbook that does not currently favour dual-fuel capabilities (Danish Ship Finance, 2023).

When a younger, greener fleet will be ready and available is uncertain. A greener fleet will depend on progress made in retrofitting the existing global fleet and shipyard capacity. While some shipyards may be able to build the ships of the future, others may need to invest in upgrades with regard to infrastructure, equipment, worker skills and technology. Going forward, it will be important to assess whether global shipyards have an adequate grasp of technology to ensure that ships are built to high-quality standards and can meet new efficiency and environmental standards in a smarter and faster way, without disrupting production lines (Dassault Systèmes, 2024).

There is also uncertainty around how fleet dynamics will develop in the longer term in tandem with the global energy transition. Some ship types are more likely to experience shortages or increased demand.

For example, demand for oil and coal is likely to decline, and iron ore demand is unlikely to increase materially. Meanwhile, other bulk commodities, such as minerals used for clean energy technologies, containers and chemicals, are likely to increase. The energy transition will boost demand for bulk carriers to deliver raw materials, such as metals and minerals (for example, chromium and cobalt) required for renewable energy projects. LNG bunkering vessels and specialized ships transporting captured CO₂ or hydrogen will also be in demand (BRS Shipbrokers, 2024).

Low demolition rates and strong second-hand markets are influencing investment in newbuilds and fleet renewal

In 2023 and during the first half of 2024, ship scrapping or recycling activity was subdued. Older ships were employed fulfilling opportunities that arose due to disruptions to shipping routes and benefiting from high freight rates. Continued uncertainty about the future regulatory framework and low-carbon ship technologies and fuels has also contributed to keeping ship demolition levels low.

A total of 431 vessels were sent for scrapping in 2023, 11 vessels less than the previous year. Demolition sales by tonnage increased 4.3 per cent over the previous year and reached 7.5 million gross tons or 0.5 per cent of the total active fleet (table 2.4). Volumes sold for scrapping in 2022 and 2023 were the lowest in over a decade. Following a 50 per cent reduction in 2022, volumes increased by only 4 per cent in 2023 (figure II.7).

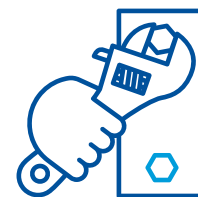
Most of the tonnage sold for demolition was made up of bulk carriers (40.7 per cent), container ships (24.8 per cent) and offshore supply vessels (10.6 per cent). Although more bulkers were scrapped in 2023, demolition levels remained limited. Following a near halt in 2021–2022, container ship demolitions resumed in 2023 although the need to reroute around the Cape of Good

Hope slowed some of the scrapping activity. A strong charter market meant that fewer tankers were scrapped during the year. Strong demand encouraged key players to either keep their vessels or sell them to third parties to be employed under the “shadow” fleet which, at the start of 2024, amounted to 7.4 per cent of the global active tanker fleet, and averaged 21 years of age (BRS Shipbrokers, 2024), that is, older than the general tanker fleet. Improved tanker market conditions, high freight rates, increased earnings, more employment for existing ships and higher value for older tonnage all contributed to limiting tanker scrapping.

A key development in ship demolition activity is the upcoming entry into force of the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships. Set to enter into force on 26 June 2025, compliance will mean additional expenditure and costs for ship demolition yards. For example, all facilities in India, which accounted for 7.1 per cent of total gross tonnage sold for scrapping in 2023, are currently compliant. In Bangladesh, which accounted for about 46 per cent of tonnage sold for demolition, one third

of the facilities are reportedly compliant or in the process of becoming certified. There remains uncertainty regarding Pakistan, another key player, as it currently lacks compliant facilities. The European Union is also lacking compliant recycling capacity and is reviewing its Ship Recycling Regulation (SRR). Since 2020, this regulation has required European Union-flagged ships to be recycled at an approved European Union facility (Allen, 2023). The SRR requires all large sea-going vessels sailing under the flag of a European Union member State to use an approved ship recycling facility included in the European List of Ship Recycling Facilities (European Commission, 2023a).

Although ship demolition activity is currently low, the pace of scrapping is expected to rise in the coming years as the pressure to renew the global fleet intensifies. The fleet of 240 steam turbine LNG vessels offers candidate ships for scrapping (Clarksons Research, 2024d), while an end to rerouting around the Cape of Good Hope (the precise timing of which is uncertain) is expected to send more container ships to scrapping yards.



Fleet renewal will require investing in newbuilt ships, retrofitting existing ones and scrapping older tonnage

Table II. 4
Ship tonnage sold for scrapping, 2023

Vessel type	Bangladesh	Pakistan	India	Türkiye	Brazil	Rest of the world	World total	Percentage share
<i>By type</i>								
<i>Thousand of gross tons and percentage share</i>								
Bulk carriers	2 185.9	582.9	0.0	254.6	0.0	18	3 041.5	40.7
Container ships	444.7	1 132.9	130.6	30.4	0.0	115	1 853.8	24.8
Offshore supply	110.2	93.7	140.5	11.4	273.3	163	792.2	10.6
Liquefied gas carriers	213.8	295.1	109.7	0.0	0.0	5	623.4	8.3
Oil tankers	201.4	102.7	1.8	74.4	0.0	35	415.6	5.6
General cargo ships	158.7	56.1	45.3	0.0	0.0	44	303.8	4.1
Ferries and passenger ships	26.2	15.5	83.8	0.0	0.0	11	136.7	1.8
Chemical tankers	3.2	98.2	0.0	0.4	0.0	7	109.1	1.5
Other/n.a.	74.9	88.5	18.1	0.0	0.0	17	198.4	2.7
Total gross tons	3 419	2 466	530	371	273	416	7 474	100.0
Percentage share	45.7	33.0	7.1	5.0	3.7	5.6	100	

Source: UNCTAD calculations, based on data provided by Clarksons Research Services.

Note: Propelled seagoing vessels of 100 gross tons and above.

The pace of demolition will also accelerate if more ship scrapping yards get approved; the European Union could approve some ship scrapping facilities in India, while Brazil and Egypt are considering entering the ship demolition business (Chambers, 2024a).

In 2023, the second-hand market, especially for bulkers, tankers and LPG carriers, remained firm, albeit slightly weaker than in 2022. This was driven by improved supply–demand factors in the dry bulk trade, disruptions to shipping routes and continued use of a shadow fleet. A moderate orderbook, the motivation to renew the fleet and higher newbuilding prices also supported the market. Sales and purchases of LNG carriers normalized following a period of strong activity and container ship transactions returned to pre-2021 levels. Underscoring the ageing profile of the global fleet, around 60 per cent of the second-hand ships sold in 2023 were above 15 years of age, a share well above the 45 per cent recorded in 2016–2019.

Beyond supply and demand, other factors may be influencing the shipping cycle

Although trade and fleet capacity remain the key drivers of the shipping cycle, other factors can impact the boom and bust cycle. Such factors include, as observed in recent years, an increase in distances travelled caused by ship rerouting onto longer routes. Extended ship journeys and longer distances result in increased ton-mile demand which, in turn, alters the actual supply of ships' carrying capacity. Continued regulatory uncertainty around the fuels of the future, together with underlying overcapacity are also at play and are affecting how the cycle operates.

Shipbuilding cycles typically follow patterns of expansion and contraction. Freight and charter rates serve as market signals that drive decisions about ordering new ships, putting ships in "idle" or "layup" status, buying or selling ships, as well as demolition. In the short term, the supply of shipping capacity is inelastic and cannot quickly adjust to changes in demand as it takes several years to build new ships.



This creates a time lag that is inherent to the shipping cycle and prevents supply and demand being aligned. For example, while orders of new ships may increase during boom periods, delivery takes place years later and might coincide with a weaker market.

Trends observed since the end of 2023 suggest some diversion from these usual patterns. There seems to be a new set of conditions affecting the shipping cycle since some disturbances in its functioning have been observed in recent years. For example, while container shipping conditions improved in the first half of 2024, the sector also grappled with volatile freight rates, underlying overcapacity, an ageing fleet, a need to plan for fleet renewal and to decarbonize. Together, these factors would normally mean an increase in the contracting activity of younger, greener vessels and higher levels of demolition, especially given the large deliveries of container ships in 2023 and 2024. However, as shown in figure figure II.8, during the first half of 2024, the market saw historically low ship demolition levels. The market also faced firm charter rates, largely supported by increased distance-adjusted demand. Furthermore, new container ships are still being ordered, although at a slower pace than in 2021, which saw a flurry of orders and contracts due to the global logistics crunch of 2020–2021.

Figure II.8 illustrates the time lag between ship deliveries and new contracts.

Demolitions and charter rates move in opposite directions as shipowners hold on to older tonnage expecting to take advantage of ship employment opportunities during good market conditions. New contracts typically rise in tandem with increases in ship earnings and charter rates. However, the figure shows that some deviation away from established patterns can also occur, as is the case in 2024. For example, while charter rates are currently surging and deliveries are growing, new contracts and demolitions remain relatively low.

Overall, the four variables (demolitions, deliveries, new contracts and charter rates) featured in figure II.8 are behaving according to established patterns. For example, as charter rates and new contracts increase, ship demolition declines. At the same time, the magnitude of the change between charter rates and new contracts seems to have changed since the COVID-19 pandemic. Historically, new contracts and charter rates tend to increase and decrease in tandem, with new contracts typically recording larger changes. However, since the pandemic, the scale of these changes has noticeably altered, with charter rates now showing more significant fluctuations than new contracts.

Although trade and fleet capacity remain the key drivers of the shipping cycle, **other factors can impact the boom and bust cycle**

➤ **Figure II. 7**
Ship tonnage sold for scrapping, 2015–2023

Source: UNCTAD calculations, based on data provided by Clarksons Research Services.

Note: Propelled seagoing vessels of 100 gross tons and above.

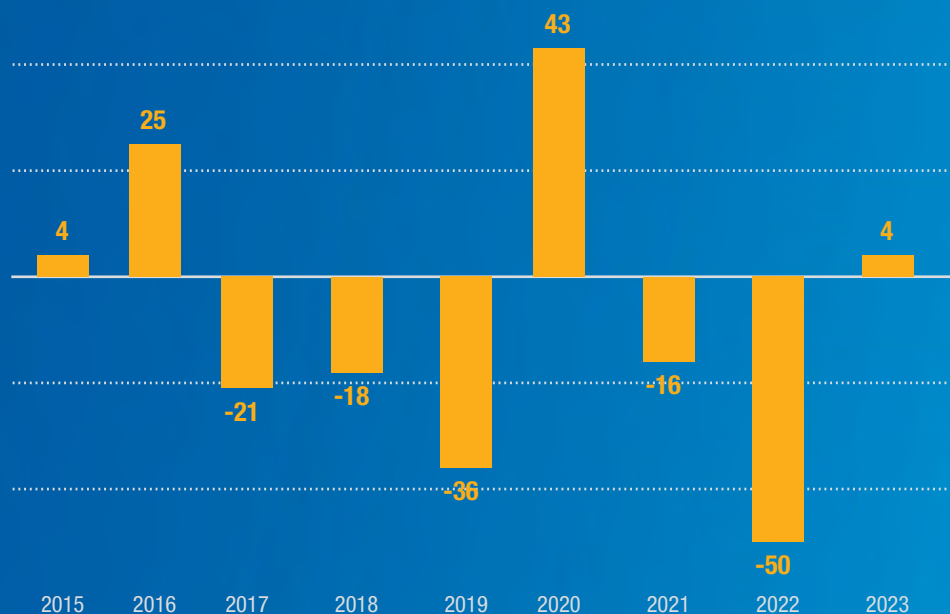
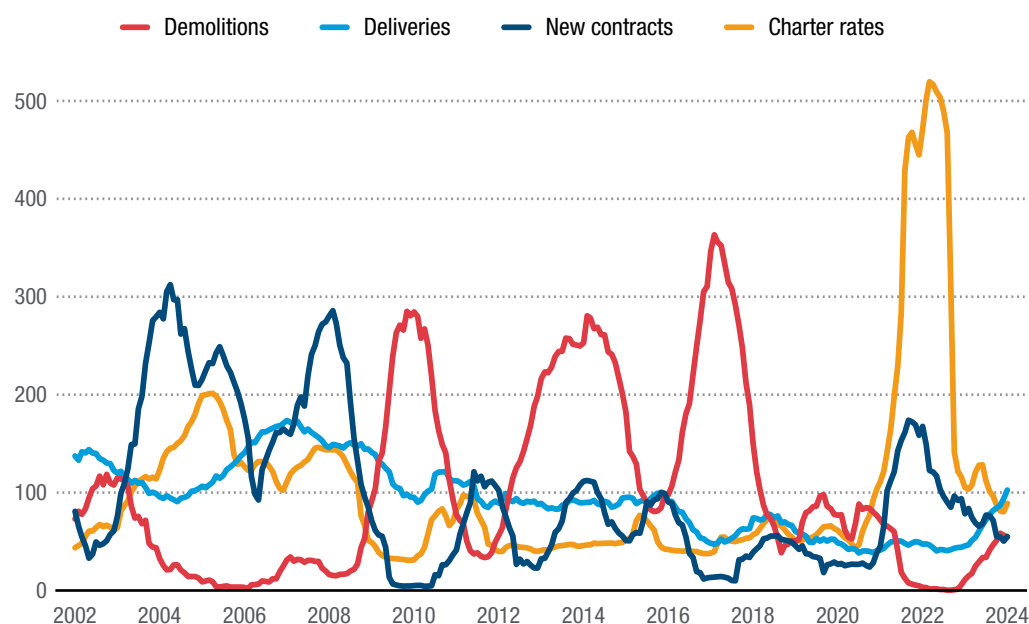




Figure II. 8
Container shipping cycle patterns



Source: UNCTAD calculations, based on data from Clarksons Research Services.

Note: Index average = 100; deliveries, new contracts, and demolitions are 12 monthly averages; deliveries, new contracts, and demolitions are in per cent of the world container shipping fleet in TEU. Charter rates are in dollars per day.

While freight rates and charter rates are correlated, using charter rates is more relevant to capture the cyclical nature of shipping and better reflect the cost and revenue structure of shipowners and operators who make the overall decisions relating to the shipping fleet.

In 2023, the top 35 flag registers accounted for 94 of the world fleet

These trends suggest that factors other than supply and demand are also shaping shipowners' decisions. These include shipowners' strategies aimed at gaining market share by, for example, holding on to older tonnage and delaying fleet renewal and demolition decisions. The age of the fleet (for example, whether the fleet is old and ready for scrapping or too young to demolish), disruptions that alter supply and demand ship carrying capacity (such as the Red Sea disruption) as well as uncertainty (for example, future fuels and green technologies) all affect shipowners' behaviour and influence their decisions. This in turn determines the shipping cycle patterns. In this context, further research is needed to assess whether the traditional shipping cycle is undergoing a fundamental shift and to identify the key factors driving this change (Perrotti et al., 2024).

Global fleet capacity is predominantly owned by developed economies but mainly flies the flags of developing economies

In 2023, the top 35 flag registers accounted for 94 of the world fleet. Eighteen of the leading registers were from developing economies and accounted for 76 per cent of the world fleet capacity. The top 10 flags of registration accounted for over 78 per cent of the world capacity (table II.5) and featured both open – that is, registers allowing registration of foreign-owned ships – and national (domestic) registers. These were, in order, Liberia, Panama, the Marshall Islands, Hong Kong (China), Singapore, China, Malta, the Bahamas, Greece and Japan.



Table II. 5

Leading flags of registration by dead weight tons, as of 1 January 2024

Rank	Flag of registration	Number of vessels	Share of world total vessels (percentage)	Dead weight tons	Share of world total dead weight tons (percentage)	Average vessel size (dead weight tons)	Growth in dead weight tons 2023 to 2024 (percentage)
1	Liberia	5 215	4.8	408 369	17.3	78 307	7.9
2	Panama	8 338	7.7	379 833	16.1	45 554	3.8
3	Marshall Islands	4 273	3.9	308 501	13.1	72 198	2.9
4	Hong Kong, China	2 487	2.3	200 378	8.5	80 570	0.0
5	Singapore	3 245	3.0	141 013	6.0	43 455	4.3
6	China	9 530	8.8	133 647	5.7	14 024	4.8
7	Malta	1 867	1.7	102 467	4.4	54 883	-6.0
8	Bahamas	1 266	1.2	72 438	3.1	57 218	0.5
9	Greece	1 211	1.1	56 279	2.4	46 473	-4.5
10	Japan	5 265	4.8	43 007	1.8	8 168	3.1
11	Indonesia	12 226	11.2	32 741	1.4	2 678	8.2
12	Cyprus	993	0.9	30 646	1.3	30 862	-3.0
13	International Shipping Register of Madeira	814	0.7	29 290	1.2	35 982	9.2
14	Danish International Register of Shipping	580	0.5	24 887	1.1	42 909	-1.4
15	Republic of Korea	2 162	2.0	21 221	0.9	9 816	12.0
16	Islamic Republic of Iran	984	0.9	20 779	0.9	21 117	0.3
17	Norwegian International Ship Register	690	0.6	20 139	0.9	29 187	-5.3
18	Isle of Man	262	0.2	19 355	0.8	73 873	-3.6
19	India	1 900	1.7	18 421	0.8	9 695	1.6
20	Saudi Arabia	443	0.4	14 287	0.6	32 250	6.6
21	Viet Nam	1 953	1.8	13 236	0.6	6 777	6.6
22	United States of America	3 501	3.2	13 215	0.6	3 775	4.7
23	Russian Federation	2 902	2.7	11 867	0.5	4 089	5.7
24	United Kingdom	843	0.8	11 135	0.5	13 209	4.2
25	Malaysia	1 778	1.6	9 440	0.4	5 309	-0.2
26	Germany	593	0.5	8 056	0.3	13 585	10.8
27	Cameroon	295	0.3	8 050	0.3	27 290	11.0
28	Belgium	191	0.2	7 974	0.3	41 751	-12.9
29	Palau	536	0.5	7 892	0.3	14 723	49.2
30	Italy	1 240	1.1	7 670	0.3	6 185	-15.8
31	France	492	0.5	7 512	0.3	15 269	28.2
32	Türkiye	1 203	1.1	7 230	0.3	6 010	8.4
33	Nigeria	945	0.9	6 866	0.3	7 266	16.2
34	Kingdom of the Netherlands	1 191	1.1	6 714	0.3	5 637	1.7
35	Bermuda	110	0.1	6 541	0.3	59 461	-7.1
Top 35		81 524	74.9	2 211 094	93.9	27 122	3.2
World total		108 789	100	2 353 899	100.0	21 537	3.4

Source: UNCTAD calculations, based on data provided by Clarksons Research Services.

Note: Propelled seagoing merchant vessels of 100 gross tons and above, as of 1 January 2024. Dead weight tons for some individual vessels have been estimated.

Over half of the world ship capacity is owned by owners in developed economies while most of the capacity is registered under flags of developing economies

The Liberian register, which surpassed Panama's register in terms of dead weight capacity in 2022 maintained the top position in 2023 (17.3 per cent) followed by Panama (16.1 per cent) and the Marshall Islands (13.1 per cent). In 2023, the registry of Liberia increased capacity nearly 8 per cent year-on-year, more than double the growth in the registers of Panama and the Marshall Islands. In terms of number of vessels, among these three economies, Panama held the largest share with over 8,300 vessels, followed by Liberia, and the Marshall Islands. Combined, the three leading flags accounted for 46.5 per cent of the global ship carrying capacity in 2023. Meanwhile, China (9,530) and Indonesia (12,226) had more vessels.

In 2023, except for 10 flags, capacity registered in the remaining top 33 registers increased but at varying growth rates. Palau, France and Nigeria saw particularly significant jumps, at 49.2 per cent, 28.2 per cent and 16.2 per cent, respectively. Consequently, these three registers moved up the ranks to feature in the top 35. The registers of Antigua and Barbuda, the Philippines, and Taiwan Province of China moved down and dropped out of the top 35 ranking.

Owners have direct control over their fleet and investment decisions, such as the size and type of ships, the board technology, the fuels, the engines and the propulsion systems to adopt. Global fleet ownership by vessel counts and capacity remains concentrated in developed economies, although some developing economies have made the top 10 list.

In 2024, over 70 per cent of the global ship capacity in dead weight tons and more than half of all vessels were registered under a foreign flag. This underscores a distinct feature of international shipping, where owners and flags of registration are generally two separate entities.

The proportion varies across economies. Some economies, such as Germany, Greece and Japan have over 80 per cent of their fleet capacity registered under a foreign flag. Bermuda, Monaco and Oman, have all their tonnage flagged out. At the other end of the spectrum, capacity in the Islamic Republic of Iran, Bangladesh, Indonesia and Saudi Arabia, is predominantly nationally flagged. For Indonesia, the nationally flagged capacity is mainly deployed in inter-island shipping, while in Saudi Arabia it largely reflects the nationally controlled oil tanker fleet.

In 2023, 17 developed and 18 developing economies, respectively made up the top 35 ship owning nations accounting for 52.3 per cent and 42.1 per cent tonnage, respectively (table II.6). Over half of the world ship capacity is owned by owners in developed economies while most of the capacity (76 per cent) is registered under flags of developing economies.

The contribution of developing economies to the ownership list is largely driven by China, Singapore, Hong Kong China, and Taiwan Province of China, all of which ranked among the top 10 ship owning nations. Fleet ownership is concentrated in Asia, Europe and North America, with a small share of owners from Nigeria (0.4 per cent) and Brazil (0.6 per cent) appearing in the top 35. While its share remained limited, Bangladesh (0.2 per cent) entered the top 35 list in 2023, while Kuwait dropped out of the ranking.

In terms of monetary value, the global fleet reached \$1.37 trillion in 2024 with the top 10 owners accounting for about two-thirds of the total value. Greece ranked first, followed by China and Japan (table II.7). The top 35 registers accounted for over 93 per cent of the global fleet value with the fleet of Panama concentrating close to 13 per cent of the total, followed by Liberia (12.6 per cent) and the Marshall Islands (11.9 per cent).

Table II. 6

World fleet ownership by capacity in dead weight tons and flag of registration, as of 1 January 2024

Country or territory of ownership	Number of vessels			Dead weight tons				
	National flag	Foreign flag	Total	National flag	Foreign flag	Total	Foreign flag as a percentage of total	Total as a percentage of world dead weight
1 Greece	580	4 406	4 992	49 985 667	344 971 148	394 977 181	87.3	16.9
2 China	6 600	2 772	9 418	130 737 555	178 336 427	309 870 897	57.6	13.3
3 Japan	959	3 142	4 104	38 689 931	203 666 970	242 366 672	84.0	10.4
4 Singapore	1 350	1 445	2 824	67 827 285	78 156 951	146 047 319	53.5	6.3
5 Hong Kong, China	869	1 104	2 000	76 961 461	57 939 090	135 586 887	42.7	5.8
6 Republic of Korea	826	852	1 688	19 896 324	77 045 438	97 020 891	79.4	4.2
7 Germany	172	1 918	2 091	7 492 926	66 931 088	74 427 230	89.9	3.2
8 Taiwan Province of China	144	890	1 043	5 826 691	54 846 644	60 735 889	90.3	2.6
9 United Kingdom including Isle of Man	334	928	1 267	9 070 489	47 538 877	56 980 416	83.4	2.4
10 Norway	936	898	1 836	17 331 399	36 441 844	53 903 936	67.6	2.3
11 Bermuda	0	420	420	-	52 293 715	52 293 715	100.0	2.2
12 United Arab Emirates	130	1 291	1 427	596 404	50 624 996	51 247 355	98.8	2.2
13 United States including Puerto Rico	770	1 010	1 788	10 477 424	39 245 905	50 416 065	77.8	2.2
14 Türkiye	401	1 619	2 030	6 623 393	40 174 680	46 849 025	85.8	2.0
15 Switzerland	14	647	661	835 748	40 293 135	41 128 883	98.0	1.8
16 India	926	345	1 275	17 670 993	23 006 477	40 697 051	56.5	1.7
17 Denmark	399	373	772	20 313 094	18 447 451	38 760 545	47.6	1.7
18 Indonesia	2 398	132	2 540	28 277 194	3 430 913	31 980 209	10.7	1.4
19 Monaco	0	337	337	-	31 699 502	31 699 502	100.0	1.4
20 Cyprus	113	311	424	3 939 325	25 272 183	29 211 508	86.5	1.3
21 Belgium	81	211	292	7 038 164	17 182 252	24 220 416	70.9	1.0
22 Russian Federation	1 551	269	1 828	10 708 028	10 997 997	21 726 655	50.6	0.9
23 Islamic Republic of Iran	240	13	254	18 340 397	679 712	19 021 661	3.6	0.8
24 France	144	309	453	4 145 965	14 162 666	18 308 631	77.4	0.8
25 Kingdom of the Netherlands	650	536	1 186	5 437 806	12 600 744	18 038 550	69.9	0.8
26 Viet Nam	938	212	1 158	12 097 561	5 446 178	17 561 034	31.0	0.8
27 Saudi Arabia	176	122	300	14 023 679	2 555 698	16 583 171	15.4	0.7
28 Brazil	297	86	384	4 687 509	9 423 957	14 116 966	66.8	0.6
29 Italy	420	163	583	6 789 366	6 762 515	13 551 881	49.9	0.6
30 Malaysia	442	164	618	6 435 077	3 539 337	10 016 263	35.3	0.4
31 Canada	216	158	375	2 645 448	7 351 057	9 996 989	73.5	0.4
32 Nigeria	218	72	298	5 341 412	3 371 996	9 344 789	36.1	0.4
33 Oman	3	69	72	518	7 727 130	7 727 648	100.0	0.3
34 Qatar	47	88	135	608 178	7 006 679	7 614 857	92.0	0.3
35 Bangladesh	276	6	282	5 107 202	190 469	5 297 671	3.6	0.2
Top 35	23 620	27 318	51 155	615 959 613	1 579 361 821	2 199 328 358	71.8	94.2
World	26 692	30 135	58 173	650 553 871	1 650 129 315	2 334 036 650	70.7	100.0

Source: UNCTAD calculations, based on data provided by Clarksons Research Services.

Note: Propelled seagoing vessels of 1,000 gross tons and above, as of 1 January 2024. The totals include vessels for which the flag is unknown. Thus, the sum of national and foreign flags equals the total. Foreign flag as a percentage of total is calculated as share of vessels with known flag.



Table II. 7

World fleet ranked by commercial value, as of 1 January 2024

Country or territory of ownership		Percentage share of total value	Flag of Registration		Percentage share of total value
1	Greece	11.8	1	Panama	12.8
2	China	11.6	2	Liberia	12.6
3	Japan	10.7	3	Marshall Islands	11.9
4	United States	7.7	4	Bahamas	7.2
5	Singapore	5.4	5	Singapore	6.2
6	Norway	4.5	6	China	6.1
7	United Kingdom	4.1	7	Malta	6.0
8	Hong Kong, China	3.9	8	Hong Kong, China	6.0
9	Republic of Korea	3.5	9	Greece	2.1
10	Germany	3.2	10	Japan	1.8
11	Switzerland	2.3	11	Norwegian International Ship Register	1.7
12	Bermuda	2.2	12	Italy	1.5
13	Taiwan Province of China	2.0	13	Cyprus	1.3
14	Kingdom of the Netherlands	1.8	14	Danish International Register of Shipping	1.2
15	Denmark	1.7	15	International Shipping Register of Madeira	1.2
16	United Arab Emirates	1.7	16	Bermuda	1.1
17	Italy	1.6	17	Indonesia	1.1
18	Brazil	1.4	18	United States	1.0
19	Türkiye	1.4	19	United Kingdom	0.9
20	Russian Federation	1.2	20	Russian Federation	0.9
21	India	1.2	21	Kingdom of the Netherlands	0.9
22	France	1.1	22	Republic of Korea	0.8
23	Indonesia	1.1	23	France	0.8
24	Monaco	0.9	24	Isle of Man	0.8
25	Cyprus	0.9	25	Norway	0.7
26	Malaysia	0.8	26	Malaysia	0.6
27	Belgium	0.8	27	India	0.6
28	Nigeria	0.8	28	Brazil	0.6
29	Saudi Arabia	0.5	29	Nigeria	0.6
30	Canada	0.5	30	Australia	0.5
31	Viet Nam	0.5	31	Viet Nam	0.4
32	Qatar	0.5	32	Türkiye	0.4
33	Sweden	0.5	33	Germany	0.4
34	Australia	0.5	34	Saudi Arabia	0.3
35	Angola	0.4	35	Antigua and Barbuda	0.3
Top 35 countries or territories		94.7	Top 35 flags		93.2
Rest of the World		5.3	Rest of the World		6.8
Total		100.0	Total		100.0

Source: UNCTAD calculations, based on data provided by Clarksons Research Services.

Note: Vessels of 1,000 gross tons and above.



B. Some factors currently shaping fleet renewal and greening trends

Asymmetrical and tiered global shipyard capacity and cost pressures have implications for renewing and greening the global fleet

Pressure on the shipbuilding sector and on shipyard capacity can influence the timely renewal of the global fleet and the pace at which it becomes greener. One estimate suggests that, at the current rate, it would take decades to build the green fleet required for the future (BRS Shipbrokers, 2024).

Global shipyard capacity faces a situation involving a capacity mismatch, with some yards being overbooked with limited yard slots, while others are underutilized and may even cease operating. Since 2010, shipyards have undergone restructuring, mergers and consolidation that have led to reduced global building capacity. Currently, there are around 314 active yards compared to 290 yards in 2022 and 700 in 2007 (BRS Shipbrokers, 2024). These facilities are tiered (tiers 1 and 2) and contribute uneven shares to the global shipbuilding output. Only 188 yards received new orders in 2023. This has led to constraints on yard slot availability in the overutilized facilities, with waiting times now about four years instead of two. It has also affected prices, with the costs of newbuilt ships over 40 per cent higher than in 2020 and 10 per cent higher than in 2022.

Tier 1 yards are in high demand, while tier 2 yards are underused. Around 100 yards in tier 1 control 65 per cent of global yard capacity and 90 per cent of the orderbook. Tier 2 yards control 35 per cent of the global yard capacity but attract only 10 per cent of the orderbook. The two tiers differ based on capabilities, expertise, market position, size, technological sophistication, reputation

and financial stability. Many of the tier 2 yards have been inactive since 2010; reactivating these would take time and will not necessarily mean that these yards are able to build the modern, low carbon-fuel vessels that are needed. Reactivating shipyard capacity has been incremental, and no new facilities have been reported. China successfully reactivated some facilities in 2023 (BRS Shipbrokers, 2024). Shipbuilding costs, including a shortage of skilled labour (Gordon, 2024), creates additional constraints. For example, to counter a shortage of workers, the Republic of Korea agreed with Thailand to have 3,000 welders and mechanics work in the five largest shipyards in the Republic of Korea (Drewry Maritime Research, 2024).

China has increased its contribution to the global shipbuilding output, contributing more than half. To date, shipyards in China are fully occupied for the next three to four years. This growing market concentration is driving a debate in the United States and the European Union about reviving their own shipbuilding sectors to reduce overreliance on a limited number of yards and countries. The Shipyards and Equipment Association called on European policymakers to devise a comprehensive European maritime industrial strategy (Chambers, 2024b). That said, yards in the European Union are less specialized in sectors such as container shipbuilding, and would need support to catch up with yards in Asia. Furthermore, building alternatively fuelled vessels requires sophisticated expertise and know-how.

Ship financing is also crucial. This usually comes in the form of government-backed loans, commercial banks, export credit agencies, private equity firms, shipbuilding consortiums or leasing and asset financing (Chambers, 2024c).



Global ship finance totalled around \$600 billion in 2023 (Petropoulos, 2024). Like shipyards, ship financing has also been downsized since 2010 and divided into tiers. Large lenders and signatories of the Poseidon Principles, which establish a framework for assessing and disclosing the climate alignment of ship finance portfolios, primarily focus on large clients involved in newbuilds, green ships and sustainability-focused projects. In 2023, the Poseidon Principles provided more than half of all global shipping finance. Banks outside the Poseidon framework have, for the moment, greater flexibility to finance older vessels or projects less focused on sustainability (Clarksons Research, 2024d). While ship finance has come under pressure, there is currently competition between lenders to provide finance to top tier clients. Smaller clients generally have limited capital availability and often struggle to acquire modern vessels (Lowry, 2023).

Shipping needs to manage an oversupplied container freight market

Another current theme in the shipping sector is overcapacity: too much ship capacity supplied for the demand. Once the current disruptions that are temporarily inflating the distance-adjusted demand fade away, overcapacity is likely to surface as a problem. For now, rerouting ships around the Cape of Good Hope has helped counteract the issue of surplus capacity by extending the distances travelled and boosting demand.

This issue is not new. The global fleet capacity growth has exceeded trade volume growth for several years. In container shipping specifically, growth in supply has consistently surpassed growth in demand for a large part of the past three decades. From 2010 to 2023, world fleet capacity increased by 78.5 per cent, while demand only increased by 34 per cent. During the same period, container fleet capacity almost doubled while trade volumes grew by 49 per cent. At the beginning

of 2024, the cellular container ship fleet, consisting of ships designed with specific compartments (cells) to carry containers, stood at 6,159 ships with a total capacity of 28 million TEU (Clarksons Research, 2024b). Capacity increased 8.2 per cent at the start of 2024 compared to the previous year and is projected to exceed the 30 million TEU mark in 2025 (Clarksons Research, 2024b).

Despite the large number of container capacity delivered in 2023 and low demolition levels, the container market coped surprisingly well in market conditions that were relatively subdued compared to the post-pandemic boom of the last two years. Capacity growth was moderated by the longer journeys associated with ship rerouting and compliance with the new IMO CII requirements. Increased distances and altered speed patterns have helped to manage capacity and mitigate capacity surplus. As of July 2024, overcapacity in container shipping continued to be masked by increases in the distance-adjusted demand. Meanwhile, reduced steaming speeds in compliance with the new EEXI and the CII regulations has also probably helped absorb capacity. However, 2023 data from AIS, the automated ship tracking system, shows a drop in sailing speed in 2023 but it not clear whether the speed reduction is directly attributable to the new IMO CII requirement. Figure II.9 and figure II.10 suggest that the speed of the global fleet may have dropped slightly in 2023 regardless of whether the vessels are covered by the CII rules or not.

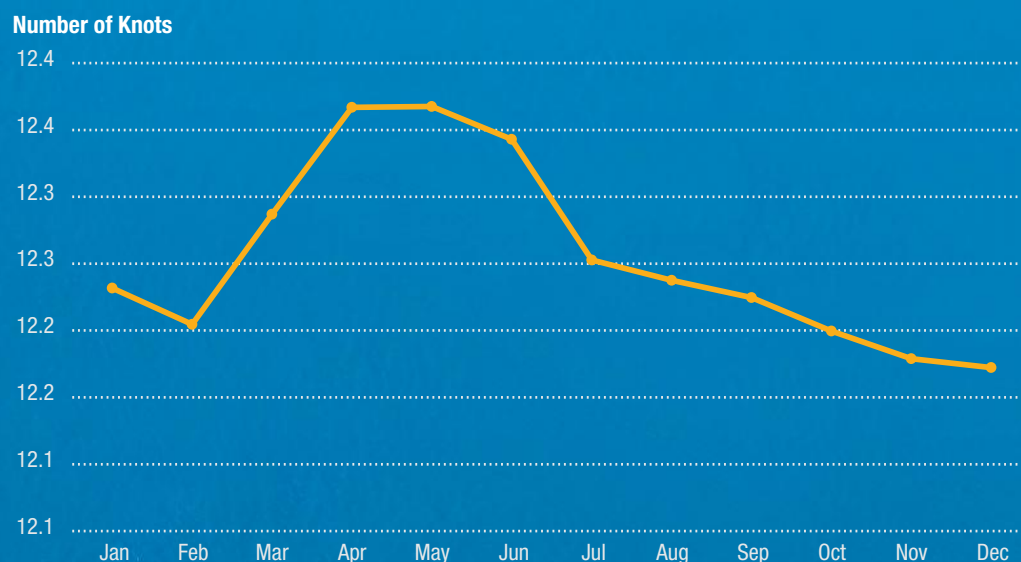
Reflecting capacity management strategies by carriers, the deployed capacity and the number of services operating between two maritime regions (for example, the Far East and North America) during the fourth quarter of 2023 compared to the same quarter in 2022, have declined. In contrast, allocated capacity increased on routes covering multiple maritime regions. For instance, routes connecting Europe and the Mediterranean with the Gulf and the Indian Subcontinent as well as with the Far East, have seen increased capacity over the same period (MDS Transmodal, 2024).

Overcapacity in container shipping was masked by increases in the distance-adjusted demand



Figure II. 9

Trends in sailing speeds of ships covered by the Carbon Intensity Indicator, 2023

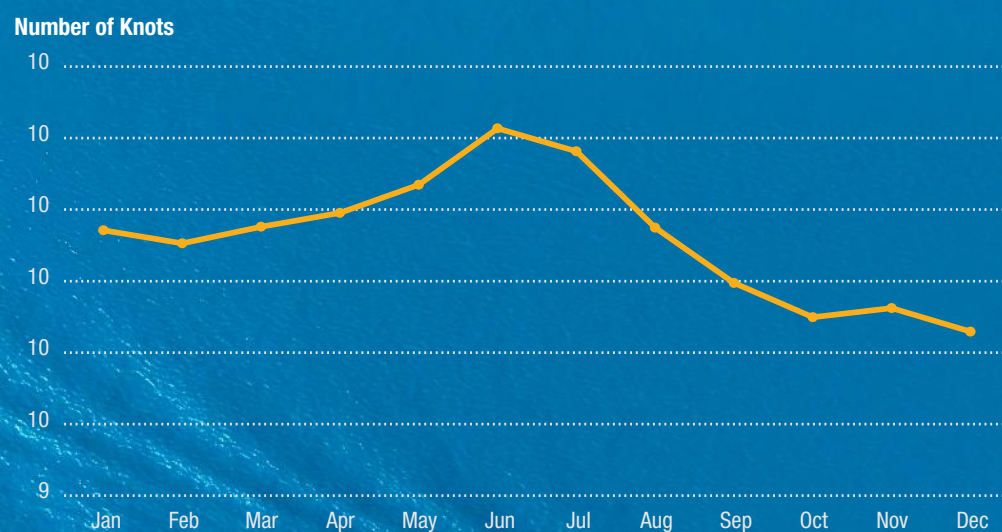


Source: UNCTAD calculations, based on data from Marine Benchmark, 2024.



Figure II. 10

Trends in sailing speeds of ships not covered by the Carbon Intensity Indicator, 2023



Source: UNCTAD calculations, based on data from Marine Benchmark, 2024.



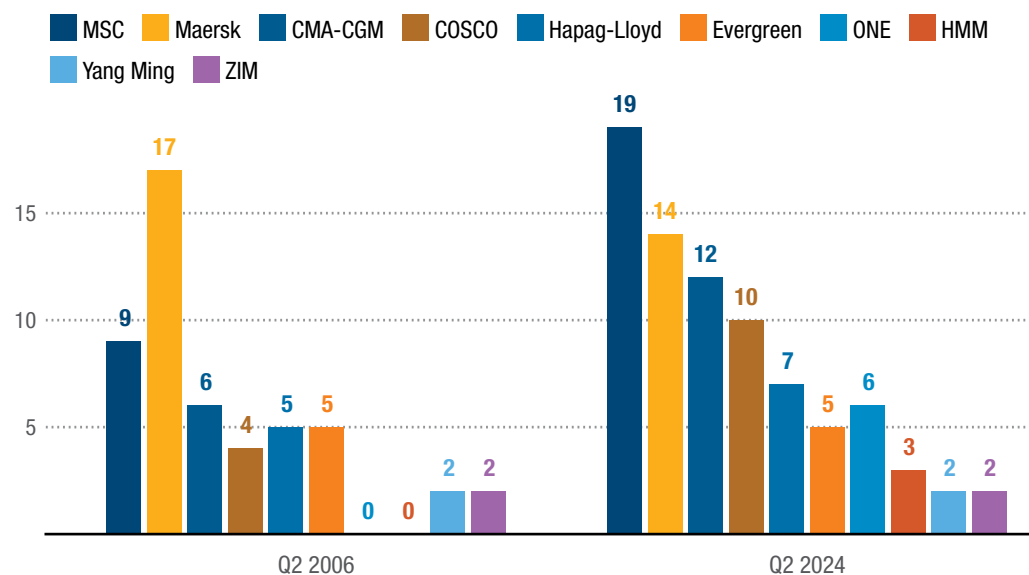
As rerouting trends eventually start to slow down – although the exact timing of this remains uncertain – overcapacity challenges are expected to resurface, and capacity management will become increasingly important. An unsustainable overcapacity in the industry will affect the re-employment of chartered ships as operators are now owners of most of the orderbook, and carriers will likely return the chartered ships. Increased cascading of capacity onto secondary routes arising from larger vessels is also likely. Market concentration could increase too, given that the top 10 container shipping lines own most of the ships being ordered (Danish Ship Finance, 2023).

Effective capacity management will be a priority for the shipping industry. Liners will have to make strategic decisions regarding their fleet and operations. In addition to temporarily taking ships out of service (“laying up”), more ships will need to be demolished, particularly as many container ships are suitable for scrapping. Slower steaming speeds will also help absorb

overcapacity, because carriers will need to add more vessels to service loops in order to maintain their schedules. The exact impact of the new IMO CII rules on speed is still uncertain. However, compliance with these regulations means that less energy-efficient ships will probably operate at lower speeds and more ships may be needed to meet demand. The EEXI rules has lowered the maximum speed of many ships that have installed engine power limitation, reducing the buffer between their maximum and service speed.

Elsewhere, the liner shipping market is undergoing new developments that could alter market competition levels and shares. The decisions by the Mediterranean Shipping Company (MSC) and Maersk to terminate their 2M alliance in 2025 has caused some market shifts. As the two carriers top the list of global liner operators by capacity (figure II.11) this decision is impacting the liner shipping market by changing how both these companies choose to operate and compete.

Figure II. 11
The share of the top 10 liner operators in the total container fleet capacity

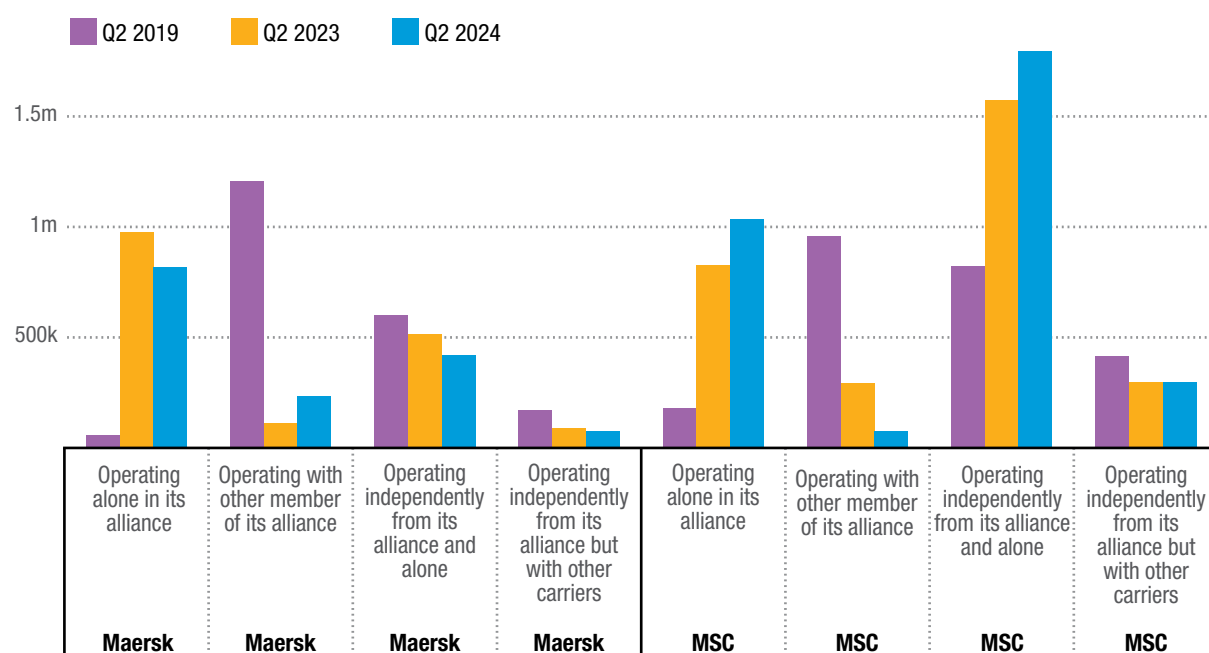


Source: UNCTAD calculations, based on MDS Transmodal data, accessed May 2024.



Figure II. 12

Container capacity scheduled to be deployed on services calling at ports in the United Kingdom and European Union



Source: UNCTAD calculations, based on MDS Transmodal data, accessed May 2024.

New patterns are emerging in how liner services are organized and how capacity is used. Members of the 2M alliance seem to have begun separating their operations ahead of this planned split, although this trend has recently reversed. This recent shift may well reflect renewed collaboration, possibly triggered by disruption in the Red Sea and resulting capacity shortages. As shown in figure II.12, MSC and Maersk have recently increased their capacity independently of each other.

In early 2024, Maersk and Hapag-Lloyd announced “Gemini”, a new cooperation agreement (Maersk, 2024). Starting in February 2025, the plan is to improve reliability to 90 per cent through efficient services, fewer mainliner stops combined with a strong shuttle network connected to their inland operations through their hub terminals (Baker, 2024). It will be important to monitor how these developments affect trade, freight rates, terminals and competition, as well as the connections between ports using the hub and spoke network.

Table II.8 sets out the market shares of major alliances, MSC, the Gemini cooperation agreement and other carriers, for key container routes covered by Gemini in the second quarters of 2022–2024. Ocean Alliance features in the leading position, followed by Gemini, MSC, “THE Alliance” and “other” carriers. Not every vessel operated by an alliance is necessarily operated as part of the alliance of which the carrier is a member. Additionally, alliances do not usually extend services beyond the main trading routes. As the market shares reported in table II.8 are estimated based on scheduled services during the second quarter of 2024, these estimates will overstate the actual market shares.

Another relevant development is the announcement by the European Commission in October 2023 not to extend the European Union legal framework which exempts liner shipping consortia from the European Union antitrust laws, known as “Consortia Block Exemption Regulation” or the CBER.





Table II. 8

Estimated market shares in percentages across the trade lanes to be covered by the new Gemini cooperation agreement

	Ocean Alliance			Gemini Cooperation			MSC			THE Alliance			Other		
	Q2 2022	Q2 2023	2024 Q2	Q2 2022	Q2 2023	2024 Q2	Q2 2022	Q2 2023	2024 Q2	Q2 2022	Q2 2023	2024 Q2	Q2 2022	Q2 2023	2024 Q2
Europe and Mediterranean - Far East	40	40	39	26	22	25	12	14	18	19	19	14	4	5	3
Europe and Mediterranean Med - Gulf and Indian Sub-Continent	20	20	18	46	41	36	26	30	35	2	2	3	6	7	8
Europe and Mediterranean - Gulf and Indian Sub-Continent - Far East	37	36	28	24	20	10	30	25	35	8	16	18	1	3	9
Europe and Mediterranean - North America	19	22	24	35	34	40	30	24	20	2	2	3	14	18	14
Far East - North America	40	43	45	15	13	13	14	7	6	17	29	25	14	9	11
Far East - North America - Latin America	34	35	32	26	23	26	10	12	16	15	13	9	16	16	17
Gulf and Indian Sub-Continent - Far East	32	33	26	10	8	8	5	5	7	12	13	11	41	41	49
Gulf and Indian Sub-Continent - Far East - North America	38	19	25	34	29	27	0	20	14	28	32	26	0	0	7

Source: UNCTAD calculations, based on MDS Transmodal data, Containership Databank, Q2, 2024.

At its peak, the CBER covered around 60 consortia serving the European Union trades, compared to the current 43. The expiry of the CBER does not mean that cooperation between shipping lines becomes unlawful under European Union anti-trust rules. Instead, carriers operating to or from the European Union will assess the compatibility of their cooperation agreements with European Union anti-trust rules based on the guidance provided in the Horizontal Block Exemption Regulation and

Specialization Block Exemption Regulation (European Commission, 2023b). It is not clear yet how this development will impact on the liner shipping market and trade. As CBER did not cover major alliances but covered instead consortiums involving companies with combined market shares not exceeding 30 per cent, the impact can be expected to be limited. Nevertheless, there will be some legal uncertainty for carriers in the short term (Drewry Maritime Research, 2023).



C. Policy considerations

The shipping industry is facing a complex environment characterized by uneven and unbalanced capacity across different segments and a slow but ongoing transition to low carbon shipping. Geopolitics, vessel rerouting, an ageing fleet, a relatively moderate global orderbook, shipbuilding constraints, underlying container ship overcapacity and restructuring in the liner shipping market are factors currently driving the industry's outlook. The interplay of these wide-ranging factors is influencing decisions by shipowners and operators. Shipping will likely be dealing with excess container ship

capacity when the distance factor subsides and probably experience more market shifts. There is also uncertainty about the impact of environmental compliance on steaming speed, availability of capacity and compliance costs.

Leveraging potential opportunities and addressing challenges while navigating a highly disrupted maritime transport ecosystem requires collaboration among all stakeholders, including shipping, related industries, ports, traders, shippers, as well as policymakers, regulators and Government.

Concerted action should focus on the following priorities:

1. **Planning and collaboration.** Promote strategic planning, risk management and stakeholder collaboration to address emerging trends, regulatory requirements and shifts in market dynamics amid the evolving landscape for operations.
2. **Monitoring and analysis.** Monitor shipping markets and improve understanding of factors affecting the shipping cycle and their influence on market behaviour and strategic decisions by key industry players. UNCTAD has established analytical capabilities in maritime transport and trade, as well as extensive maritime statistics and data that can be leveraged to inform efforts in this field.
3. **Regulation.** Improve regulatory certainty to support rapid shift to low carbon shipping and investment in fleet renewal. This includes supporting GHG reduction targets set out in the 2023 IMO Strategy. UNCTAD is currently collaborating with IMO by conducting a comprehensive impact assessment of the basket of candidate midterm GHG reduction measures.¹
4. **Investment and partnerships.** Tackle the constraints undermining shipbuilding capacity by investing in shipyard infrastructure, services, technology upgrades and workforce development, as well as enhanced collaboration and partnerships between shipbuilders, shipowners, suppliers, financiers and lenders, research institutions and government agencies.
5. **Monitoring, reporting and assessment.** Monitor ship carrying capacity trends, particularly in the container shipping segment, and ensure the excess in ship capacity is effectively managed to prevent an unsustainable overcapacity burden. UNCTAD will continue to monitor relevant developments and report on key trends and assess implications for the transport and trade of developing countries.

¹ IMO, available at <https://www.imo.org/en/OurWork/Environment/Pages/Assessment-of-impacts-on-States.aspx/>.



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