BRS GROUP

SHIPPING AND SHIPBUILDING MARKETS

Annual Review

2022

Contents

Shipping & Shipbuilding Markets

570
Employees worldwide

230
Shipbrokers

100
Assets transactions per year

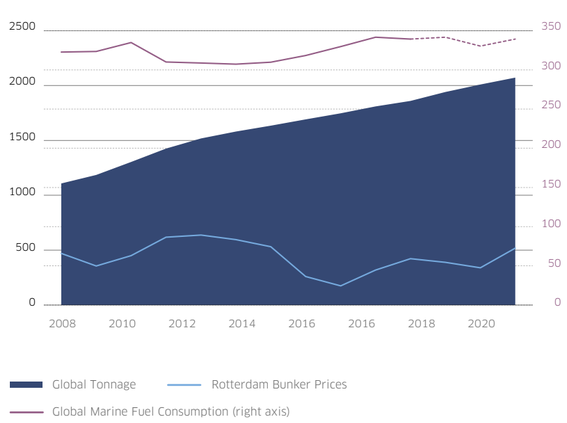
5,500
Chartering transactions per year

BRS Group is focused on the world, people and technology through its two main affiliate companies, ***BRS Brokers*** (www.brsbrokers.com), a global and international shipbroking company, and ***AXSMarine*** (www.axsmarine.com), a maritime data and software provider delivering decision support services.

We can do it now

2021 was both an exciting and a dramatic year. Twelve months ago, I was hopeful that our pandemic-induced trials would be behind us by early 2022. Unfortunately, we will have to be patient and surf on a few additional variant waves before they subside for good. All historical plagues stopped at a certain point in time. 'Spanish Influenza' started in March 1918 and ended in July 1921. Let's be optimistic!

Global Fleet* Evolution v Marine Fuel Consumption



excludes offshore segment and vessels under 3,000 Dwt

Green House Gas (GHG) emissions and their elimination comprised the overriding theme of the year. There is a palpable urgency across the world to seriously engage in the fight against climate change in which every industry is involved and bears its own responsibility. Based on IMO data, the volume of marine fuels (HFO, MGO, MDO, LNG, LPG and methanol) consumed has remained extraordinarily stable since 2008 oscillating between 310 and 340 m tonnes of oil equivalent despite the merchant fleet doubling in size from 1,108 m dwt (or 30,864 ships) to 2,072 m dwt (or 40,588 ships). This probably reflects two factors. Firstly, a reduction in service speed, especially for large container carriers going from 22-25 knots prior 2008 to 18-20 knots or less. Secondly, the fruits of the 'eco-revolution' that took place in naval architecture in the early 2010s allowing a reduction of 20-40% in the daily fuel consumption of newbuildings.

The IMO still envisages cuts of 70% to CO_2 and 50% to GHG emissions by 2050, when compared to 2008 levels. Furthermore, it has mandated an intermediate milestone of cutting CO_2 emissions by 40% by 2030, although ships are typically designed and built to last for 30 years. Quite a conundrum! To reach these IMO goals, the shipping industry needs to find the optimal mix of technical and operational measures and innovative solutions.

But the shipping industry could do the necessary now

and show its leadership by simply adopting slow steaming. A 20% reduction in service speed would result immediately into a 50% drop in CO_2 and GHG emissions.

We could go one step further and reduce the design service speeds of bulkers and tankers from about 13-14 kt to about 11-12 kt and of container carriers from 18-20 kt to 13-14 kt. Yes, we might need some additional tonnage to cope with the reduction of speed but before coming to that point we could also further optimize ships (main engine, propeller, auxiliaries), adopt higher bloc-coefficients and larger deadweight, design smaller engine rooms and develop enlarged cargo capacity.

We could also search for better logistical efficiencies resulting in more consistent speed profiles. It is heart-breaking to witness ships sailing at full speed only to slow down and wait for days/weeks/months especially in 2021 before delivering their cargo or crossing oceans in ballast at full speed. We could also envisage more flexible ships capable of always being loaded such as new Oil Bulk Ore carriers (OBO) to avoid large bulkers and tankers sailing empty 50% of the time.

The shipping industry must show real leadership and reinvent itself. Strangely, if global consensus leads to the fundamental and swift termination of fossil fuels, the main issue for the shipping community in the next thirty years will not really be the reduction of emissions from ships. The phasing out of fossil fuels (coal, oil, gas) which account for 40% of cargo transported by sea will have a much greater impact on shipping activities as we know them. There is no historical precedent in the maritime industry for the simultaneous termination of multiple commodities (coking coal, steam coal, crude oil, petroleum products, LNG, LPG) apart from the crude oil crisis of the late 1970s which stopped the construction of super tankers and sent much of the tanker fleet directly from shipyards to scrap yards.

In actuality, it is hard to say that the switch away from fossil fuels is accelerating. Apart from the downwards blip in 2020 when the global economy almost stopped, volumes of coal, oil and gas transported by sea have increased rather than decreased over the past decade. Phasing down will probably be the chosen path rather than an abrupt phasing out. The realpolitik that emanated from COP26 clearly showed that developing countries are not going to trade-off economic growth for lower emissions, or at least not yet. Therefore, as developing economies grow, fossil fuels will continue to 'peak' in the years to come. There will be an eventual phasing out of fossil fuels: coal will disappear first but will be substituted with gas which could slightly outlive crude oil.

We have to hope that science and technology will save us from these vicissitudes and bring us a completely novel solution unknown today. If you asked a postman in the 19th century how to speed up letter delivery he would have asked for a speedier horse and never contemplated the concept of email. As we wait for the required quantum leap in innovation, the shipping industry can show its leadership and bring the 330 m tonnes of marine fuel consumed per year (or about 1 billion tonnes CO_2 released into the atmosphere!) down to 165 m tonnes (or about 500 m tonnes CO_2) almost overnight, which incidentally still remains too high. This makes all current developments in dual fuels whatever they are (natural gas, biogas, e-methane, e-methanol, ammonia, hydrogen etc) and alternative propulsion truly imperative and in merit of being pursued with great determination.

François CADIOU
Chairman

Striking photograph that captures our imagination of a rugged sea which seems to form the figure of the angry ancient Greek God Poseidon in a spur of foam during Storm Justine that hit Brittany (France) in January 2021. Taken by photographer Mathieu Rivrin.

Carbon Markets

Carbon markets: what are we talking about?

Over the last decade, Nations of the world have embarked on concerted efforts to meet the challenge of climate change. Almost 200 countries signed up to the United Nations-led Paris Agreement in December 2015, thereby committing to tackling climate change and keeping the temperature of the globe from rising by more than 1.5°C when compared with pre-industrial levels. Governments worldwide have already agreed on these goals; now it is time for businesses to act.

THE CONCEPT

Policymakers have come up with several instruments to discourage greenhouse gas emissions into the atmosphere. These usually follow the polluter pays principle and can be sorted into three categories, from the simplest to the most advanced system:

Regulations.
E.g., retailers in some countries are no longer allowed to distribute free plastic bags; customers must either pay for one or take along their own bag.

Direct carbon taxes.
E.g., An eco-surcharge for motor vehicles that emit more CO_2 than the limit set by the local government.

Carbon markets
E.g., the oldest and largest carbon market: the European Emissions Trading System (EU-ETS)

Instead of banning, imposing thresholds, or implementing a fixed price on greenhouse gas emissions, in the way a regulation or a tax would do, carbon markets turn emission reductions and removals into tradeable assets. Despite being described as a "carbon market", there are in fact multiple markets for carbon trading. However, carbon credits that are bought and sold in one market are rarely valid in another.

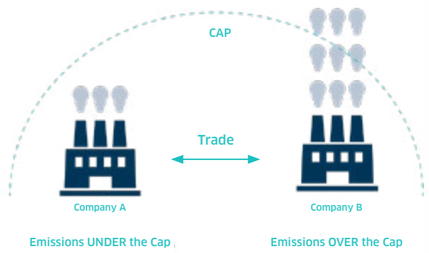
The term "carbon trading" is most often used to describe a market that exists for carbon credits within a regulated scheme, such as the European Union Emissions Trading Scheme (EU ETS), California's greenhouse gas scheme or the Regional Greenhouse Gas Initiative (RGGI) in the North-eastern United States.

Regulated carbon markets are different by nature and purpose compared with voluntary carbon markets, and these two must not be confused. Accordingly, this Chapter is divided into two parts, to mark the distinction between these two markets.

REGULATED CARBON MARKETS

Regulated carbon markets are schemes that require businesses whose emissions exceed a defined threshold, or who operate in specific industry sectors, to obtain a permit, called an allowance, for each tonne of carbon dioxide equivalent that they emit annually. Every year, these businesses will give back (surrender) to the regulation authority enough allowances to cover their yearly emissions to comply with the system. Hence, these markets are often called compliance markets.

Regulated / Compliance markets are based on the cap-and-trade principle: unlike fixed carbon taxes, governments set an overall limit or cap on the amount of emissions that are allowed from the sectors in the scheme, then issue allowances up to the agreed limit. The limit decreases annually if the aim is to reduce emissions over time. Allowances are either given free or auctioned to companies in the sector. The amount of allowances a company receives for free depends essentially on its industrial sector and performance compared with its peers. If a company manages to curb its emissions significantly, it can trade the excess allowances received for free on the carbon market. If it is not able to limit its emissions, it may have to buy extra allowances.



Creating a market for something with no intrinsic value such as carbon dioxide is difficult. The regulator has to promote scarcity, impose heavy fines in case of non-compliance, although also foster liquidity on the market so that allowances can easily be traded so that market forces efficiently dictate the price. The flexibility that trading brings ensures that emissions are cut where it costs least to do so. Eventually, a robust carbon price promotes investment in innovative, low-carbon technologies and makes economically unviable the most polluting ones.

The European Emission Trading Scheme (EU-ETS)

The European Emission Trading Scheme (EU-ETS) is the world's first international emissions trading system. It was launched in 2005 and has grown to cover about 45% of the total CO_2 emissions in Europe plus Norway, Iceland, Liechtenstein, and Switzerland.

The EU-ETS, like most regulated carbon markets, works on the cap-and-trade principle. A cap is set on the total volume of CO_2 that can be emitted by the sectors covered by the system. The cap is reduced annually so that total emissions fall. Within the cap, installations (one installation = one furnace, one boiler, or one ship) receive or buy permits called emissions allowances (EUAs) and can trade with one another as needed. Each year in April, installations surrender enough allowances to cover their emissions from the previous year.

In the early stages of the EU-ETS, many allowances were given for free to industrial installations, hence only power plants had to buy allowances. The main goal back then was to increase the competitiveness of gas-fired power plants over coal-fired ones, as the latter is broadly twice as polluting as gas. Over time, the system evolved to include more sectors, such as aviation which joined in 2012, and rules became gradually more stringent to cut emissions quicker. Accordingly, the cap was lowered, and therefore the overall amount of EUAs reduced (given for free and auctioned). The prices of EUAs started to climb in 2018, this would make not only more polluting technologies obsolete, but would also spur investments in energy efficiency technologies because companies that overachieve their goals can sell their emissions allowances on the market.

2021 witnessed a sharp rise in CO_2 prices which had been hovering otherwise between €15 and €30/mt during 2019 and 2020. The 2021 upward trend was driven by soaring stock markets, calls for more stringent emissions regulation, and increased interest from speculators. The 2021 compliance in April was the most expensive ever, with carbon prices reaching around €50/mt. On 14 July 2021, when the EU Commission published its "fit for 55" package, carbon prices quickly jumped above €60/mt.

Over the last two months of last year, the carbon contract accumulated gains and broke records on a quasi-continuous basis. This was driven by soaring natural gas prices which led other European energy prices higher, even more ambitious climate targets coming from large EU economies, a positive COP26 outcome and increased speculative activity. All told, this pushed carbon to a new record high close to €100/mt.

The price of European emission allowances has tripled in 2021

EUA Futures (daily closing prices)

Shipping and the EU-ETS

From 1 January 2018, ships over 5,000 gt loading or unloading cargo or passengers at ports in the European Economic Area (EEA) are required to monitor, report, and verify (MRV) their related GHG emissions and other relevant information. Following the adoption of the European MRV regulation, the IMO established the similar IMO Data Collection System. As a result, from 2019, ships calling into EEA ports have to report under both the EU MRV Regulation and the IMO Data Collection System.

In the European Commission work program for 2021, initiatives linked to the European Green Deal and in particular the emission reduction target of 55%, has put extra pressure on polluting sectors, of which shipping is one. On 14 July 2021, the European Commission released the "Fit for 55" package, a sweeping set of policy proposals spanning all major sectors of the economy. Its aim is to achieve an emission reduction of at least 55% below 1990 levels by 2030. The package places the European Emissions Trading Scheme (ETS) at the heart of the EU's decarbonization agenda and mandates several major changes, notably, tightening key ETS parameters and including the maritime sector into the ETS' scope from 2023 onwards.

Only vessels **bigger than 5,000 gross tonnage.**

Emissions released when travelling **between EU ports.**

Half of the emissions released when travelling **from/to a NON-EU country.**

Antwerp (BE) → Marseilles (FR) : 100%
Houston (USA) → Amsterdam (NL) : 50%

If approved by the Parliament, the proposal to add shipping in the ETS would add on top of the MRV, the obligation for ship owners or operators to buy enough emission allowances to cover their verified emissions. Emissions from voyages between EU ports or at berth will be accounted fully, while only half of the emissions from / to a non-EU country to the EU will be accounted.

Industries included under the ETS receive part of the allowances they must surrender each year for free. The free allocation is calculated using various benchmarks and decreases annually. Ships are not going to receive allowances for free, so the EU has accepted to 'discount' the number of allowances to surrender by 80% in 2023, 55% in 2024, 30% in 2025, and 0% by 2026. Therefore, the shipowner or charterer will have to surrender as many allowances as the ship emits by 2026.

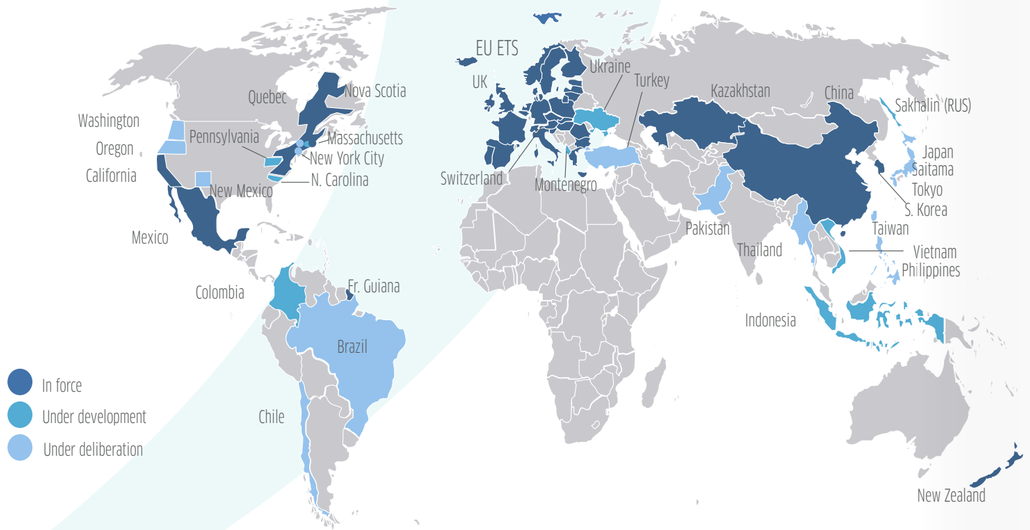
Other carbon emission systems

As of 31 January 2021, there are 24 emission trading systems active in the world. Another eight are under development and expected to be in operation in the next few years.

Fixed installations have to comply with the emission system in place in the country they are emitting. However, ships are moving objects and their GHG emissions are spread over the territories the ship navigates in. What would happen if these systems do not agree on common Measurable, Reportable, Verifiable (MRV) rules and even worse, a common carbon credit? Would it mean that a vessel navigating near the coast of 5 different nations plus in international waters would have to comply with 6 different systems?

No ETS system other than the EU-ETS is currently planning to include maritime emissions. Furthermore, to make sure the EU-ETS will not apply a double burden on international players, the EU Commission and Parliament are planning exemptions if the IMO eventually introduces its own market-based measures to tackle shipping emissions at global level.

There are 24 emission trading systems active in the world

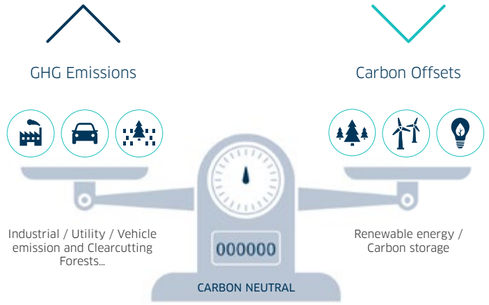


Picture: ***EMISSIONS TRADING WORLDWIDE.***

VOLUNTARY CARBON MARKETS

The second type of carbon market is, as its name suggests, a market where companies can, but are not obliged to participate in. Voluntary carbon permits, called carbon offsets, are generated from emission reduction projects that carry on-the-ground emissions reduction activities (carbon capture and storage, a solar farm, forest conservation or reforestation etc.).

Carbon offsets, although sometimes described as rights to pollute, need to be better understood as they constitute an effective tool to reduce the carbon footprint when reducing one's own emissions becomes physically impossible or uneconomical. One carbon offset is a measurable, quantifiable, and trackable unit of greenhouse gas (GHG) emissions reduction, expressed in metric tonne of CO_2 equivalent. These credits can be bought and subsequently cancelled (the carbon offset is "destroyed") by any business or individual willing to offset their greenhouse gas emissions and claim its benefit. Since greenhouse gas pollution is global (it affects the atmosphere equally no matter where it is emitted), the climate benefit is the same no matter where emissions are avoided or removed. For example, a company producing goods and emitting CO_2 in Germany could compensate its emissions and declare itself carbon neutral if this company buys carbon offsets linked to a reforestation project in Ghana.



The credits exchanged on the voluntary market are seldomly accepted in compliance markets.

Compensate your Carbon Footprint to become Carbon Neutral

Voluntary actions on climate change can strengthen the brand image, consolidate business, and help clients to gain new customers and reduce the carbon risk exposure.

What source of CO_2 emission are taken into account and what should a company offset?

Scope 1

Greenhouse gas emissions from sources owned and controlled by the company.

Facilities

Scope 2

Greenhouse gas emissions from electricity, heat or steam purchased by a company.

Purchased electricity, steam, heating and cooling for own use

Scope 3

Greenhouse gas emissions from sources not owned or directly controlled by the Company but related to the Company's activity.

Over time, the voluntary carbon market has evolved and matured into a robust and effective means to tackle climate change

Several logistics, fashion and manufacturing companies are close to becoming net-zero carbon emitters over the next 4-5 years as their Scope 1 and 2 emissions are mainly associated with electricity consumption. The focus now is on the shipping emissions that fall within Scope 3. It is difficult to reduce these emissions because of the limited and costly technologies available. Investing in alternative fuels and energy efficiency improvements are the only solutions available today.

Over time, the voluntary market has evolved and matured into a robust and effective means to tackle climate change by driving resources to projects which deliver independently verified and additional emissions reductions on a global scale. Despite the pandemic, the cancellation of carbon offsets hit a record level in 2020, with 15.8 million emissions reductions retired, a 28% increase over 2019.

What are the steps to Carbon Neutrality?

1. Measure	Choose scope and methodology. Calculate carbon footprint. Verify calculation by 3rd party verifier.
2. Reduce	Map possible reduction areas in house. Plan reduction measures. Implement changes and monitoring plan.
3. Compensate	Choose the projects you wish to support. Buy and retire the credits. Receive retirement proofs.
4. Communicate	Communicate and disclose yourclimate efforts to your stakeholders.

1 t/CO_2e avoided and verified

= 1 credit issued

OPPORTUNITIES FOR SHIPPING COMPANIES

Projects eligible to receive carbon offsets vary widely, and a lot of different methodologies exist that are approved by external independent certifiers: Verra and Gold Standard are the world's largest.

Energy efficiency improvements installed on ships which aim to reduce its fuel consumption and respect the methodology of an external certifier, may be eligible to receive carbon offsets as an incentive. Ship owners that plan to implement (or have already implemented) efficiency upgrades on their existing fleet could, under certain conditions, claim carbon offsets related to the CO_2 emissions avoided. Existing methodologies include, but are not limited to: engine tuning, common rail technology, air lubrication, vessel trim, advanced hull coating, wind technology etc. It is assumed that some technical improvements will be made to a ship at each dry-docking independent of the availability of carbon credits (including, but not limited to, standard dry-docking maintenance and improvements and hull cleaning). To claim carbon credits, the shipowner has to make one extra step to abate the emissions of his ship.

Once the emission abatement is proven and verified, the owner of the ship will receive one carbon offset per tonne of CO_2 avoided. They can either decide to cancel the credit on their behalf, to claim that their ship is greener, or they can sell the credit on the voluntary market. For each tonne of maritime fuel saved, the owner receives approximately 3 carbon credits which, at the time of writing, were worth about $15 each.

Credits types

CER	Certified Emission Reduction
VCS	Verified Carbon Standard
GS	Gold Standard
REC	Renewable Energy Certificate

Credits standards

VERRA Gold Standard

THE INTERNATIONAL REC STANDARD

UNFCCC

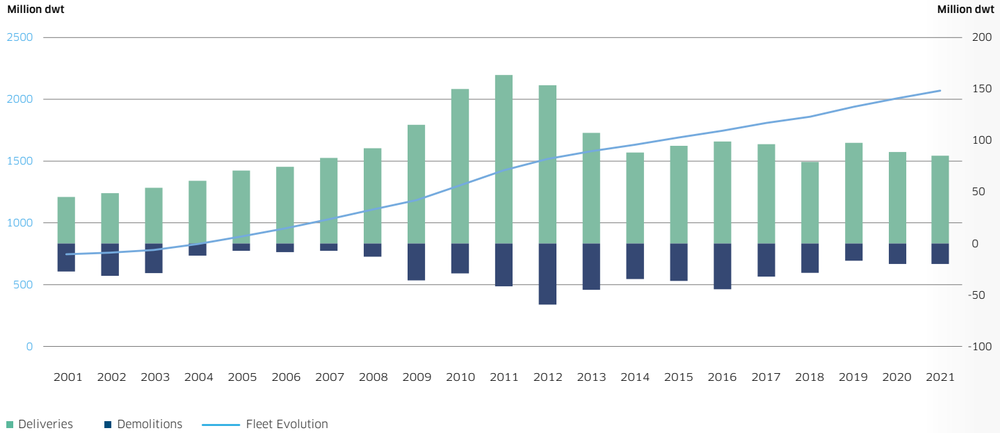
Shipbuilding

A new supercycle?

If the Covid-19 pandemic continued to cast its shadow across the world during the year, 2021 was both an incredible and unexpected year for the shipping and shipbuilding industries. After a dip in 2020, economies rebounded and the demand for raw materials and goods grew much faster than anticipated to stretch and eventually rupture logistical chains which propelled freight rates, notably in the container and bulker segments, skywards.

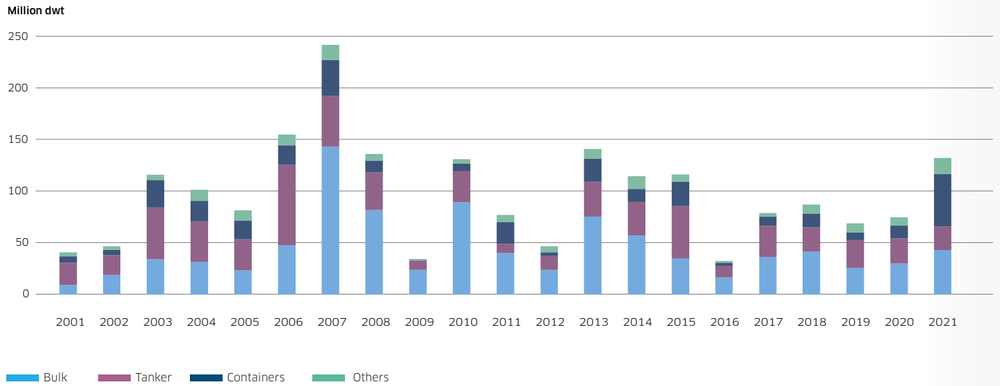
FORTE DE SAO MARCELO
Minicape, 120,000 dwt, built and delivered by Chinese shipyard Dalian Shipbuilding Industry Co., Ltd. (DSIC) to Empresa de Navegaçao Elcano, S.A. (Brazil) (subsidiary of E.N. Elcano) on 1 December 2021 .

Fleet evolution



Deliveries vs demolitions

Orders



	2020			2021		
	GT	Dwt	N° Ships	GT	Dwt	N° Ships
Market Sales	97,695,057	152,479,889	2,881	139,017,308	222,801,569	4,174
Demolition Sales	13,395,222	19,782,594	346	14,494,220	23,300,298	495
NB Resales	11,248,318	15,833,577	190	12,237,693	18,699,314	232

In response, newbuilding orders increased sharply from 75 m dwt (1,058 ships) in 2020 to 132 m dwt (1,765 ships) in 2021, the second most prolific year of the last 10 years, second only to 2013 when 141 m dwt was ordered. The main contributor to this 57 m dwt leap was from container liners, orders for which surged from 12 m dwt in 2020 to 51 m dwt (+ 39 m dwt). This saw the sector surpass orders for bulkers and tankers for the first time in history. Demand for bulkers was also brisk, rising from 30 m dwt to 43 m dwt (+ 13 m dwt). Only the demand for tankers slipped year-on-year by a marginal 1.5 m dwt due to a persistently poor tanker market. As a consequence of this buoyant shipbuilding activity, newbuilding prices increased sharply by 20 to 30% (as always depending on type and size) across the board including tankers. Price increases were supported by two main factors; firstly, by the very sharp rise in building costs mainly related to steel prices which almost doubled during the year. Secondly, by strengthening competition between buyers for the remaining yard slots to such an extent that we can say we flipped from a buyers' market into a sellers' market in 2021. As a further consequence, shipyards worldwide managed to book most of their 2022, 2023 and 2024 slots.

With the COP26 gathering in Glasgow in 2021, greenhouse gas (GHG) emissions and their elimination remained a hot topic across the year. Although many adverse comments were made by prominent bodies against fossil fuels and that uncertainty persists over exactly what will be the breakdown of shipping's future, cleaner fuel mix, orders for dual-fuel ships increased year-on-year. These orders included not only LNG which was selected for LNG carriers, container carriers and tankers but also dual fuel (LPG) for LPG carriers, dual fuel (methanol) for methanol carriers and container carriers. Accordingly, the number of dual fuel vessels ordered soared from 152 ships in 2020 (or 14% of new orders) to 388 ships in 2021 (or 22% of new orders), including LNG carriers and LNG bunker vessels.

KEY POINTS OF 2021

The three Asian shipbuilding giants, accounting for more than 95% of the global orderbook by deadweight, continued to fight fiercely. China and Korea improved their market share from 44.7% to 48.2% and from 29.9% to 31.4%, respectively, while increasing also their orderbook significantly. On a number of ships basis, China has now become the number one shipbuilding country globally on each of the main segments: bulker, tanker and container carriers, although Korea retains number one position for tanker in deadweight terms. In third place, Japan's market share slipped from 20.5% to 15.8% but it managed to retain about the same level of tonnage in its orderbook. Meanwhile, the shares held by the rest of the world (RoW) and Europe stood at 2.4% and 2.3%, respectively, last year.

Despite the logistical hurdles and difficulties in travelling and crew positioning, newbuilding deliveries maintained a swift pace. In deadweight terms, they inched down slightly in 2021 at 84.3 m dwt versus 89.2 m dwt in 2020. However, they increased in number-of-ships-terms from 1,199 to 1,242. As a consequence of the imbalance between deliveries and newbuilding orders, the global orderbook increased from 180 m dwt at end-2020 (the lowest figure since 2003) to 223 m dwt at end-2021. Meanwhile, the world fleet of ships of over 3,000 gt has continued its uninterrupted growth since 1999, as it increased to 2,072 m dwt (40,588 ships) at end-December 2021 from 2,009 m dwt (39,848 ships) one year earlier.

2021 also saw a remarkable number of transactions in the second-hand market as approximately 4,174 ships (223 m dwt) changed hands in 2021 versus 2,881 (152 m dwt) in 2020. This unprecedented activity pushed second-hand prices to extraordinary levels that no one could have anticipated at the beginning of the year. To illustrate the frenzy, the price of a 5 to 10 years Panamax-class container carrier increased by 500%.

Summary		2020	2021
Orders	m dwt	74.9	132.3
	ships	1,058	1,765
Deliveries	m dwt	89.2	84.3
	ships	1,199	1,242
Orderbook	m dwt	180.1	223.4
	ships	2,641	3,131
Active Fleet	m dwt	2,009	2,072
	ships	39,848	40,588
Orderbook/Active Fleet	m dwt	9.0%	10.8%
	ships	6.6%	7.7%

Orderbook		2020	2021
China	Market Share	44.7%	48.2%
	m dwt	80.5	107.6
	ships	1,216	1,529
Korea	Market Share	29.9%	31.4%
	m dwt	53.8	70.1
	ships	441	658
Japan	Market Share	20.5%	15.8%
	m dwt	36.9	35.3
	ships	533	523
Europe	Market Share	2.7%	2.4%
	m dwt	4.8	5.4
	ships	284	262
ROW	Market Share	2.3%	2.3%
	m dwt	4.1	5.1
	ships	167	159

in 2021, container carrier orders surpassed bulkers and tankers order for the first time in history

WORLD ECONOMY, MARITIME TRADE AND FREIGHT RATES

World Economy

The Covid crisis and its associated lockdowns saw the world plunged into a deep recession in 2020, as economic growth contracted by 3.1%, the steepest such contraction since the Second World War. A very strong rebound estimated at 5.9%, the highest since 1973, took place in 2021. Likewise, seaborne trade followed a similar curve, and after plunging by 3.0 % in 2020, it rebounded by 3.9% in 2021.

Maritime Trade

After contracting by 3.0% in 2020 dry bulk trade rebounded by 3.9% in 2021.

The tanker trade that had fallen sharply in 2020 by 8.5% clawed back some lost ground and rose by 4.0% in 2021.

After contracting by 1.4% in 2020, container throughput grew by 5.8% in 2021

Despite the depth of the recession, annual growth in all three sectors failed to surpass that seen in the aftermath of The Great Recession (which commenced in September 2008) when drybulk, tanker and container liners posted growth of 12.3%, 4.9% and 13.8%, respectively, in 2010.

Freight Rates

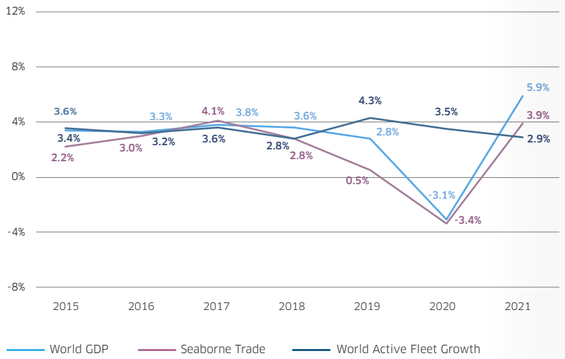
Dry bulk

The Baltic Exchange Dry Index (BDI) remained remarkably flat in 2018 and 2019, averaging on an annual basis 1,352 and 1,353, respectively, before plunging by 20% to 1,066 in 2020. Last year saw the BDI almost triple to 2,943. As has been the case in previous years, the dry bulk market was volatile. The BDI started the year at 1,374 and climbed steadily to exceed 2,000 on 16 March, 3,000 on 29 April, 4,000 on 20 August and 5,000 on 29 September to peak at 5,650 on 7 October. It then plummeted back to 2,217 on 24 December 2021.

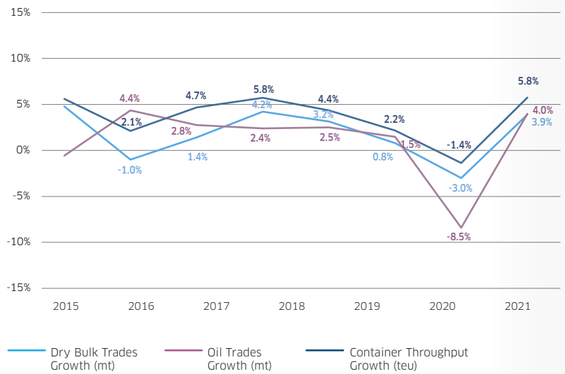
Average 1-year time-charter rates illustrate the sharp rise in earnings between 2020 and 2021 and the large spread highlights how the key to shipping remains as ever, timing.

The BDI trippled in 2021 to 2,943 from 1,066 in 2021

Global trade and world GDP & active fleet growth



Maritime trade growth



Average 1-year Time Charter rates were as follows:

- Supramax (50-60,000 dwt): **$8,189** in 2020 and **$26,770** in 2021
- Kamsarmax..... : **$9,923** in 2020 and **$26,898** in 2021
- Capesize..... : **$13,070** in 2020 and **$33,333** in 2021

During 2021, 1-year Time Charter rates fluctuated within the following bands:

- Supramax... : between **$11,242** and **$39,860** per day
- Kamsarmax: between **$12,272** and **$38,952** per day
- Capesize..... : between **$10,304** and **$86,953** per day

The Baltic Capesize 5TC averaged $17,126/day in Q1, $31,120/day in Q2, $42,379/day in Q3 and $42,645/day in Q4.

Tanker

Earnings for many tankers sank to their lowest ever levels throughout 2021 with global oil demand and supply remaining below pre-Covid levels. Broadly speaking, 2021 will be remembered as one of the worst years ever.

The majority of crude tonnage (non-eco, non-scrubber fitted) was forced to operate at below OPEX levels for large parts of the year. The VLCC market was particularly hard hit. For example, time charter equivalent (TCE) earnings for non-eco, non-scrubber-fitted units on the benchmark TD3C (Middle East Gulf to China) route averaged lat around minus $500/day over the year, their lowest level seen over the past two decades. Eco tonnage and those units equipped with scrubbers were able to achieve higher earnings. and recoup a portion of their operating expenses. Owners of scrubber-equipped units benefitted from the VLSFO-380 Cst spread averaging $105–120/tonne in key bunkering ports last year. Notably, the differential hit $200/tonne in Singapore at end-year.

Despite some volatility, the product tanker market remained challenging with earnings averaging close to OPEX levels on slow steaming, non-eco, non-scrubber fitted units. Robust Chinese product exports were observed during the first half of 2021, while Indian long haul product exports also temporarily increased during the second quarter of 2021 when lockdowns in the country severely reduced domestic consumption. At the same time, refining capacity closures in Australia and South Africa have helped to support these countries' product imports. Furthermore, long haul product tanker trade from the Middle East and Asia into the Atlantic Basin has benefitted from pandemic-induced refining capacity closures, while declining land-based product inventories in the Atlantic Basin have stimulated additional arbitrage opportunities.

2021 will be remembered as one of the worst years ever for tankers

In the clean segment, the Baltic Exchange Clean Tanker Index (BCTI) began 2021 at 434 and ended at 788, and averaged 532 over the year, compared with 585 in 2020.

Average 1-year eco Time charter rates were as follows:

- MR2.....: **$16,480** in 2020 and **$14,457** in 2021
- LR1.....: **$18,780** in 2020 and **$15,889** in 2021
- LR2.....: **$24,720** in 2020 and **$20,154** in 2021

During 2021, 1-year eco Time charter rates fluctuated within the following bands:

- MR2.....: between **$14,000** and **$15,750** per day
- LR1.....: between **$15,000** and **$16,500** per day
- LR2.....: between **$18,500** and **$21,500** per day

In the crude segment, the Baltic Exchange Dirty Tanker Index (BDTI) started the year at 543 and ended it at 786. Three first quarters were characterized by a quite low and steady spot market, averaging at 606 and peaking at 765 on 26 February. The fourth quarter saw a slight uptick and the BDTI accordingly averaged 762, hitting a high of 835 on 13 November. The index averaged 644 in 2021 versus 721 in 2020.

Average eco Time charter rates were:

- Aframax: **$24,090** in 2020 and **$18,567** in 2021
- Suezmax: **$31,980** in 2020 and **$21,731** in 2021
- VLCC.....: **$44,930** in 2020 and **$27,817** in 2021

During 2021, 1-year eco Time charter rates fluctuated within the following bands:

- Aframax: between **$16,000** and **$21,000** per day
- Suezmax: between **$20,000** and **$23,000** per day
- VLCC.....: between **$26,000** and **$29,500** per day

Time charter rates for VLCCs began 2021 at $29,500/day and slowly weakened until reaching a nadir of $26,000/day at end-year.

*Picture: **JATULI**, ice 1A aframax crude oil tanker, 112,000 dwt, delivered by Hyundai Heavy Industries to Neste OYJ on 5 December 2021.*

Charter rates for cellular ships (6-12 month fixtures)

Size	2018 avg $/day	2019 avg $/day	2020 avg $/day	2021 avg $/day	Change 2021/2020
8,500 teu	15,538	25,875	24,425	90,792	272%
5,600 teu	13,708	16,633	18,354	70,479	284%
(Panamax) 4,000 teu	11,163	11,088	13,792	61,458	346%
2,500 teu	10,792	9,275	10,027	46,900	368%
1,700 teu	9,646	8,096	8,242	33,460	306%
1,000 teu	7,242	6,283	6,125	23,696	287%
Alphaliner Index	**68.1**	**72.3**	**76.5**	**312.7**	**309%**

Container

The Alphaliner Charter Index rose by more than 300% in 2021 to reach record highs. Last year ended 13 years of misery for containership owning companies, some having been declared bankrupt or teetered on the verge of bankruptcy in the interval, and one should not forget it. However, 2021 saw a complete turnaround with main carriers having raised their freight rates tenfold, therefore significantly improving their cash flow and in turn allowing them to purchase and order ships as if there was no tomorrow.

Much has been talked about the sudden change of fate which certainly comes from a combination of the post-Covid recovery in demand and continuing supply chain disruptions. Port congestion has been especially high around Chinese export hubs, such as Shanghai, Qingdao and Tianjin and around USA import hubs such as Los Angeles. When workers have to isolate and quarantine, one infection can take a whole team out of action for a period. In pre-Covid times we expected the almost instant delivery of anything, today we have to wait weeks or months. The very long and lean supply chains that we were used to, have been broken by Covid disruptions and will need to be mended.

The very long and lean supply chains that we were used to, have been broken by Covid disruptions and will need to be mended

As container carriers could not be loaded or unloaded efficiently, this dynamic induced a chronic lack of ships and carriers and their customers desperately searched for additional tonnage which propelled freight rates to historic highs.

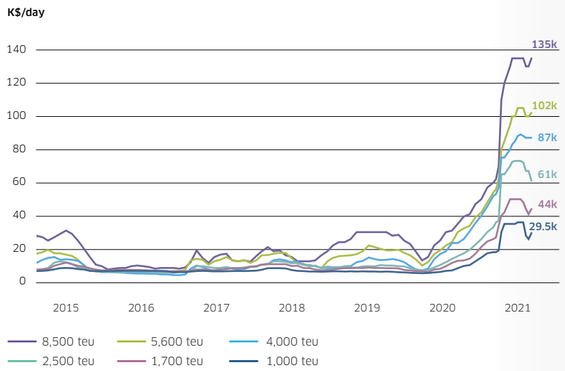
Average 1-year Time charter rates were as follows:

- 1,700 teu.....: **$8,221** in 2020 and **$33,176** in 2021
- 4,000 teu.....: **$13,917** in 2020 and **$61,111** in 2021
- 8,500 teu.....: **$24,458** in 2020 and **$90,014** in 2021

During 2021, 1-year Time charter rates fluctuated within the following bands:

- 1,700 teu.....: between **$13,000** and **$50,000** per day
- 4,000 teu.....: between **$26,000** and **$88,500** per day
- 8,500 teu.....: between **$39,500** and **$135,000** per day

Containership freight rates



Source: Alphaliner

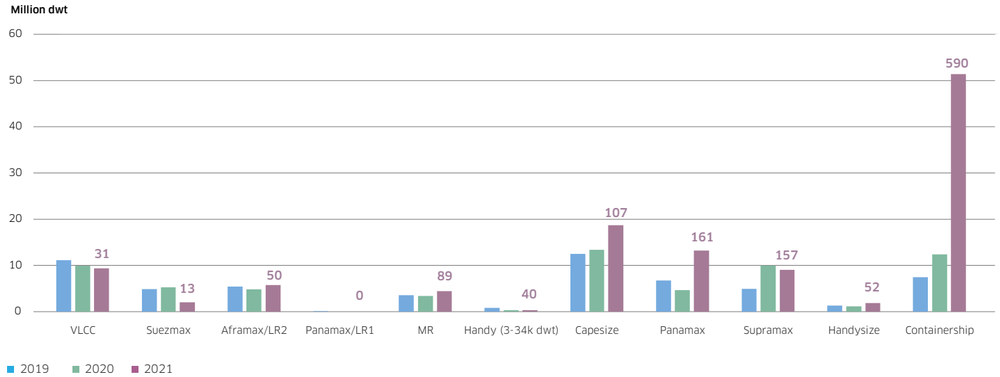
ORDERS AND ORDERBOOKS

Orders and orderbooks for standard vessels

Newbuilding orders increased by 76 % in 2021 to reach 132 m dwt, the second-highest figure posted over the last ten years behind 2013 (141 m dwt) and well above the annual average of 88 m dwt across the same period. Container carrier orders increased by more than 300% and bulker orders by more than 40%. Meanwhile, tanker orders decreased by less than 10%.

Newbuilding orders jumped from 75 m dwt in 2020 to 132 m dwt in 2021, the second best year of the decade

New orders for standard vessels per year



New orders per year (2011-2021)

m dwt	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bulk	40.4	24.1	75.5	57.1	35.2	16.6	36.6	41.5	26.0	29.9	43.0
Tanker	8.9	13.3	33.7	32.6	50.7	11.2	30.0	23.7	26.9	24.6	22.9
Container	21.0	3.5	22.7	12.6	23.5	3.2	8.6	13.2	7.4	12.3	51.2
Other	6.8	6.0	9.1	12.5	6.9	1.6	3.8	8.8	8.8	8.2	15.2
Total	**77.0**	**46.9**	**141.0**	**114.8**	**116.2**	**32.6**	**79.0**	**87.2**	**69.0**	**74.9**	**132.3**

Bulk Summary		2020	2021
Orders	m dwt	29.9	43.0
Deliveries	m dwt	49.6	37.5
Orderbook	m dwt	68.2	73.3
Active Fleet	m dwt	907.5	937.6
Orderbook/Active Fleet		**7.5%**	**7.8%**
China	m dwt	41.6	47.8
	Market share	61.0%	65.1%
Korea	m dwt	2.6	1.2
	Market share	3.9%	1.6%
Japan	m dwt	21.8	21.6
	Market share	32.0%	29.4%

Bulker orders increased by 44% from 29.9 m dwt in 2020 to 43.0 m dwt in 2021, the third-highest figure posted over the last ten years and a level well above the 2011-21 average of 38.7 m dwt. Kamsarmax and Capesizes saw the largest year-on-year increases as 151 and 79 orders, respectively, were placed in 2021. Conversely, deliveries slowed as a total of 37.5 m dwt was launched in 2021 compared with 49.6 m dwt in 2020. Meanwhile, the active dry bulk fleet increased from 907 to 937 m dwt. Tonnage on order represented 7.8% of the active bulker fleet at end-2021, slightly up from 7.5% in 2020.

m dwt	Orderbook	Fleet	Ratio
Handysize/handymax	6.3	115.6	5.4%
Supramax/ultramax	14.8	190.8	7.8%
Panamax/kamsarmax	18.4	193.6	9.5%
Post-Panamax/babycape	4.6	60.6	7.7%
Capesize/Newcastlemax	26.9	280.7	9.6%
VLOC	1.6	80.1	2.0%

Chinese shipbuilders managed to increase their share of the dry bulk market to 65.1% in 2021 from 61.0% in 2020. This was to the detriment of Japan and Korea's market shares, which decreased to 29.4% and 1.6%, respectively.

Tanker Summary		2020	2021
Orders	m dwt	24.6	22.9
Deliveries	m dwt	24.4	26.0
Orderbook	m dwt	60.4	52.9
Active Fleet	m dwt	658.5	672.4
Orderbook/Active Fleet		**9.2%**	**7.9%**
China	m dwt	20.1	14.5
	Market share	33.2%	27.4%
Korea	m dwt	28.3	28.6
	Market share	46.8%	54.0%
Japan	m dwt	9.0	5.6
	Market share	14.9%	10.6%

Tanker orders decreased by 7% from 24.6 m dwt in 2020 to 22.9 m dwt in 2021. This figure was broadly in line with the ten-year average of 25.3m dwt. Notably, demand for Aframaxes / LR2s and MR2s remained stronger than the previous year.

m dwt	Orderbook	Fleet	Ratio
MR1	0.1	19.2	0.6%
MR2	7.4	84.1	8.8%
Panamax/LR1	0.3	33.2	0.9%
Aframax/LR2	12.4	117.2	10.5%
Suezmax/LR3	8.9	97.8	9.1%
VLCC	20.8	261.4	8.0%

Tanker deliveries inched up from 24.4 m dwt in 2020 to 26 m dwt in 2021. The active tanker fleet grew from 658 m dwt at end-2020 to 672 m dwt at end-2021, by which time the tanker orderbook represented 7.9% of the active tanker fleet, down from 9.2% in 2020.

Korea continues to dominate the tanker segment by dwt and increased its market share last year to 54 % from 46.8% in 2020. Meanwhile, China and Japan conceded ground as their market shares fell from 33.2% to 27.4% and from 14.9% 10.6%, respectively.

We can wonder why so many tankers were contracted in 2021 in spite of extremely low prevailing rates and at a time when prices were going up? We attribute this to two main reasons; Firstly, the sentiment at the start of the year that newbuilding prices had bottomed out and were likely to rebound. Secondly, we note that several dual fuel tankers were specified with LNG as an attempt from the buyers to gain experience of this type of propulsion whilst having the backing, via long-term time charter, of large international oil and gas companies who are increasingly concerned with limiting their GHG emissions.

We can wonder why so many tankers were contracted in 2021 in spite of extremely low prevailing rates and at a time when prices were going up?

Containerships orders jumped by more than 300% from 12.3 m dwt in 2020 to 51.2 m dwt in 2021.

Container carrier deliveries rose from 9.4 m dwt in 2020 to 12.0 m dwt in 2021. The active container carrier fleet grew from 282 m dwt at end-2020 to 294 m dwt at end-2021. The orderbook jumped from 28.5 m dwt to 67.7 m dwt representing 23% of the active fleet at year-end.

China succeeded in raising its market share from 47.6% to 57.4 % in 2021 and therefore became the number one builder in the sector, to the detriment of Korea and Japan whose market shares receded from 34.5% to 32.6%. and from 16.8% to 9.5%, respectively.

	Existing		Orderbook		O / E
Size range teu	**ships**	**teu**	**ships**	**teu**	**%**
18,000-24,000	146	3,044,783	52	1,233,320	**40.5%**
15,200-17,999	58	954,669	79	1,240,502	**129.9%**
12,500-15,199	269	3,712,464	122	1,740,800	**46.9%**
10,000-12,499	190	2,071,533	17	202,550	**9.8%**
7,500-9,999	478	4,231,600	0	-	**0.0%**
5,100-7,499	438	2,731,759	88	577,565	**21.1%**
4,000-5,099	625	2,832,567	18	83,052	**2.9%**
3,000-3,999	261	906,282	69	222,306	**24.5%**
2,000-2,999	756	1,927,376	101	250,805	**13.0%**
1,500-1,999	644	1,115,334	104	192,476	**17.3%**
1,000-1,499	712	818,018	57	65,059	**8.0%**
500-999	765	566,760	6	4,275	**0.8%**
100-499	173	56,877	5	1,370	**2.4%**

Container Summary		2020	2021
Orders	m dwt	12.3	51.2
Deliveries	m dwt	9.4	12.0
Orderbook	m dwt	28.5	67.7
Active Fleet	m dwt	282.3	294.0
Orderbook/Active Fleet		**10.1%**	**23.0%**
China	m dwt	13.6	38.9
	Market share	47.6%	57.4%
Korea	m dwt	9.8	22.1
	Market share	34.5%	32.6%
Japan	m dwt	4.8	6.4
	Market share	16.8%	9.5%

Containerships orders jumped by more than 300% in 2021

Picture: Artist's impression of a 6000TEU container ship design under construction in Qingdao Yangfan Shipyard for Delphis, CMB Group.

Orders and orderbooks for specialised vessels

The specialized vessels segment was buoyant in 2021 with the noticeable exception of cruise ships. Last year saw orders placed for 98 LNG carriers totalling a record 15.2 m m³ of capacity. Of these, 12 will be LNG bunkering vessels. Demand for LPG tankers also hit a record as 135 units were contracted. Stainless steel chemical tankers and car carriers also saw increased ordering compared with previous years. On the other hand, orders for cruise ships almost collapsed. This segment is the number one victim of the Covid pandemic which led to the near disappearance of cruises amid lockdowns and border closures.

Orders for specialised vessels

	2016	2017	2018	2019	2020	2021
LNG (cbm)	896,766	3,145,678	10,819,279	9,119,964	8,642,750	15,201,785
LPG (cbm)	26,768	1,252,298	2,026,101	2,513,230	2,614,125	6,808,321
Ferries & Ro-pax(gt)	687,618	459,743	1,003,130	861,172	315,925	540,483
Cruise (gt)	2,566,512	2,907,027	2,288,199	1,650,452	49,084	138,300
SST Chemical (dwt)	828,705	437,000	313,721	451,953	548,760	822,197
Car carriers (cars)	19,248	38,310	20,830	34,715	21,020	290,810
Ro-Ro (lm)	1,166,248	1,188,682	1,222,203	1,271,760	1,292,475	1,317,361

N° of Ships	2019	2020	2021
LNG	58	54	98
LPG	51	46	115
Ferries & Ro-pax	33	15	16
Cruise	24	5	3
SST Chemical	23	33	43
Car carriers	8	3	41
Ro-Ro	11	4	10

Picture: ***Hull 8333****, 220 m LOA rail-enabled RoPax, ordered by KiwiRail to Hyundai Mipo Dockyard.*

ORDER CANCELLATIONS IN 2021

Order cancellations rose in 2021 to 4.7 m dwt from their lowest ever level at 0.9 m dwt in 2020. Cancellations were driven by tankers, which accounted for 93% of dwt capacity cancelled in 2021 against only 6% in 2020. This can partly be attributed to the challenging tanker market which has now persisted since mid-2020. It is worth noting that over half of tanker cancellations were contained in one specific order as HHI cancelled 10 VLCC contracts, worth KRW 980bn ($871.6m) which were ordered by Everest Korea Finance. This was due to the client's failure to pay down payments on time.

Despite cancellations, this didn't mean that yard slots opened up. There may have even been some trading between owners of these slots or by companies who own multiple vessel types and using their slots to build different ships than they first imagined. Eg. Order a tanker, use the slot to build a container liner. Indeed, notwithstanding the new financial challenges being faced by owners in the wake of the pandemic, actors from other main segments like containerships and bulkers remained optimistic during 2021, thereby unwilling to cancel those types of vessels.

Orders vs cancellations (2013-2021)

m dwt	2013	2014	2015	2016	2017	2018	2019	2020	2021
Orders	141.0	114.8	116.2	32.6	79.0	87.2	69.0	74.9	132.3
Cancellations	30.9	15.0	11.2	12.0	4.5	7.8	2.0	0.9	4.7

In light of its awful performance, the tanker segment was the most active in demolition, and tonnage sent to the beach rose from 2.7 m dwt in 2020 to 12.1m dwt in 2021. This was significantly more than the 10-year average of 8.5m dwt and it represented about 2% of the active tanker fleet (661m dwt). Logically, very little demolition activity occurred in the containership sector where 0.24 m dwt was scrapped in 2021 compared with 2.5 m dwt in 2020. This was a record-low and represented less than 0.1% of the active container fleet (281 m dwt).

Similarly, demolition activity in the bulk segment declined (from 13.4 m dwt to 7.3 m dwt) but again this was insignificant when compared with the bulk fleet of 903 m dwt. This demolition activity was the second lowest over the last ten years and amounted to only around 40% of the 20 m dwt 10-year average.

Demolition prices rebounded sharply in 2021 reaching unprecedented levels of $520/ldt, $530/ldt and $540/ldt for bulkers, tankers and container carriers, respectively.

The average age of vessels demolished in 2021 increased for container carriers from 23 to 29 years as well for bulkers from 27 to 29 years whereas it decreased for tankers from 29 to 26 years.

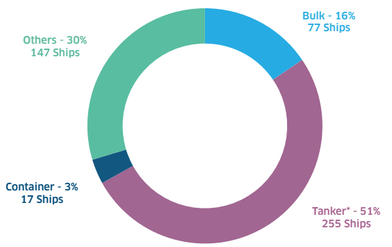
RECYCLING IN 2021

Every year, the shipping community entertains big hopes that demolition volumes will increase and bring some relief to the shipping markets. Over the last 3 years for instance, the tonnage sent for demolition per year has not equated to more than 1% of the merchant fleet, whereas over the same period, newbuilding orders were about 4% of the merchant fleet. Stricter environmental legislation such as the ballast water treatment directive plus future regulations (EEXI, CII, etc.) and higher steel costs which saw scrap metal prices surge, should have combined to drive ships to breakers' yards. However, despite these push factors, the long-awaited surge in scrapping did not materialize. Demolition activity remained at very subdued levels, although at 21.3 m dwt, it was slightly higher compared with 2020's 20.2 m dwt. Indeed, last year's figure was the third-lowest annual total posted over 2011-21 at around 50% of the 35.9m dwt 10-year average.

Demolitions vs deliveries (2013-2021)

m dwt	2013	2014	2015	2016	2017	2018	2019	2020	2021
Demolitions	45.0	34.6	36.3	44.4	32.3	28.6	17.0	20.2	21.3
Deliveries	107.5	88.4	95.0	99.0	96.4	79.2	98.1	89.2	84.3

Demolitions in 2021 (n° of ships)



** Incl. Chemical Tankers*

Every year the shipping community entertains high hopes that demolition will increase but demolition levels remain at desperately low levels of about 1% of the merchant fleet.

DELIVERIES AND WORLDWIDE SHIPBUILDING CAPACITY IN 2021

There has been a steep reduction in the number of active shipyards since 2007

Total deliveries waned to 84.3 m dwt in 2021 from 89.2 m dwt in 2020. On a segment-by-segment basis, deliveries were 37.5 m dwt of bulk carriers (49.6 m dwt in 2020), 26 m dwt of tankers (24.4 m dwt in 2020), and 12 m dwt of containerships (9.4 m dwt in 2020).

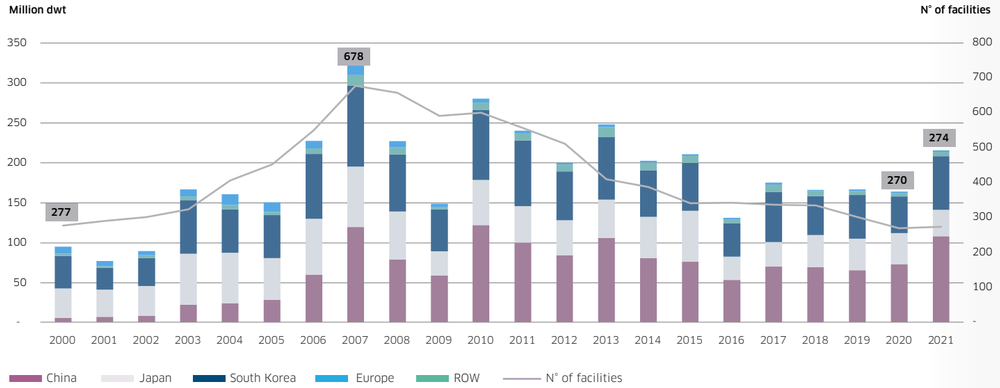
In China, deliveries remained flat with 2020 at about 40.6m dwt. In South Korea, deliveries slipped by 3.6% to 24.1 m dwt. In Japan, annual output plunged by 26.1% from 22.6 m dwt in 2020 to 16.7 m dwt in 2021.

The number of active building facilities (yards that either won new contracts and/or delivered tonnage during the year) worldwide now stands at 274, around 40% of the peak of 700 facilities seen in 2007.

Ship deliveries in China, Korea & Japan (2013-2021)

Deliveries (million dwt)	2013	2014	2015	2016	2017	2018	2019	2020	2021
China	43.2	36.0	38.6	36.0	38.7	34.7	36.6	38.3	40.6
South Korea	33.4	24.5	29.2	35.9	30.8	19.0	32.3	25.0	24.1
Japan	25.0	22.4	21.3	21.6	20.2	20.1	24.6	22.6	16.7

Active building facilities per year & region (excluding offshore)



NEWBUILDING PRICES IN 2021

Newbuilding prices soared by close to 30% in 2021 after they had weakened by between 5 and 10% per annum over 2019-20.

Price rises were more acute for in-demand tonnage such as container carriers and bulkers. Prices for tankers followed suit simply because most of the yards, except those which are specialized in certain types of tonnage, sell slots and not vessel types. Therefore, those owners keen on ordering tankers had to adjust to this new shipbuilding environment and accept higher prices despite the awful tanker freight market. Many ships were contracted with dual fuel propulsion or various additional features such as shaft alternators to improve their EEDI criteria and go beyond the 30% IMO reference curve, which added to price increases.

Meanwhile, building costs rose substantially with steel prices almost doubling in the first half of 2021. As shipbuilders accumulated more orders, their subcontractors and equipment makers that had also reduced their output considerably over the last decade started to raise their own prices. It is not impossible that the newbuilding contracts signed in Q1 and Q2 2021 will prove to be loss making contracts for some shipyards. We heard here and there that some shipbuilders decided to renegotiate some contracts to be able to issue necessary bank refund guarantees.

Prices in the second-hand market followed a similar pattern to the charter markets. Second-hand container carriers saw their prices multiplied between the beginning and the end of 2021. Second-hand bulker prices rose significantly whereas second-hand tanker prices weakened in contrast with the tanker newbuilding prices.

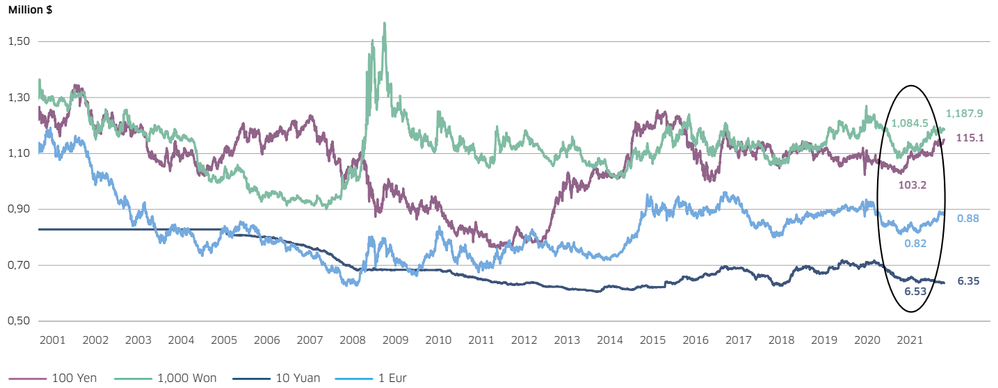
We witnessed a renewed push-pull dynamic between newbuilding and second-hand markets and certain yards started to offer slots for the end of 2022 or beginning of 2023 at a premium over newbuilding prices for later delivery.

Newbuilding and asset prices ($ million)

	Age	End 2020	End 2021	% variation
Kamsarmax Bulker	15 years	9	18	+100%
	5 years	22	33.5	+50%
	Newbuilding	28	35	+25%
VLCC Tanker	15 years	33.5	32	-5%
	5 years	76	70	-8%
	Newbuilding	85	105	+24%
1,700 TEU Containership	15 years	6.1	27	+340%
	5 years	13.5	43	+220%
	Newbuilding	23	29	+26%

Looking at historical price levels, we may say there is still a lot of room for price increase. For instance, prices for Panamax bulker newbuildings rose from $18 million to $55 million in China between 2002 and 2008 versus $35-36 million for Kamsarmaxes at end-2021 against $26-27 million at the end of 2020.

US Dollar exchange rates



Newbuilding prices (million $)

	End 2020 China 1st tier*	End 2020 SK/Japan	End 2021 China 1st tier*	End 2021 SK/Japan
Tankers				
VLCC	81	86	95	106
Suezmax	52	57	66	74
Aframax (A) **/ LR2**	43 (A)/47(LR2)	45 (A)/49 (LR2)	55 (A)/57 (LR2)	59 (A)/61.5 (LR2)
MR2 IMO 3 (12+2)	33.5	33.5	39	39.5
Bulkers				
Newcastlemax (205k dwt)	51/53	63/65	65/67	71/73
Capesize (180k dwt)	48/49	60/61	60/61	66/68
Panamax (P) **Kamsarmax** (K)	26/27	33/35	35/36	38/40
Ultramax (U) **Supramax** (S) **Handymax** (H)	21/22 (U) 24/25 (H)	24/25 (U) 27/28 (H)	32/32.5 (U) 28.5 (H)	35/36 (U) 30/31 (H)
Containers				
Megamax (23k teu)	143/145	148/150	198/200	203/205
ULCS (15k teu)	110/112	115/117	150/152	155/157
Intermediate (9.2k teu) (6.6k teu)	77/78 (9k) 54/55 (6k)	79/80 (9k) 57/58 (6k)	99/100 (9k) 74/75 (6k)	103/104 (9k) 77/78 (6k)
Panamax (5.5k teu)	48/49	49/50	68/69	70/71
Superhandy (2.7k teu)	30	32	38	40
Handy (9.2k teu) (1.1k teu)	22.5 17.5	24 18.5	28 23	29.5 24

** Prices at China's 2nd tier yards are an estimated 5% lower*

Second hand price evolution during 2021 for 5 year old vessels (million $)

	Jan 2021	High		Low		Dec 2021	Variation Jan- Dec
VLCC	64.03	72.40	17 Dec	63.98	15 Jan	72.38	+ 13.0%
Aframax	34.14	40.84	17 Dec	33.93	26 Feb	40.75	+ 19.4%
MR Tanker	25.73	28.62	24 Dec	25.60	29 Jan	28.62	+ 11.2%
Capesize	31.96	47.34	29 Oct	31.96	08 Jan	45.93	+ 43.7%
Panamax	21.13	33.82	29 Oct	21.13	08 Jan	32.47	+ 53.7%
Supramax	15.13	29.40	29 Oct	15.13	08 Jan	27.80	+ 83.8%

*Picture: **FJORDNES**, Self-Unloading Bulk Carrier 40,000 dwt, delivered by Chengxi Shipyard to CSL and HJH joint venture on 25 June 2021.*

SHIPBUILDING IN THE WORLD

Shipbuilding in China

China reinforced its position as the world's leading shipbuilder in 2021, ranking first with the largest orderbook of 107.6 m dwt (48.2% market share), the greatest number of newbuilding orders at 68 m dwt and the largest number of deliveries at 40.6 m dwt.

In 2021, China simply doubled the new orders compared with 2020 (from 34.8 m dwt to 68 m dwt). Chinese yards confirmed their top position in the containership segment and secured a majority of the orders (57% of global TEU ordered) by multiplying new orders by 4.5 (from 6.6 to 30.1 m dwt). Their top position in the bulk segment was also consolidated as they nearly doubled new orders (from 17.6 m dwt to 31.1 m dwt) representing 72% of the global orders placed for bulkers last years. However, the tanker segment, in deadweight terms, remained controlled by Korea, while China succeeded in maintaining second place despite the severe drop in tanker ordering activity (from 8.6 m dwt to 3.9 m dwt). This represented 17% of the total orders placed for tankers globally last year.

Last year, total Chinese shipbuilding output increased slightly, to 40.6 m dwt compared with 38.3 m dwt in 2019. Thanks to the extraordinary performance in capturing new orders, the orderbook / yearly output ratio surged from 2.1 to 2.6. Most Chinese yards are now full for the next 3 years and thus proposing delivery positions for 2025 (3 years after contract signing).

China		2020 m dwt	2020 Ships	2021 m dwt	2021 Ships
Orderbook	Market share	44.7%	46.0%	48.2%	48.8%
	Bulk	41.6	454	47.8	536
	Tanker	20.1	304	14.5	234
	Container	13.6	208	38.9	490
	All ships	**80.5**	**1216**	**107.6**	**1529**
Orders	Bulk	17.6	233	31.1	341
	Tanker	8.6	118	3.9	88
	Container	6.6	91	30.1	378
	All ships	**34.8**	**509**	**68.0**	**933**
Deliveries	Bulk	28.2	256	24.9	256
	Tanker	5.7	111	9.2	153
	Container	2.9	61	4.8	96
	All ships	**38.3**	**498**	**40.6**	**611**

Most Chinese yards are now full for the next three years

Top 4 Chinese shipyards

The top 4 Chinese shipbuilding groups remained the same in 2021: CSSC, CHI, YZJ and NTS which together accounted for 75% (previously 79%) of the Chinese orderbook while their share of the global orderbook remains flat with 2020 at 36%.

China State Shipbuilding Corporation (CSSC) remains the number one shipbuilding group worldwide holding 41% of the Chinese orderbook and 20% of the world orderbook. CSSC secured new orders amounting to 27 m dwt in 2021, 30% more than the largest Korean group HHI with 20.8 m dwt.

Cosco Shipping Heavy Industry (CHI) is the second largest shipbuilding group in China, holding 14% of the Chinese orderbook and the fourth largest global shipbuilding group accounting for 7% of the world orderbook. CHI secured new orders totalling 8.7 m dwt in 2021, on par with 2020.

Third and fourth behind CSSC and CHI, Yangzijiang (YZJ) and New Time Shipyard (NTS) are the two largest private shipbuilders in China with orderbooks of about 11.1 m dwt and 10.2 m dwt, respectively. This ranks them in 7th and 8th position in the world league. YZJ (7.1 m dwt in 2020) and NTS (5.7 m dwt in 2020) nearly doubled their orderbook during 2021.

Newbuilding Capacity

Under the strong demand for newbuilding, Chinese newbuilding capacity might be about to increase after 14 years of constant decrease.

Yangzijiang decided to reopen **Jiangsu Yangzi Changbo Shipyard** which was closed 9 years ago due to its low order volume. Yangzi Changbo is equipped with three slipways and is able to deliver six vessels each year. The facility can only construct ships up to Handymax size.

Quanzhou Transportation Development Group (QTDG) heavily invested to restructure **Quanzhou Shipyard**, located in Fujian Province. After completing the process, QTDG is looking to resume shipbuilding, ship repair and offshore. Quanzhou Shipyard has two 300,000 dwt-capacity drydocks and another two 10,000 dwt-capacity drydocks, and in the past has mainly built tankers.

Private Chinese shipyard Taizhou Kouan and its affiliated companies finally announced the success of their reorganization after being taken over by two local companies: Taizhou Changqin Ship Engineering and Taizhou Changyue Enterprise Management. Kouan shipyard never stopped their production and delivered several ships in 2021.

Large Passengers ships

Shanghai Waigaoqiao Shipbuilding (SWS) has completed the hull of China's first large luxury cruise ship. SWS is cooperating with Italy's Fincantieri to build the 135,500 gt Vista-class vessel (323.6 meters long and 37.2 meters wide, able to accommodate 5,246 passengers), which will now move into the second half of production: the internal equipment installation and decoration stage. The ship is scheduled to be delivered in 3Q23.

The world 's largest civil hospital ship, the 37,000 gt Global Mercy, was delivered by **Tianjin Xingang Shipyard** to their owner Mercy Ships. With 12 decks, the Global Mercy is equipped with six operating theatres, hospital beds for 200 patients, a full laboratory and simulation training areas. The ship is expected to operate for 40 to 50 years.

Some newsworthy events of the year

- Hantong shipyards secured 28 Kamarmax (13 for Nisshin, 6 for Oldendorff, 4 for Atlanska, 4 for Vogeman and 1 for domestic owner)
- Yangzijiang secured 22 Kamsarmax (14 for Japanese owners, 4 for Greek owners and 4 for their own account)
- New Dayang secured 19 Ultramax (9 for Chinese owners, 4 for Ciner, 4 for Wah Kwong and 2 for Uthalden for Japanese owners, 4 for Greek owners and 4 for their own account)
- SWS secured 28 x 7,000 TEU containerships (10 for Seaspan, 10 for TS Lines and 8 for Sea Consortium)
- Yangzijiang secured 23 x 15,000 TEU containerships (19 for Seaspan and 4 for Costamare)
- Himalaya Shipping ordered 12 Newcastlemax DF LNG at New Times
- Jiangnan secured 8 VLGC DF LPG (5 for Domestic Owners and 3 for Petredec)

CSSC remains the number one shipbuilding group worldwide holding 41% of the Chinese orderbook and 20% of the world orderbook.

*Picture: **GLOBAL MERCY**, 37,000 gt, delivered byTianjin Xingang Shipyard on 16 June 2021, for the humanitarian organization Mercy Ships. The contract to build the vessel was awarded to Stena RoRo, Göteborg, Sweden.*

Shipbuilding in South Korea

South Korea		2020		2021	
		m dwt	Ships	m dwt	Ships
Orderbook	Market share	29.9%	16.7%	31.4%	21.0%
	Bulk	2.6	9	1.2	5
	Tanker	28.3	200	28.6	213
	Container	9.8	64	22.1	192
	Gas	13.0	163	17.9	23
	All ships	**53.8**	**441**	**70.1**	**658**
Orders	Bulk	0.0	0	0.4	2
	Tanker	12.8	98	15.2	122
	Container	3.8	27	17.0	159
	Gas	4.2	56	10.7	148
	All ships	**20.9**	**182**	**43.6**	**439**
Deliveries	Bulk	2.7	11	1.8	6
	Tanker	13.4	102	11.7	99
	Container	5.6	51	4.8	31
	Gas	3.3	42	5.8	73
	All ships	**25.0**	**209**	**24.1**	**212**

In 2021, Korea, ranked second globally for its 70.1 m dwt orderbook (31.4% market share), its 43.6 m dwt of newbuilding orders (33% market share) and its tonnage output of 24.1 m dwt (29% market share). With the surge in global ordering, Korean shipbuilders have seen their new orders more than double compared with last year (with 43.6 m dwt against 20,9 m dwt).

In the tanker segment, Korea consolidated its first position with 15.2 m dwt of new orders (66% of global tanker new orders). For the second consecutive year, Korea conceded first place to China in the container carrier segment with 17 m dwt of new orders (35% of global teu ordered). Having all but exited the bulk segment over the past few years, Korean yards secured only 2 orders for Capesizes, both of which were DF LNG for compatriot H-Line.

Once again, Korean yards largely dominated the construction of LNG carriers as they accounted for 85% of new orders placed globally (86 new units compared with 49 in 2020).

Illustrating the strong consolidation of the Korean shipbuilding industry, 90,8% of orders in 2021 were secured by the Big Three, with Hyundai HI holding 44.5%, DSME 22.9%, and Samsung 22.4%.

Korean shipbuilding output decreased slightly from 25.0 m dwt in 2020 to 24.1 m dwt in 2021. The orderbook to yearly output ratio continues to increase; rising from 1.7 at end-2019 to 2.3 at the end of 2020 to 2,9 at the end of 2021. Similar to China, it is becoming more and more difficult to obtain a delivery position in the next 3 years.

Some newsworthy events of the year

After 3 years of endless expectation, the EU commission finally vetoed the merger between HHI and DSME. The EU was concerned that the merger would create a dominant position in the large LNG carrier market, with the two South Korean shipbuilders controlling 60% of global business. As a consequence, HHIH the holding company of HHI had to terminate the merger agreement. The Korean Development Bank (KDB) still holds a 55.7% stake in DSME and the situation remains uncertain and confused. On the other hand, with the surge of new orders, DSME enjoys a good order backlog for the next 2 to 3 years with strong expectations that orders will remain high in 2022.

Hyundai Heavy Industries (HHI) secured some 44.5% of new orders placed in Korea in 2021 worth $22.8 billion (this was 143% of its initial target versus 76% in 2020). The group had set an order target of $17.4 billion for 2021 which was 10% higher than 2020 with $15.9 billion. Of the 246 ships secured last year, 44.7% were based on dual-fuel propulsion.

Samsung HI (SHI) also exceeded their sales target with orders worth $12.2 billion compared with $5.5 billion in 2020. The split is as follow: Containerships ($5.5 billion), LNGCs ($4.4 billion), Tankers ($2.3 billion). Of the 73 ships secured this year, 46.6 % were based on dual-fuel propulsion.

Daewoo Shipbuilding and Marine Engineering (DSME) secured 22.4% of the total new orders placed in Korea in 2021 which amounted to $10.86 billion (141% of its initial target). DSME was initially aiming for more than $7.7 billion of orders in 2021. Out of the 64 commercial vessels secured, 45 were based on dual-fuel propulsion.

Hyundai Mipo Dockyard (HMD) continued to dominate the medium sized shipyard segment (below LR2 size) and collected around 40% of small and medium sized new orders placed at Korean yards in 2021. It won 92 orders in 2021 against 51 in 2020. Its main product remains the MR tanker and together with its Vietnamese affiliate (HVS), it succeeded in winning 46% of MR orders placed worldwide.

Daehan Shipbuilding who was well-known for focusing only on the construction of two types of standard tankers (the Aframax / LR2 and Suezmaxes), finally decided to secure orders for 2 feeder containerships in view of high shipbuilding prices. These 1,000 teu containerships will be built alongside the Suezmax and Aframax tankers. Last year, it secured a record 17 Aframax/LR2 orders, all for Greek owners bringing their orderbook from 17 ships at end-2020 to 27 ships at end-2021 which puts them in a comfortable position for the coming years. Of the 17 ships secured last year,

23.5 % will be based on dual-fuel propulsion. This result has put Daehan in a good position so that KDB, the yard's main shareholder, is currently looking to offload its stake and is looking for new investors. Dongil Steel, the Major shareholder of Daesun, and KH investment the major shareholder of Kshipbuilding may take this opportunity.

STX Offshore & Shipbuilding (STX) disappeared. Welcome to **Kshipbuilding**! Following the acquisition of the majority of STX shares, KH Inc. (KHI) and South Korea's United Asset Management company (UAMCO) renamed the Jinhae-based shipyard, **"K Shipbuilding"**. The yard continues to focus on constructing MR tankers and may possibly take the opportunity offered by currently roaring containership demand. In 2021, they secured 25 ships (18 MR, 4 LR2 and 3 small tankers) compared with only 7 ships in 2020.

Hanjin Heavy Industries & Construction disappeared. Welcome **HJ Shipbuilding and Construction (HJSC)**! Following the acquisition of the majority of Hanjin shares, the civil engineering and construction company Dongbu Corp. renamed the Busan-based shipyard. The yard secured 4 methanol-ready 5,500 teu containerships in 2021. The Busan shipyard had not contracted any commercial newbuildings since 2014.

Dae Sun Shipbuilding and Engineering's major shareholder switched from Korea Eximbank to Dongil Steel after the sale of the former's 83% stake. In 2021, Dae Sun secured 20 new orders (11 containerships, 6 chemical stainless-steel tankers and 3 product tankers) compared with only 8 in 2020.

Some significant orders of the year

- In 2021, Korean shipyards secured orders for 130 dual-fuel propulsion ships (excluding LNG carriers) against 32 orders in 2020 and 42 orders in 2019. This represents 44% of total dual-fuel ships ordered globally last year and 36.5% of the total orders placed in Korea. These orders included 50 dual-fuel (LPG) LPG tankers (38 VLGCs, 7 MGCs and 5 ethane carriers), 27 dual-fuel (LNG) oil tankers and 51 dual-fuel (LNG) containerships.
- A remarkable record: 64 Ultra Large Container Ships (ULCS) between 15,000 and 16,000 teu were ordered in Korea (30 at Samsung, 26 at HHI and 8 at DSME)
- The Big Three secured 93% of the 86 large LNG carriers ordered globally in 2021 (36 units for HHI, 23 for Samsung and 21 for DSME).

The Big Three secured 93% of the 86 large LNG carriers ordered globally in 2021

*Picture: **AURA SEAWAYS**, 4,500 lm RoPax (250 cabins), delivered by Chinese shipbuilder Guangzhou Shipyard International (GSI) to DFDS on 10 December 2021.*

Shipbuilding in Japan

Japan		2020		2021	
		m dwt	Ships	m dwt	Ships
Orderbook	Market share	20.5%	20.2%	15.8%	16.7%
	Bulk	21.8	302	21.6	283
	Tanker	9.0	92	5.6	77
	Container	4.8	55	6.4	73
	All ships	**36.9**	**533**	**35.3**	**523**
Orders	Bulk	11.4	150	9.7	130
	Tanker	2.6	44	1.8	37
	Container	1.8	22	3.9	49
	All ships	**16.4**	**251**	**16.3**	**270**
Deliveries	Bulk	17.1	209	9.6	143
	Tanker	4.4	63	4.2	44
	Container	0.5	14	2.2	31
	All ships	**22.6**	**325**	**16.7**	**266**

At end-2021, Japan remained the world's third largest shipbuilder. Japanese shipbuilders did not benefit from the significant surge in new orders in 2021 as they secured the same number of new orders 16.3 m dwt as in 2020. However, Japan ranked third overall for its 35.3 m dwt orderbook (15.8% global market share), its 16.3 m dwt of newbuilding orders (12% global market share) and its tonnage output of 16.7 m dwt (20% global market share).

If containership orders doubled from 1.8 to 3.9 mil. dwt, Japan maintained the same level of orders compared with last year due to the decline of orders for bulkers from 11.4 m dwt to 9.7 m dwt and tanker orders from 2.6 m dwt to 1.8 m dwt.

Japan's three largest shipyards Nihon (Imabari + JMU), Oshima and Namura secured a combined 74.4% of the total new orders placed at Japanese yards in 2021 (shares of 50.0%, 14.3% and 10.1%, respectively).

Japanese shipbuilding output dropped significantly from 22.6 m dwt in 2020 to 16.7 m dwt in 2021. With a stable orderbook, the orderbook to yearly output ratio naturally increased from 1.8 to 2.1.

Some newsworthy events of the year

- **Imabari Shipbuilding and Japan Marine United (JMU)**, are Japan's two largest shipbuilders with an orderbook of 13.6 m dwt (38.7% of Japan's orderbook) and 6.3 m dwt (17.9 % of Japan's orderbook), respectively. In 2020, they launched a new joint venture company, **Nihon Shipyard Co**, with Imabari holding a 51% stake and JMU 49%. This new company will handle all commercial ships excluding LNG carriers. In 2021, Nihon contracted 89 ships for a total of 8.1 m dwt. At the end of 2021, the orderbook of Nihon totalled 201 ships for a total of 19.9 m dwt which is the world's third largest after CSSC and HHI.
- **Oshima Shipbuiding, Namura and Shin Kurushima**, respectively, the third (5 m dwt), fourth (2.5 m dwt) and fifth (1.8 m dwt) largest Japanese shipbuilders, secured a total of 77 ships for a total 5 m dwt.
- **Oshima Shipbuilding** acquired the former **Mitsubishi Heavy Industries** (MHI) Koyagi shipyard near Nagasaki with the ambition to become the "world number one bulker shipyard". With Koyagi larger dock, Oshima will be able to build Capesizes and VLOCs.
- **Namura Shipbuilding** who fully acquired **Sasebo Heavy Industries** back in 2014 decided to withdraw Sasebo from commercial shipbuilding after the completion of its outstanding orderbook and instead focus on Navy projects. Strong competition from China on the bulkers and from Korea on the tankers drove this decision. Nevertheless, in view of the excellent result in 2021 and strong price increases, there remains the possibility that Namura will have second thoughts.
- In 2021, Japanese shipyards could benefit from a simultaneously weaker Yen and stronger Chinese Yuan (CNY). But in vew of the final figures it is uncertain to know if that helped Japanese yards

Japan's three largest shipyards Nihon (Imabari + JMU), Oshima and Namura secured a combined 74.4% of the total new orders placed at Japanese yards in 2021

Shipbuilding in Europe

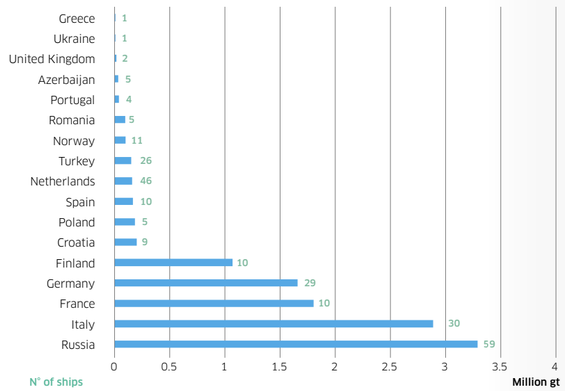
It is necessary to drop deadweight and instead view shipbuilding through the lens of gross tons (gt) to understand the relative importance of the European shipbuilding industry versus its Asian competitors. When ranked by gt, Europe claims its place among the world's main shipbuilding regions, particularly when the comparative value of European-built gt is factored in. In 2021, China, Korea, Japan and Europe accounted for 79.8, 59.7, 23.6 and 11.9 m gt of the orderbook, respectively. In million dwt terms, the equivalent figures were 107.6, 70.1, 35.3 and 5.4 million dwt. On a gt basis, last year, European shipyards saw their market share slip from 9.5% to 6.7%. This reflected the loss of cruise ships orders. With only 2 new cruise ships ordered at Meyer Werft, the pace of cruise ship contracting came to an abrupt halt in the wake of the Covid pandemic.

Some newsworthy events of the year

- In 2021, Russia took first place among the European countries in terms of gt (3.3 m gt) and dwt (3.7 m dwt), surpassing Italy. This is mainly due to its 'flagship' shipbuilding group Svezda which enjoys an orderbook of 35 ships (15 LNG carriers, 16 Aframaxes, 1 Panamax tanker, 3 MRs). These ships, ordered by compatriots Rosneft, Sovcomflot and Novatek, are to be delivered up until 2025. Additionally, there have been several new orders secured by the 6 other Russian shipyards including Krasnoye, Armurskiy, Nevskiy, Okskaya, Lotos and 3RD International who received orders for a combined 24 units.
- Even if no order was secured in 2021, Italy holds second place with 2.8 m gt. This is due to the strong orderbook secured by the largest cruise ship builder in the world, Fincantieri with 26 large cruise ships representing 39.0% of the global cruise ship orderbook and which will be delivered up until 2027. Italy can also count on Visentini which is constructing one large dual fuel (LNG) Ropax from Corsica Linea, and on Mariotti which is building two 23,000 gt cruise ships and one ferry for the Italian Government which will be delivered over 2021-22.
- France remains in third place due to its leading shipyard Chantiers de l'Atlantique which boasts a total orderbook of 10 large cruise units for a total of 1.8 m gt. This represents 25% of the global cruise ship orderbook. All units will be delivered before 2027. The French State remains the main shareholder in Chantiers holding an 84% stake after European competition regulators rejected a proposed merger with Fincantieri.

Europe		2020		2021	
		m dwt	Ships	m dwt	Ships
	Market share	9.5%	10.8%	6.7%	8.4%
Orderbook	Bulk	0.0	2	0.0	12
	Tanker	1.0	47	1.4	46
	Container	0.0	0	0.0	0
	LNG	2.1	17	2.1	17
	Dry Cargo	0.5	93	0.4	83
	Cruise	8.6	89	7.2	71
	All ships	**12.9**	**284**	**11.9**	**262**
Orders	Bulk	0.0	0	0.0	11
	Tanker	0.1	8	0.5	9
	Container	0.0	0	0.0	0
	LNG	1.3	11	0.0	0
	Dry Cargo	0.2	38	0.1	29
	Cruise	0.0	5	0.1	2
	All ships	**1.7**	**67**	**1.0**	**60**
Deliveries	Bulk	0.0	1	0.0	0
	Tanker	0.2	15	0.0	10
	Container	0.0	2	0.0	0
	LNG	0.0	0	0.0	0
	Dry Cargo	0.2	32	0.2	39
	Cruise	1.1	14	1.6	20
	All ships	**1.6**	**72**	**2.0**	**82**

Orderbook of European shipyards at end-2021 (million GT)



Cruise ship contracting in Europe per year

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Ships	4	10	16	21	25	30	26	19	5	2

- Germany remains in fourth position due to 2 large cruise ships secured by Meyer Werft (the only large cruise ships ordered in 2021). By the end of 2021, the orderbook of Meyer Werft, one of the world's best cruise ship builders, included 9 large cruise ships, representing 26.4% of the global cruise ship orderbook. These units will be delivered up until 2025.
- MV Werften, which was purchased by the Hong-Kong-based Gentling Group back in 2016 and is composed of 3 German building sites: Wismar, Rostock and Stralsund, finally filed for bankruptcy after the German federal and state authorities and Genting failed to agree a rescue package for the company. The yard still has 2 cruise ships (Global One and Global Dream) on order after the delivery of the Crystal Endeavor.
- On the other hand, the Flensburger Schiffbau-Gesellschaft (FSG) shipyard successfully secured a dual-fuel (LNG) RoRo from Australian company SeaRoad after it was brought out of insolvency by Lars Windhorst's Tennor Group. FSG has even taken over compatriot shipbuilder Nobiskrug to target the superyacht market. In total, FSG has 2 RoRo and 2 Ropax in its orderbook for delivery in 2022.
- Germany's Fosen Yard Emden, part of the Norwegian Fosen group since 2019, successfully secured 6 units of 3,640 dwt general cargo vessels. These units will be ready for wind-assisted propulsion and the use of future fuels (Hydrogen, Ammonia, LNG).
- Also worth noting is the relatively strong orderbook of Ferus Smit Leer with its orderbook of 4 MPP/General Cargoes and 2 x 8,000 dwt tankers with LNG propulsion for Swedish owner Thun.
- In Finland, the fifth European country in terms of gt, Meyer Turku Oy holds an orderbook of 5 cruise ships to be delivered up to 2025 for Royal Caribbean, Carnival and TUI. In 2021, Rauma Marine was the only Finnish yard to receive new orders with two 48,000 gt, 1,800-passenger dual-fuel (LNG) ferries by Australian ferry operator TT-Line. Furthermore, the Helsinki Shipyard is building two ice-class ocean cruise liners with capacity for 150 to 200 passengers for one of its Russian owner's companies, Vodohod.

European shipyards saw their market share slip from 9.5% to 6.7%. This reflected the loss of cruise ships orders

*Picture: **BADJI MOKHTAR III**, 3250 lane meters, 1800 passengers Ro-Pax, delivered by Chinese shipbuilder Guangzhou Shipyard International (GSI) to ENTMV (Algeria) on 15 June 2021.*

- No new orders were placed in 2021 at Croatian shipyards. Following the bankruptcy of state-owned Uljanik, a new company named 'Uljanik Brodogradnja 1856', was formed to take over the Pula yard. Despite being put up for sale by its owner Uljanik, 3 Maj continues to build one MR tanker. Meanwhile, Trogir still have 2 ships on order and Brodosplit is building 2 expedition cruise ships to be delivered in 2022.
- Poland is back within the top 10 thanks to Remontowa securing an order for 3 x 4,100 dwt dual-fuel Ferries from the Polish Government. Poland can also count on Gryfia Shipyard and its partner Stocznia. Poland also remains active as a block and hull manufacturer for other European builders.
- Spain has seen the definitive extinction of LaNaval (Construcciones Navales Del Norte). All the equipment and machinery were sold and the land will be used for other purposes. However, Spain can count on several other yards, including Barreras with 2 cruise ships and one Ropax, Murueta with 2 small general cargo vessels and one small tanker and Armon with an LNG bunkering vessel for Knutsen which will be delivered in 2022.
- Dutch shipbuilders managed to secure orders for 16 ships in 2021: 10 x 3,600 dwt, ice class 1A general cargo vessels for Damen Gorinchem, 5 minibulkers for Royal Bodewes and one 4,000 dwt general cargo vessel at Hartman Marine for their own account. By end-2021, the Dutch orderbook was composed of 45 ships spread across 8 shipyards which included 15 ships at Royal Bodewes, 10 at Damen Gorinchem and 9 at Ferus Smit Westerbroek.
- Turkey's shipbuilding industry remained relatively active with 5 ships ordered at 4 different shipyards (Sefine, Atlas, Ceksan and Gisan) in 2021. By the end of the year, the country had 26 ships on order in 15 different shipyards.
- In 2020, only 3 small live fish carriers were ordered in Norway, two at Aas Shipyard and one at Myklebust. The remaining orderbook fell to 11 ships spread across 4 shipyards

In 2021, Russia took first place among the European countries in terms of gt (3.3 m gt) and dwt (3.7 m dwt), surpassing Italy

Picture: ***COMMANDANT CHARCOT****, 23 staterooms & suites, hybrid-electric polar exploration cruise ship powered by liquefied natural gas, delivered to Ponant by Vard Norway in July 2021.Photo: ©Studio PONANT, Olivier Blaud.*

Shipbuilding in the Rest of the World

The orderbook at shipyards in the Rest of the World (RoW) increased slightly in 2021 from 4.1 m dwt to 5.1 m dwt even if the market share was on par with 2020 at 2.3%. The bulk segment dominates the RoW orderbook.

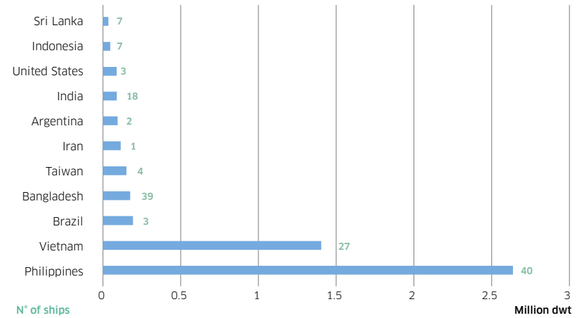
Curiously, where all other main shipbuilding countries saw the tanker orderbook shrink, RoW shipbuilders secured 3 times more orders for tankers in 2021 (1.2 m dwt) than in 2020 (0.4 m dwt). The new orders for bulkers doubled from 0.9 m dwt to 1.8 m dwt. However, they could not benefit from the surge in new containership orders.

Deliveries continued to decrease from 3.5 m dwt in 2019 to 2.7 m dwt in 2020 to 2.3 m dwt in 2021. However, the ratio between the current orderbook and yearly output jumped from 1.4 in 2020 to 2.2 in 2021.

Last year, only 8 RoW shipyards secured new orders (compared with 13 in 2019 and 7 in 2020). Two yards accounted for 92.7% of these new orders: Tsuneishi Cebu (Philippines) which bagged 57.1% and HVS (Vietnam) which secured 35.6%.

ROW		2020		2021	
		m dwt	Ships	m dwt	Ships
Orderbook	Market share	2.3%	6.3%	2.3%	5.1%
	Bulk	2.1	54	2.8	61
	Tanker	1.4	44	1.7	35
	Container	0.3	15	0.3	15
	All ships	**4.1**	**167**	**5.1**	**159**
Orders	Bulk	0.9	26	1.8	23
	Tanker	0.4	10	1.2	20
	Container	0.1	6	0.1	4
	All ships	**1.4**	**49**	**3.2**	**63**
Deliveries	Bulk	1.5	22	1.1	16
	Tanker	0.7	29	0.8	29
	Container	0.3	10	0.1	4
	All ships	**2.7**	**95**	**2.3**	**71**

Orderbook in Rest of the World at end-2021 (million dwt)



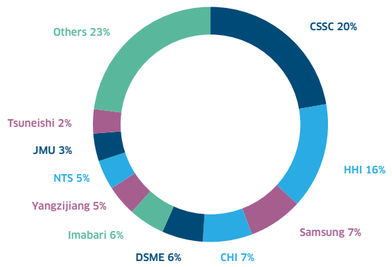
Some newsworthy events of the year

- The Philippines, supported by its **Tsuneishi Cebu** and **Austral Philippines yards**, remains by far the leader of the Rest of the World shipbuilding countries, holding 53.8% of the total RoW orderbook. This compares with shares of 52% in 2020, 45% in 2019, 48% in 2018, 54% in 2017 and 55% in 2016. It is important to note that 66% of Tsuneishi Cebu's current orderbook (2,7 mil. dwt) was secured in 2021 with 1.83 m dwt of orders. The new orders are only bulk carriers (19 Kamsarmax and 4 Ultramax) ordered exclusively by Japanese owners.
- Vietnam retained its second position in the RoW group in 2021 thanks to **Hyundai Vietnam Shipbuilding** (HVS) which accounted for 98.3% of the country's orderbook (4 LR2s, 16 MR tankers and 1 Ultramax). The country can also count on other shipbuilders like Pha Rung, Ha Long and Khien Ha.
- Brazil's orderbook is virtually empty. No orders have been taken since 2016. Currently only one shipyard (**Eisa Ilha**) still has orders (2 LR1s and 1 MR) which were ordered back in 2007-08.
- Although no order was secured in 2021, Bangladesh remains relatively active with an orderbook of 39 units spread across 6 different shipyards. The largest yard is **Bashundara Group** with 21 ships on its orderbook. The ships were mainly ordered by Bangladeshi owners except 3 x 9,000 dwt general cargo ships ordered by German Grona Shipping at **Western Marine**. The size of ships built in Bangladesh is below 10,000 dwt.
- With no shipping units in the orderbook, **CSBC**, the largest yard in Taiwan, decided to build 4 x 2,800 teu containerships on speculation for their own account.
- India is slowly coming back into the international ship-building market. **Chowgule Shipyard** secured 6 highly efficient 5,350 dwt hybrid vessels for ESL Shipping's Swedish subsidiary AtoB@C Shipping.
- In the orderbook of Sri Lanka's **Colombo Dockyard** there are 7 x 5,000 dwt eco bulk carriers to be fitted with diesel/electric hybrid power systems for Norway's Misje Rederi. Japan's Onomichi Dockyard owns 51% of Colombo Shipyard.

where all other main shipbuilding countries saw the tanker orderbook shrink, RoW shipbuilders secured 3 times more orders for tankers in 2021

Have we already entered a new supercycle?

Top shipyard groups based on orderbook 2021 (in dwt)



Top Shipyards		% Orderbook in dwt
China	CSSC	41%
	CHI	14%
	Yangzijiang	10%
	Others	34%
South Korea	HHI	49%
	Samsung	22%
	DSME	21%
	Others	8%
Japan	Imabari	39%
	JMU	18%
	Oshima Saikai	14%
	Others	29%

Vessels type		Laden (Knt)	Super Eco (mt)	Eco (mt)	Non Eco (mt)
Tankers	VLCC	13.0	46.0	52.0	80.0
	Suezmax	13.0	-	40.0	48.0
	Aframax	13.0	-	32.0	40.0
	Panamax	13.0	-	25.0	30.0
	MR2	13.0	-	20.0	28.0
Bulkers	Capesize	13.0	33.0	43.0	48.0
	Kamsarmax	13.5	-	29.0	31.0
	Supramax	13.5	-	25.5	33.0

SOME ASPECTS OF THE SHIPBUILDING MARKET

Shipbuilding 2021: Have we already entered a new supercycle?

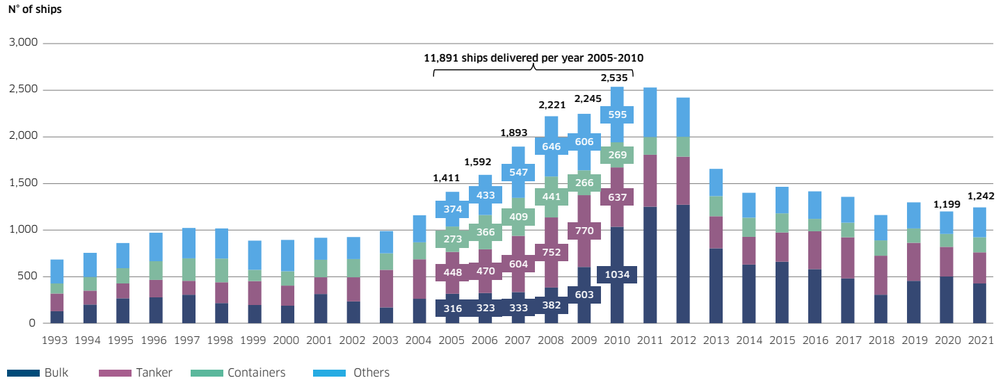
We believe that there is evidence to suggest that a new supercycle is looming. This will not be driven by a new Chinese economic boom as was the case in the 2000s, but rather a replica of the shipping boom which took place between 2003 and 2008 when an amazing number of ships were contracted. The question is that, in view of the spectacular activity witnessed in 2021, whether or not this supercycle has already started.

Why is there a looming new supercycle?

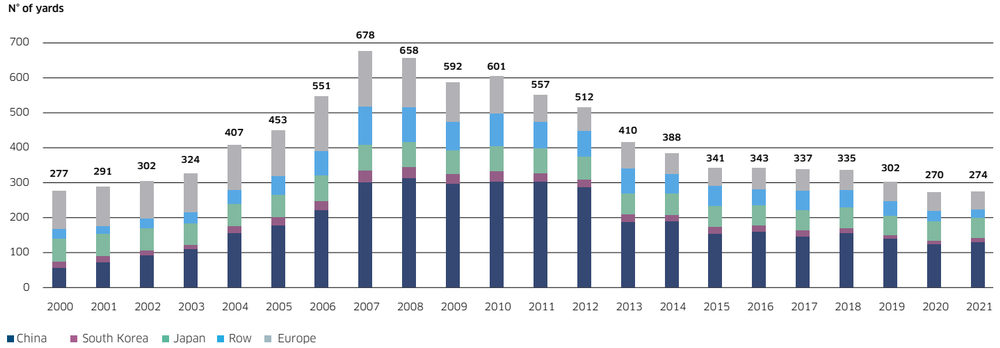
1. From the steep reduction in the number of shipyards which dropped from about 700 in 2007 down to about 300 by 2021. This drop saw active global shipbuilding capacity contract so that about 1,200 to 1,300 vessels can currently be built and delivered every year compared with the capacity for the construction and delivery of 2,000 vessels in the years 2005 to 2010.
2. Due to the significant consolidation that took place amongst shipbuilders in the intervening years so that 75% of the world shipbuilding production is now in the hands of 9 shipbuilding groups. Furthermore, 66%, 92% and 71% of the capacity in China, Korea and Japan is in the hands of only 3 shipbuilding groups.
3. Due to the need to replace a large number of vessels delivered between 2005 (1,400) and 2010 (2,500). This suggests tightness at yards, when placed against the aforementioned estimates that global shipbuilders can only construct and deliver 1,200 to 1,300 vessels per year.
4. Due to the need to replace non-eco vessels characterised by relatively large individual daily fuel consumptions that were built and delivered before 2010. This is required not only for the sake of competitiveness but also to meet stricter environmental regulations (EEDI / EEXI / CII / AER / EEOI etc.) and fight against climate change.

   Due to the requirement to meet the likely increase in demand for ships based on the rise of globalisation and the associated quadrupling of the merchant fleet since 1990 and a doubling since 2008. Despite this, there remains the possibility that the reverse could be true in the wake of political decisions, the economic decoupling between regions, pressure to reduce the CO_2 footprint of goods and a switch away from fossil fuels.
5. Since the usual shipping friends and foes act as great disruptors: black swans or white swans whose "when", "how", "intensity" escape our understanding, but which are certainties every year and induce large changes as experienced in countless times, notably:
   - The Covid pandemic
   - Logistical disruptions: Ever Given container carrier, ports congestion, lockdowns
   - Extreme fluctuations in the price of raw materials
   - Natural disasters
   - Sanctions, embargoes or worse

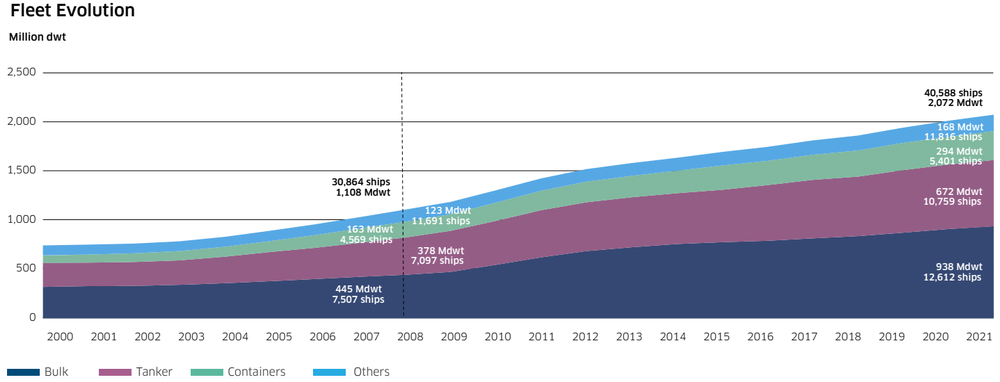
Shipyard deliveries by year



Number of active shipyards by year



Fleet Evolution



Did we enter into that new supercycle in 2021?

Yes and No!

So did we enter into that new supercycle in 2021?

Yes and No!

Yes - because of the steep rise in newbuilding orders during 2021 versus previous years (about 132 m dwt in 2021 versus 75 m dwt in 2020), exceeding actual yards capacity, stretching orderbooks (well into 2025).

Yes - because more eco-vessels with designs already compliant with EEDI Phase 3 have been ordered somewhat in advance of the calendar.

Yes - because more dual fuel vessels (LNG, LPG, Methanol) have been ordered.

Yes - because of the steep rise in newbuilding prices (+30%).

Yes - because of the even larger rise in prices for second-hand vessels (especially container carriers and bulkers) as a kind of anticipation of something bigger to come.

No - because the spike in freight rates (bulk and container), a key element in the overall picture, was driven by an unexpected combination of (i) the post-Covid recovery in demand which has seen global GDP rebound by 5.9% in 2021 after plunging by 3.1% in 2020 and (ii) continuing Covid-induced supply chain disruptions.

No - because the average age of ship demolition is well above 25 years (29 years for bulkers, 26 years for tankers and 29 years for container carriers). This therefore suggests that the new supercycle should not start before mid-2025.

Picture: ***BITU RIVER****, Bitumen Tanker, 14,500 dwt with twin azimuth thrusters and diesel-electric propulsion. Under construction in CMJL, Yangzhou, for Rubis Asphalt Middle East (RAME).*

What propulsion for tomorrow? A conumdrum for shipowners!

The IMO has mandated an intermediate milestone of cutting CO_2 emissions by 40% by 2030, although ships are typically designed and built to last for 30 years. Which propulsion to decide?

In pre-Covid times (not so long ago), one of the two main focuses of the shipping industry concerned the search for energy efficiency. In 2010, the IMO introduced new regulations to improve the energy efficiency of newbuildings and established the Energy Efficiency Design Index (EEDI). This regulation saw targets compared against the 2008 reference line so that ships contracted over 2015-2020 would have to be 10% more efficient, ships contracted over 2020-2025 would have to be 20% more efficient and ships contracted after 2025 would have to burn 30% less fuel.

The second main focus concerned the prevention of pollution from ships and how to eliminate or diminish pollutants. This included, for example, legislation regulating the reduction in nitrous oxide (NOx) which tightened from Tier II (<14.4g/kwh) to Tier III (<3.4g/kwh). This was introduced in North America as of 1 Jan 2016 and North Sea/Baltic as of 1 Jan 2021. However, this regulation covered a limited area and consequently impacted a limited number of ships. However, over recent years, the IMO has widened it ambition and introduced legislation on a worldwide level. This included the reducing in the sulphur oxide (SOx) content of ship emissions which it reduced from 3.5% to 0.5%. This essentially outlawed the burning of 380 Cst fuel by a ship unless it was fitted with a scrubber.

Ship propulsion technology has changed marginally with the implementation of Exhaust Gas Recirculation (EGR) or Selective Catalytic Reducer (SCR) technology to decrease NOx emissions. Meanwhile, the installation of scrubbers (open loop, closed loop or hybrid) to reduce SOx emissions provided an economical solution for owners to avoid paying for higher priced low sulphur fuels. Accordingly, main propulsion has changed very little over the last 40 years and remains centred on slow speed engines running on oil-based fuels.

Some owners have already decided to adopt more radical solutions and opted for dual fuel (LNG, LPG, methanol) propulsion as a method to cut their emissions of pollutants including SOx, NOx and particulate matter (the latter being somewhat forgotten by current regulations). Moreover, this strategy also offers cleaner energy and reduced CO_2 emissions (less carbon and more hydrogen in the molecular chain). Indeed, SOx and particulate matter are eliminated while NOx emissions are cut by 86% by dual fuel LNG propulsion while CO_2 emissions are cut by 20%. The shipping community can be grateful to these shipowners who decided to invest additional CAPEX together with additional operational constraints.

Scrubber table (number of ships)

	Delivered + To be retrofitted	% Active Fleet	On Order	% Ordebook
Bulk	1,694	13%	200	22%
Container	1,237	23%	453	59%
Tanker	1,387	13%	158	26%
Others	804	7%	58	7%
Total	**5,122**	**13%**	**869**	**28%**

Rotterdam VLSFO/HSFO Spread 2021

$/mt

	In Service	% Active fleet	On Order	% Ordebook
Bulk	7	0.1%	51	5.7%
Container	35	0.6%	111	14.4%
Tanker	74	0.7%	131	21.7%
Others	136	1.2%	220	33.4%
Total excl. LNG	**252**	**0.6%**	**513**	**17.5%**

DF active fleet	Active Fleet	DF Ordebook	Ordebook	DF % of Fleet + Ordebook
7	12,612	51	897	0.4%
35	5,401	111	770	2.4%
74	10,759	131	605	1.8%
136	11,172	220	659	3.0%
252	**39,944**	**513**	**2,931**	**1.8%**

Dual fuel ships on order (excl LNG carriers)

Dual fuel with	# ships
LNG	365
LPG	95
METHANOL	32
ETHANE	12
BATTERIES	9

However, in 2021, there was a shift towards greater awareness of climate change and certain bodies including The World Bank, International Energy Agency and IPCC officially condemned all fossil fuels. This drew the attention of the shipping industry to the deleterious effects of methane for instance which has 82 times more warming potential than CO_2 over a 20-year period and has a warming potential 28 times more powerful than CO_2 across a 100-year period. However, other important bodies including the European Union have advocated that realpolitik now has to prevail and that "shipping cannot achieve its greening without the use of LNG as a transitional fuel given the lack of zero or low carbon alternatives."

In the second half of 2021, prices for LNG bunkers rose sharply to around $1,500/mt which were three times those of conventional oil-based bunker fuels. This added to the financial burdens of these entrepreneurial shipowners that had forayed into unchartered territories and took huge financial risks to adopt cleaner energies.

These pioneer shipowning companies are contributing to the progress of the industry in countering some of the negative impacts of new fuels. Considering that there is now a greater awareness on the whole carbon chain, it is useless to opt for methane or methanol or tomorrow ammonia if the whole chain of production from 'well to wake' generates more greenhouse gas emissions than heavy fuel oil propulsion. Accordingly, these pioneer companies are now increasingly studying the potential of biogas, synthetic gas and e-gas.

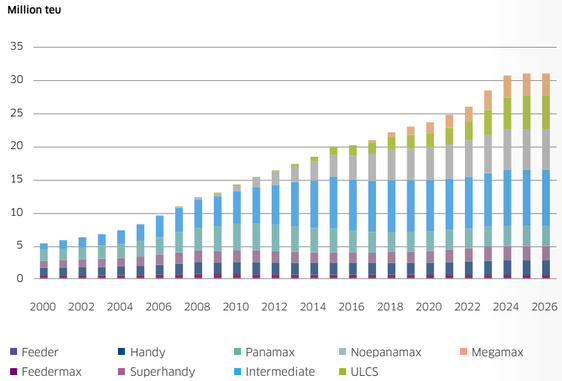
To reach the IMO's goal of a minimum 50% reduction in total GHG emissions by 2050, compared with 2008, the shipping industry will need to find the optimal mix of technical, operational measures and innovative solutions.

While waiting for future innovations, the maritime industry can also choose sobriety and opt for slow steaming. For example, a 10% reduction in speed, would be the equivalent of a 30% reduction in power consumption and CO_2 emissions. This notion can be derived from the mandatory measures adopted at June 2021's IMO MEPC 76 meeting making sure that the attained EEXI is lower than the required EEXI on non-compliant vessels: the Shaft Power Limitation (ShaPoLi) or Engine Power Limitation (EPL) which imply a speed reduction, are likely to be the easiest options to achieve compliance.

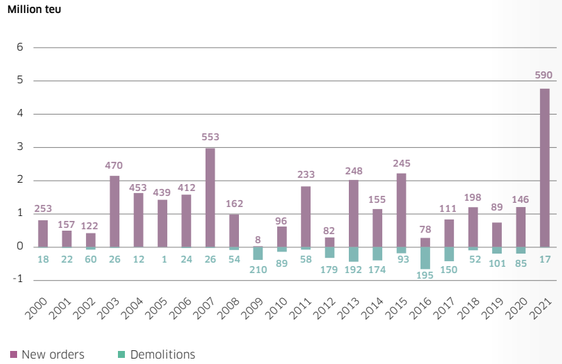
Frenzy for container carriers: a familiar case?

A surge in newbuilding orders for container carriers is not new. For example, in 2003, 440 container carriers newbuildings (slightly more than 2 m teu) and in 2007, 551 container ship newbuildings (slightly less than 3 m teu) were contracted. At the time, this represented more than 30% of the existing container carrier fleet. In 2021, the 591 container carrier newbuildings (around 5 m teu) constituted only an additional 20%. Therefore, except for changes of paradigms, we may hope that what may have looked to outsiders as a new frenzy, will prove to have been the correct decision. It is also possible that the new rules for EEXI and CII will have an impact on the speed on container carriers helping to absorb any extra capacity.

Containership fleet evolution and current orderbook



Containership fleet new orders vs demolitions



PERSPECTIVES FOR 2022

We have now entered the third year of Covid and the continuous emergence of variants could have larger impacts than initially thought. New black swans will inevitably appear and jeopardize any forecast.

The IMF's forecasts for the global economy remain relatively solid as they forecast global growth of 4.4% in 2022. Nonetheless, there remain clouds on the horizon as outlined by the pandemic calling into question the globalization which shifted the production of essential goods (medicine, equipment, etc.) far away from consumer markets. Besides, one of the reasons for the success of shipping has always been based on the very low cost sea transportation. If that cost rises, as we saw in 2021, as the price of shipping a 40' container from Shanghai to Rotterdam jumped from $1,500 to $15,000, it will have a huge impact on the cost of the goods delivered to the end user.

New black swans will inevitably appear and jeopardize any forecast

New orders, prices, deliveries, cancellations and demolitions

We estimate that around 100 m dwt of new tonnage could be ordered in 2022, roughly 30 m dwt bulkers, 20 m dwt tankers, 30 m dwt container carriers and 10 m dwt of others. Consequently, and together with inflationary pressure, we expect newbuilding prices to continue to rise in 2022. However, this should be at a more moderate pace than in 2021.

We believe there will be relatively little slippage and cancellation and that deliveries in 2022 could reach a figure of around 90 m dwt.

In principle, vessel scrapping should rise in the near future, especially in the tanker sector. Nonetheless, we remain quite cautious on this issue and would bet that between 20m and 30m dwt of tonnage could be demolished in 2022.

*Picture: **MARIE**, semi-refrigerated LPG 9,100 cbm, built by Kyokuyo Shipyard and chartered by Geoga. For delivery in February 2022. / F. Cadiou*

Ship Finance

Here comes the cash

Marking the start of the Covid pandemic, 2020 had been a year characterized by uncertainty for many shipping sectors.

As the pandemic continued into 2021, uncertainty diminished and supply chain disruptions reduced available tonnage, leading to rising rates especially in the container shipping and dry bulk segments.

With these two large shipping segments witnessing a sharp improvement in earnings, the financial needs of shipowners differed significantly from last year.

2021 will be remembered as a record year for container shipping profitability. The increase in earnings was so spectacular that it allowed liner companies to immediately make up for the past 10 years of difficult market conditions. With plenty of cash available, liner companies were in a position to both reduce their leverage by repaying debt as well as increase their capital spendings. Apart from investing into new tonnage, both secondhand and newbuildings, some liners also took advantage of their comfortable cash position to engage into strategic acquisitions.

The dry bulk segment also finally benefitted from a significant market improvement, albeit not as spectacular as container shipping. With some players eager to execute on a long overdue exit of this segment, and others willing to enter what they saw as a market with upward potential, the sale and purchase market proved very active.

The tanker market spent the whole year hoping for a recovery. The disconnect between sustained asset values and low earnings hampered sale and purchase activity. As a consequence, financing activity in this segment was primarily related to refinancings or sale and leasebacks to generate cash.

While the offshore oil and gas sector continued to suffer, renewables were in fashion with numerous funds being raised during the year for assets to be employed in this industry.

The cruise operators had again a difficult year, however, the easing of uncertainty allowed them to raise cash at much better terms than the previous year.

The environmental footprint of shipping remained at the top of the agenda, and a growing number of companies made use of sustainable finance products for refinancings or new projects.

Last year, we concluded by saying that the pandemic had proved how essential shipping was and that this would hopefully help to attract capital to the industry. Private equity firms identified the opportunity as illustrated by the flurry of M&A transactions they engaged into this year in the maritime space.

2021 will be remembered as a record year for container shipping profitability

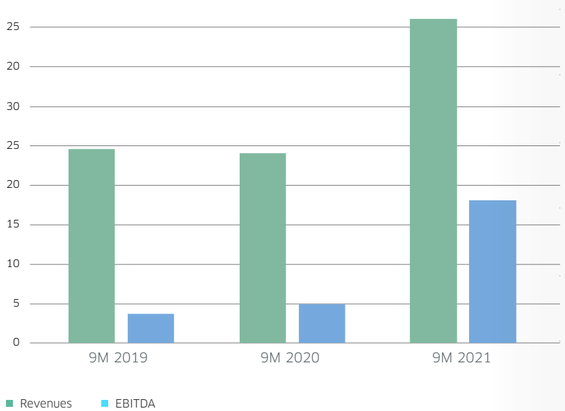
CONTAINERSHIPS A.K.A. MONEY PRINTING MACHINES

The Ever Given blocking the Suez Canal was not the only issue affecting global supply chains in 2021. A combination of factors resulted in chaotic supply chains, ultimately benefiting liner operators.

Revenues and profitability for liner operators reached historical highs in 2021. To illustrate this, we compiled financials for operators representing around one third of the total containershipping capacity for the first 9 months of 2019, 2020 and 2021.

Revenues for the first 9 months of 2021 reached close to $83 billion, a 70% increase compared with previous years. The increase in profitability was even more spectacular. Earnings Before Interest, Taxes, Depreciation and Amortisation (EBITDA), which also represents a good proxy for cash generation, was above $35 billion - close to four times what was achieved in the years before!

Aggregated financials for liner operators representing one third of the world capacity



In order to keep pace with the demand to move boxes, Liner operators found themselves lacking vessels. This triggered a steep increase in sale and purchase activity, resulting in sky high vessel prices. Funding was done by their own cash flows. Deterred by the high values, financiers were reluctant to provide leverage on container ships.

THE DELTA VARIANT SPOILT THE PARTY FOR CRUISE OPERATORS

A highly transmissible Covid variant, referred to as the "Delta variant" emerged in May 2021 and caused continued disruption to cruise operations, jeopardizing the summer season.

Cruise operators were able to put some capacity back into operation, however, at lower levels than initially anticipated. In their latest reports, Carnival and Royal Caribbean report operating capacities in the 60% range. Occupancy of the operating vessels is far from full at maximum 60%.

The combination of additional costs related to the restart of operations as well as reduced vessel load factors contributed to continued liquidity pressure for cruise operators.

Debt holidays and liquidity lines were extended, further liquidity was raised from the market. Towards the end of 2021, cruise operators had managed to build back one year of liquidity buffer based on last cash burns. Despite delaying the recovery, the Delta variant came as less of a shock to the market than that initially triggered by Covid in 2020. This decrease in uncertainty translated into lower costs of capital, with investors having a more positive outlook on the industry than last year. Consequently, cruise operators were able to raise funds at lower interest rates, in some cases down to half of those seen in 2020, which they used to repay their expensive liquidity lines.

SHIPPING FINANCE ACTIVITY IN 2021

Bank loans remain the largest source of shipping finance and the aggregated portfolios of shipping finance banks represents around $300 billion. Chinese leasing is growing rapidly, and the portfolios of Chinese Lessors is estimated at over $70 billion. The share of Alternative / Direct Lenders continues to grow, from a lower level.

If we are to take guidance from reported syndicated activity, 2021 was a quiet year with loan volumes on the low side from an historical perspective. There was notably a much more limited number of large syndicated loans compared with what is usually seen, and banks rather arranged club deals, grouping a smaller number of banks.

With asset values rising quickly over the year for container vessels and bulk carriers, the counter-cyclical lending policies of banks kicked-in, with lending conditions progressively tightening as asset values strengthened.

For example, by the third quarter of 2021, banks were reluctant to provide the same leverage as 6 months before for bulkers without having an employment attached. Financing existing containerships became more of a corporate credit than asset-based exercise, with values being primarily determined by the contracted earnings, rather than the asset itself.

Taking advantage of cash generated from operations, some owners in the dry bulk and container shipping space opted to repay debt and deleverage their balance sheets.

This left banks chasing tanker finance, however the lack of sale and purchase activity provided limited opportunities outside of the usual refinancings.

The "flight to quality" witnessed over the past years continued, with large banks competing for the best credits. The development of a two-tier market for shipping finance continued. Pricing for the best credits remained under pressure. The influx of cash from good markets made the search for financing somewhat easier for smaller owners.

Chinese lessors were very active in the maritime space in 2021

Chinese Leasing houses were very active in the maritime space last year. The sector benefitted from its relative attractiveness compared with aircraft and real estate. The capital allocated to shipping during the year was significantly higher than in previous years, more than compensating early repayments from cash-rich clients. As a result, the majority of Chinese Leasing houses increased their exposure to shipping in 2021.

2021 Chinese leasing highlights for tankers

Borrower	Size	Details
International Seaways	$245 mn	SLB for 3 Dual-Fuel VLCCs (BoComm)
Trafigura	$140 mn	SLB for 5 product tankers (CDB Leasing)
Torm	$172 mn	SLB for 9 product tankers (CDB Leasing)
Navig8	$110 mn	SLB for 5 chemical tankers (CSSC)

EVERYTHING GREEN

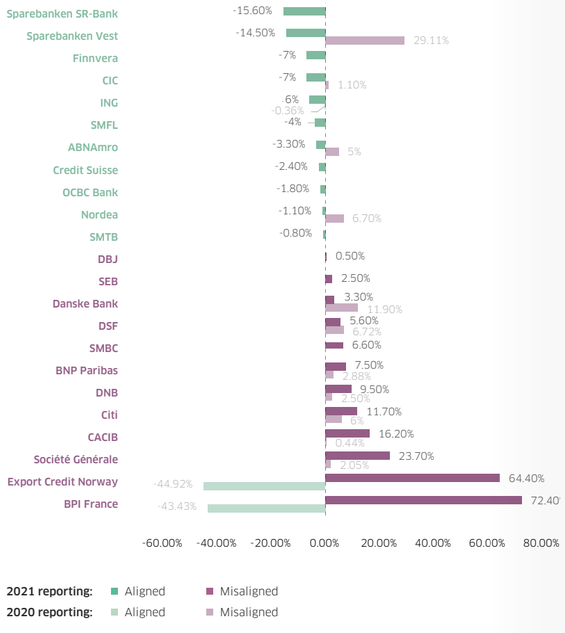
Environmental, Social and Governance (ESG) topics continued to attract the interest of financiers.

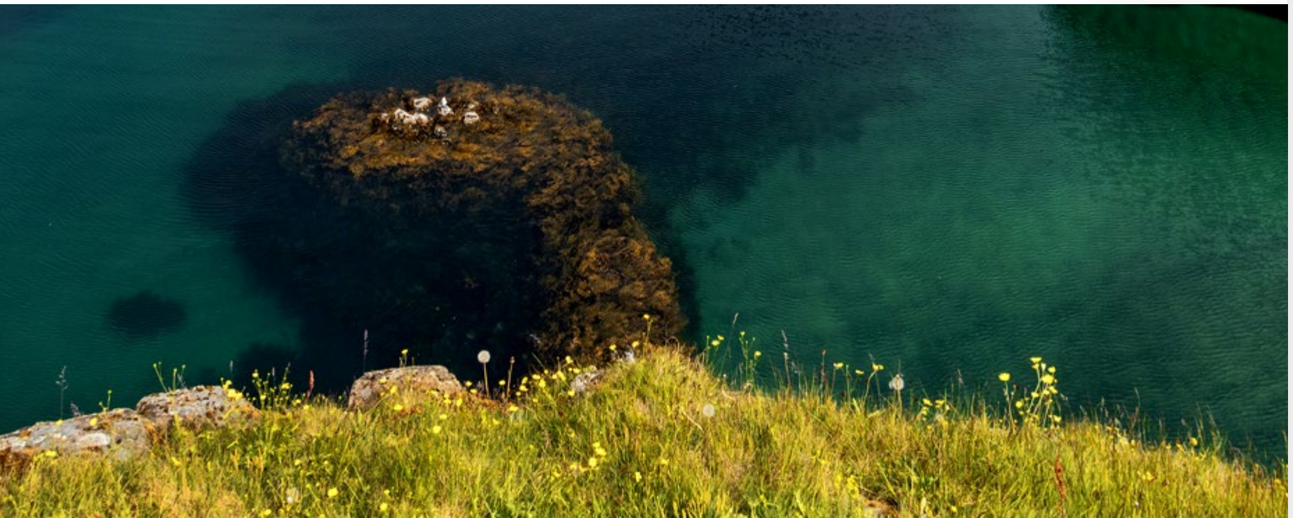
The list of Poseidon Principles signatories increased to reach a total of 29 at the end of 2021, up from 20 at the end of the previous year. New signatories were primarily financiers from Asia, in line with hopes expressed by existing signatories.

2021 was the second reporting year for early Poseidon Principles signatories, and the first one for many institutions who joined later on. In total, 23 banks disclosed how their portfolio aligned compared with the 4th IMO GHG study in terms of carbon emissions. In 2020, the reporting was done on the basis of the 3rd IMO GHG study.

Results are somewhat difficult to compare with the previous year, due to, in some instances, strong portfolio movements. This is primarily due to the change of decarbonization curve, as well as the unusual operations of cruise vessels. Lenders with cruise vessels in their portfolio were notably penalized by the poor carbon track record of these units for the year 2020. Overall, the reporting shows that the portfolio of 11 of the 23 signatories was aligned with the decarbonization curve of the 4th IMO GHG study, an improvement compared with the 2020 reporting.

Alignment of the Poseidon Principles signatories to the 3rd IMO GHG study (2020 reporting) / 4th IMO GHG study (2021 reporting)





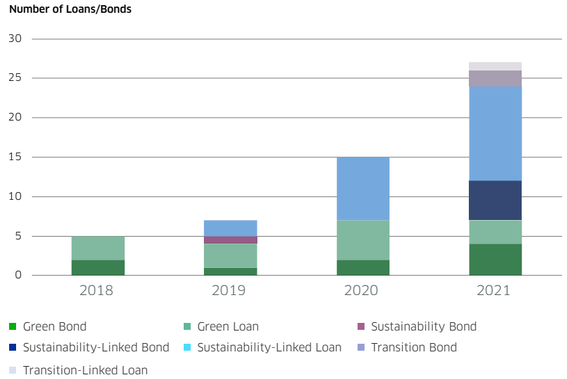
Sustainable Finance continued to gain traction in the maritime sector. The number of issues increased substantially.

Based on our own compilation, total volumes represented around $6.5 billion in 2021. This is lower than total volumes achieved in 2020, when a $5 billion Sustainability Linked Loan by Maersk boosted the statistics.

Along with the increase in the number of sustainable finance products issued, the number of borrowers also increased, illustrating a wider spread of sustainable finance amongst shipping players.

Two of these sustainable finance issues stand out: The Green Bond issued by Maersk, as it reached a record low pricing with a 0.75% coupon, as well as the KiwiRail loan as it was the first ever completed following the Climate Bond Initiative certification.

Maritime sector sustainable finance



Top 2021 issuers of sustainable finance

Issuer	Size	Details
Hapag-Lloyd	$1,205 mn	A Sustainability-Linked Bond and a Green Loan
K Line	$1,045 mn	A Sustainability-Linked Loan and a Transition-Linked Loan
Seaspan	$950 mn	Two Sustainability-Linked Bonds and one Sustainability-Linked Loan
AP Moller Maersk	$564 mn	A Green Bond (0.75% coupon)
Eagle Bulk	$400 mn	A Sustainability-Linked Loan
Hafnia	$374 mn	A Sustainability-Linked Loan
Kiwirail	$242 mn	A Green Loan (first CBI certification)

KiwiRail completed the first loan certified under the Climate Bond standards

MERGERS AND ACQUISITIONS

2021 was an interesting year in terms of mergers and acquisitions.

Apart from usual consolidation, there were a number of moves from private equity firms to take companies private, or to exit their investments.

One of the largest consolidations included the merger of International Seaways with Diamond Shipping, creating a 100-vessel strong entity in the tanker space.

In the LNG sector, private equity firms took listed companies private, with New Fortress Energy acquiring Golar LNG Partners and Stonepeak Infrastructure Partners acquiring Teekay LNG Partners.

Other notable private equity firm investments included the acquisition of Ocean Yield by KKR and that of Maas Capital by Entrust.

DEBT AND EQUITY CAPITAL MARKETS

2021 was a more active year than 2020 for capital markets, both on the equity as well as debt side.

On the equity side, notable IPOs included that of the shipyard Hyundai Heavy industries in Korea ($934 million), ZIM in New York ($217 million) as well as of Taylor Maritime in London ($250 million). The largest private placement was for Norwegian Cruise line for a total of $1.1 billion.

Norway was the most active market for bonds in terms of number of issuances. Thanks to large cruise bonds, US markets remained at the top in terms of volumes with a total of around $5 billion.

Dry Bulk

The Great Rebound

After experiencing 2 successive black swans in 2019 and 2020, namely the Vale dam incident and the Covid pandemic, 2021 was expected by most industry players to be characterised by a modest recovery. Entering 2021, such expectations were blown out of the water, as freight rates across all vessel sizes skyrocketed, with even the Handysize index, HS7TC averaging $25,702/day (+221% y-o-y). At certain occasions, we even witnessed geared bulkers outperforming Capesizes, thereby providing bottom-up support. The drybulk fleet enjoyed numerous tailwinds throughout 2021 on the back of a harsh winter induced by LaNina, a ban on Australian coal that realigned coal trade flows, rallying commodity prices, firm FFA rates, unprecedented Chinese port congestion and bullish container rates. To cap things off, shipowners managed to exercise considerable discipline in keeping a lean orderbook against a backdrop of decade-high rates. As such, as we enter 2022, regardless of minor fluctuations of seaborne commodity demand, we anticipate that the long-term prospects of the drybulk market will be anchored by limited fleet deliveries.

SHANDONG INNOVATION
Newcastlemax Bulk Carrier, 210,989 DWT, built in 2021
by CSHI Yangzhou, operated by Shandong Shipping.

CHARTERING

Capesize (>120,000 dwt)

Nearly one year into the pandemic and 1Q21 started with rather unseasonal strength. The rapid deployment of vaccines fuelled strong hopes for a global demand recovery. Additionally, major stimulus packages and increased GDP growth prospects led to a robust forecast for global commodity markets, with many specialists talking about a decade-long super-cycle in the making.

From a shipping perspective, congestion in Chinese ports due to bad weather tightened the supply of ships available in the market. With iron ore prices reaching new highs, Brazilian and Australian miners increased their exports volumes by 12.8 mln mt and 6 mln mt, respectively, compared with 1Q20. Capesize rates were also supported by the smaller vessels, especially by the red-hot Panamax market which allowed Capes to price in better on smaller stems and charterers to combine or increase Panamax stems where possible. Some log shipments were also seen transported on Capes from ECSA. China's ban of Australian coal and India's coal imports picking up in 1Q21 also absorbed a substantial amount of ships on long duration trips from Colombia, US East Coast and even ARA.

The second quarter saw the typical seasonal recovery, with the C5TC hitting a 10-year peak of $44,817/day in early May. However, the volatility remained equally strong and several events worth noting erased most of the gains achieved. In the Atlantic, strikes at ArcelorMittal in Canada and CMC in Colombia notably reduced the demand for spot ships. In Western Australia, unplanned maintenance and labour shortages dampened iron ore exports, which are usually high in June before the end of the financial year. Furthermore, high VLOC congestion in Brazil exacerbated the lack of demand for market tonnage (both events pushed iron ore prices to a record $230/mt). Consequently, the index more than halved to reach an unusually low $20,000/day, considerably below expectations for the quarter. This also created a perfect opportunity for FFA traders to accumulate long positions for a Q3 which was promising strong gains forecasted by robust fundamentals.

Containership rates rallied to record levels, supporting Handysize and Supramax ships which could compete on specific cargoes. Inefficiencies in the market also helped to fuel a rapid recovery on all the main rates. The early arrival of the cold temperatures made coal prices soar and accordingly, saw more cargoes from Richards Bay to China or from East Australia to Europe, as the Chinese ban on Australian coal remained in place, a positive factor for overall ton-mile demand. Poor weather and Covid outbreaks greatly increased congestion at Chinese discharge ports, which reinforced a tight supply of tonnage. Global steel production also boomed (+14% y-o-y at the time) despite high commodity prices. As a result, most miners willing to increase their export volumes, competed for an ever-shrinking number of open ships and paid big premiums for any unit they could find. The forward curve for the second half of the year was looking very bullish for owners, with a $10,000/day contango against the spot market. The tonnage supply could simply not match this unprecedented demand and the BDI soon reached a 13-year high while the C5TC printed $86,953/day in early October.

Bad weather in the North Atlantic, but mainly in China, led to port closures which temporarily brought positive momentum to the market. However, the euphoria came to an end in Q4, with general profit-taking in the FFA market (and fresh short positions) driven by seasonally lower demand. Rates dropped rapidly until finding a floor mid-November at around $25,000/day. Cargo volumes out of West Australia to China remained steady, with the C5 route being fixed comfortably above $14/mt while the C3 route (Tubarao to Qingdao) was concluded near $30/mt, both very high for early December. This slump brought an end to an exceptional year, with 1Q22 looking rather bearish due to Beijing's efforts to curb air pollution ahead of the Winter Olympics while significant rainfalls and cyclones were impacting Brazil and Australia. Omicron remains a question mark too, as both China and Western Australia seem willing to fiercely maintain a strict Covid policy, leading to port closures and quarantines.

Supply

Fleet (120k+ dwt): 1,768 ships of 360.7m dwt – an increase of 3.6% year on year.

The orderbook stands at only 8% of the current fleet, which is one of the lowest over the last few years. Uncertainty surrounding fuel technology options and environmental regulations are making it difficult for owners to confidently place new orders. Most slots in yards have been booked until 2025 (mainly by containerships). Owners are also keeping in mind EEXI and CII regulations that are coming into force in 2023. This should make some of the older and inefficient ships obsolete, thus reducing ship supply.

Demand

- Australian iron ore exports totalled 898.8 mln mt in 2021 which was 4.2 mln mt lower year-on-year.
- Brazil exported 344.7 mln mt of iron ore in 2021 which was 15.0 mln mt higher year-on-year.
- Chinese Steel production was 1,033 mln mt in 2021 which was 3% lower year-on-year.
- China's share of global steel production dropped to 54% in 2021 from 58% in 2020.
- China imported 285.8 mln mt of coal in 2021 which was 36.7 mln mt higher year-on-year despite the aforementioned restrictions.

The Capesize orderbook stands at only 8% of the current fleet, which is one of the lowest over the last few years

Babycape and Post-Panamax (85,000-120,000 dwt)

Last year we wrote that Post-Panamax and Babycape segments were more negatively affected than Kamsarmaxes by the 2020 market downturn, yet conversely the Overpanamax size profited more than the Kamsarmaxes during the bumper markets of 2021. As the global economy began restarting, so demand for the extra carrying capacity was able to attract greater premiums. First generation units, now all over 10 years old, were arguably the biggest winners, as they remained competitive in an environment where reducing time charter rates, rather than bunker consumption, became charterers' major concern.

As in 2020, Over-Panamaxes loaded three quarters of all the segment's cargos from ports east of Singapore, even as Australia-China coal trade plummeted to zero due to the export ban. Yet, even prior to the export ban, Japan was already the primary destination for Overpanamax coal cargoes ex-Australia, whilst Australian Bauxite shipments to China remain constant Y-O-Y. The largest growth region was the Black Sea, reflecting export increases seen from this region on Kamsarmaxes. Meanwhile, we continue to wait for widespread acceptance on the soybean and grain routes for vessels over 32.2 metres beam.

Babycape trade patterns remain similar to those of 2020, with one third of the market concentrated around the West Australia iron ore miners (Atlas, PMI, CITIC). However, the Australia-China coal ban necessitated Chinese end users to look further afield for energy and steel requirements and thus we saw US coal once more flowing to China, whilst rising gas prices saw the odd shipment of Australian steam coal travelling to Turkey.

Babycape tonnage control remains in the hands of the big three operators of Oldendorff, Swissmarine and Cargill, with Cobelfret amongst the largest Post-Panamax operators in the world. Several Far-Eastern operators such as Tongli have also been slowly building Overpanamax fleets for use primarily on Indonesia and South African trades to China.

Looking forward, we should continue to see a greater divide between older non-eco units and modern Overpanamax units - many of which are built on a speculative basis. Already, we are seeing traditional Kamsarmax operators taking interest in the modern Overpanamax units, as they explore new trades. Moreover, whilst the first-generation Overpanamaxes largely followed a handful of dominant designs, now we are seeing a multitude of variations in beam, cubic capacity, and draft on designs of similar deadweight. It shall be interesting to see how the market prices this Brave New World.

Unfortunately, the same cannot be said for the Babycape fleet. This year, two-thirds of the existing fleet will be 10 years old or over. With a very limited orderbook to come, it therefore remains to be seen in which trades Babycapes can continue to be employed in their next decade of existence, and amid an increasingly carbon-conscious environment.

*Picture: **CSL KAJIKA**, Kamsarmax Bulk Carrier, 82,052 DWT, built in 2015 by Jiangsu New Yangzijing, operated by CSL.*

Panamax (68,000-84,999 dwt)

The Panamax segment experienced a largely positive year in 2021, driven by increased coal and grains demand, port congestion and a year-on-year deceleration in fleet growth. Covid continued to play a significant role with ships required to adhere to new government regulations in numerous countries whilst shore-based outbreaks also led to port restrictions and even shutdowns in some cases.

The average of the 5 Time Charter indexes (5TC) ended 2021 at $23,158/day having started the year with an average of $12,272/day. The large increase in the index does not, however, reflect the heights the market saw in 2021. The 5TC average peaked at $38,952/day on 25 October before sharp losses in the freight futures market saw the index lose over 45% of its value over the following three weeks. It is worth noting that the average of the 5TC index between 25 June and 25 October was $34,250/day, reflecting the strength in the second half of the year prior to the sharp decline. As we finished the year, the index was starting to increase again although was still short of the full year average of $26,898/day.

At the start of 2021, the average waiting time in Chinese ports for Panamax tonnage was just over 30 days. This figure was inflated by numerous vessels laden with Australian coal, unable to discharge since the Chinese Government introduced its ban in October 2020. Congestion in China did gradually decline throughout the year and the 2021 average of 19.4 waiting days was down on the 2020 average of 24.1 days, but still comfortably above the 2019 average of 12.4 days.

On 29 August 2021, Hurricane Ida made landfall in the US Gulf causing damage to several grain elevators and resulting in flooding and power outages in the region. Whilst there was a period of downtime and a slowing of exports while repair work was completed, the overall effects on total US Gulf grain exports were reasonably minimal. A total of just over 90 million tons of grains was loaded across all sizes in 2021 from the US Gulf, a drop of 1.7 mln tons year-on-year. From this total, just under 36.3 million tons was loaded on Panamax tonnage compared with around 37.8 million tons in 2020. During repairs to US Gulf infrastructure, there was an increase in grains being routed via the North Pacific and around 44.2 million tons were loaded from the region on Panamaxes in 2021, an increase from 39.2 million tons in 2020. However, this did go against the overall flow of grains shipped from the region with total North Pacific volumes falling from around 75.4 million tons in 2020 to just over 72.5 million tons in 2021. East Coast South America grain exports suffered a dent year-on-year with 112.2 million tons moved on Panamaxes in 2021 versus around 120 million tons in 2020 due to a

Covid continued to play a significant role with ships required to adhere to new government regulations in numerous countries whilst shore-based outbreaks also led to port restrictions and even shutdowns in some cases.

*Picture: **LOWLAND COURAGE**, OverPanamax Bulk Carrier, 95,823 DWT, built in 2019 by Oshima, operated by CLdN Cobelfret.*

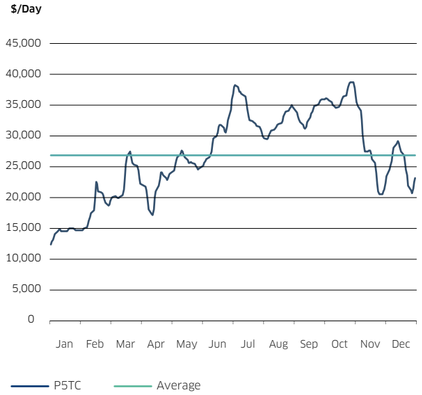
muted start to harvesting as a result of heavy rains. Worldwide seaborne grain movements across all vessel sizes (including cabotage) is circa 551 million tons in 2021, a loss of around 12 million tons from the previous year. This loss in volumes was offset by an increase in ton-miles from USG/China corn shipments and Chinese port congestion issues that tightened tonnage availability.

Despite ongoing discussions involving governments and environmental groups, notably at COP26, to try and limit the usage of coal, global coal movements by retained its dominant role in dry freight. Around 1.25 billion tons of coal was loaded on dry-bulk ships in 2021 for exports, of which almost 34% was carried on Panamax tonnage. This is up from 1.195 billion tons in 2020 when 32.2% was carried on Panamaxes. Last year saw an estimated 5,938 coal-laden Panamax international voyages with the total of circa 420 million tons comfortably exceeding 2020's 5,427 voyages and 386 million tons. While Australian coal exports on Panamaxes increased by 8 million tons year-on-year, the biggest increase was from Southeast Asia, where just over 26 million additional tonnes of coal were shipped on Panamaxes compared with 2020. The main recipient of this incremental coal was China, as on-going trade tensions with Australia saw coal remain on the list of banned products. Coal exports carried on Panamax tonnage from the US fell in 2021 with around 3.0 million tonnes less shipped from the US East Coast (just under 18 million tons) versus 2020. However, coal exports on Panamaxes from the US Gulf increased by 1.42 million tonnes to 6.59 million tons.

The Panamax fleet continued to grow in 2021 and now sits at 2,458 ships, with 55.9% accounted for by Kamsarmaxes and 44.1% by Panamaxes. Last year only saw 8 Panamaxes demolished, (totalling 585,921 dwt). Meanwhile, unsurprisingly, no Kamsarmaxes were scrapped. Although 33% of the current Panamax fleet is now over 20 years old (357 ships) and 24.8% within the 15-20 year age bracket (269 ships), it is not expected we should see any significant increase in demolition activity in 2022, with the market considered to be sufficient to support these older units. The orderbook for 2022 shows a slight increase in deliveries from 2021 with 8 Panamaxes (592,099 dwt) and 106 Kamsarmaxes (8,732,276 dwt) due to be delivered. So far, only 2 new Panamaxes (134,484 dwt) and 93 Kamsarmaxes (7,670,450 dwt) are scheduled for delivery in 2023. Considering that shipyards are largely at full capacity over the next couple of years, we expect these figures to remain stagnant.

Export wise, a total of just over 912 million tons of cargo across all dry bulk exports was carried on Panamaxes in 2021, up from 849.8 million tons in 2020. The 2021 total accounts for around 17.5% of all dry bulk cargo carried across all sizes worldwide. This increased demand is reflected by Panamaxes completing a total of 13,419 voyages in 2021, an increase of over 940 voyages compared with 2020.

P5TC vs Average 2021



Supramax and Handysize (25,000-67,999 dwt)

In our last *Review*, we had opinioned that geared bulkers in 2021 were primed for a rebound. Since then, the runts of the drybulk family have easily exceeded the wildest expectations with S10TC and HS7TC averaging $26,770/day (+227%) and $25,702/day (+221%), respectively, for 2021. In fact, there are multiple occasions when these indices outperformed their Capesize and Panamax brethren, effectively cushioning the general freight market from any lulls for a good chunk of 2021. We even saw Capesize fixtures taking on typical Handysize cargoes such as logs. Excluding well-touted factors such as port congestion in China, the tailwind effect of rallying commodity prices and drybulk FFAs in general, there were two notable demand-side drivers behind the exceptional performance of geared bulkers.

We even saw Capesize fixtures taking on typical Handysize cargoes such as logs

*Picture: **SHANDONG DE XIANG**, Capesize Bulk Carrier, 180,628 DWT, built in 2020 by Shanghai Waigaoqiao, operated by Shandong Shipping.*

Firstly, it was the return of "King" Coal following a lacklustre 2020, courtesy of Covid-induced lockdowns. As the global economy resumed some semblance of normality, coal demand worldwide rebounded in 2021. While participants had initially expressed scepticism and fears over China's ban on Australian coal, the reality was that the coal freight market did not skip a beat. In fact, China's appetite for seaborne coal surged by 16%, on the back of heightened industrial activity and tight domestic supplies. With Chinese utilities cut off from Australia' supplies, they had to rely mainly on coal from Indonesia and Russia (both are shorter hauls), which benefitted Supramaxes. In addition, Australian grain exports doubled in 2021, which further fuelled Pacific demand for these smaller sized vessels.

Secondly, another godsend came in the form of sky-high container rates, induced by supply chain chaos. This resulted in the unintended diversion of box volumes onto breakbulk vessels and geared bulkers. Furthermore, with breakbulk tonnage busy scooping up container-related cargoes, Supramaxes and Handysizes faced less competition from them in the minor bulk routes. **AXSMarine** data suggests that seaborne exports across all sizes from the Far East (China / Japan / South Korea) increased from 203 mln mt in 2020 to 251 mln mt (+23.6%). Supramax and Handysize accounting for 55.6% of those backhaul shipments in 2021 benefitted the most from this development. This massive increment in backhaul volumes was mainly driven as China's total exports soared from 108 mln mt to hit 156 mln mt. This figure was a 5-year high since the 262 mln mt posted in 2016. Interestingly, this phenomenon disproportionately benefitted the smaller-sized ships while lifting the fleet utilization rate. Hence, for geared bulkers to continue to shine in 2022, container rates will have to maintain their current momentum. As of writing, according to **Alphaliner**, container liner rates are anticipated to remain strong until at least 2H22 as the chronic shortage of containers ships persists. With China still pursuing a" Zero-Covid" strategy, further disruptions to port operations seem more likely than not.

Turning to our attention to the supply-side, drybulk shipowners across all sizes, displayed extraordinary restraint in keeping the orderbook relatively lean. Specifically concerning the 25,000 – 68,000 dwt range, 577 units were delivered over 2019-21. In contrast, there are 308 deliveries slated for 2022-24, a drop of 34% compared with the earlier period. This tight leash on fleet growth, coupled with potential upside from container spillover, will likely mean that owners of Supramaxes and Handysizes can enjoy another fruitful year ahead. That said, in recent times, drybulk trade flows have been increasingly dictated by the whims of policy makers. A prime example is the hasty ban of coal exports by Indonesian authorities (without seeking prior consultation with the private sector) at the beginning of 2022, implemented to ensure adequate supplies to state utilities. This episode serves to remind us while we can forecast short and medium-term trends with a reasonable amount of confidence, we could never take for granted how long the trajectory could last.

Another godsend came in the form of sky-high container rates which resulted in the unintended diversion of box volumes onto breakbulk vessels and geared bulkers

Picture: ***FORTE DOS REIS MAGOS****, Babycape Bulk Carrier, 121,659 DWT, built in 2022 by Shanhaiguan, operated by Elcano.*

THE FFA MARKET

2021 Summary

Traditionally, FFA mainly interested the likes of shipping principals, commodity traders and the banking industry. In contrast, financial funds played a smaller role as some preferred to trade via banks. This all changed in 2021, with the European Energy Exchange (EEX) estimating that funds comprised around 30% of the total liquidity as they swarm towards the drybulk derivatives market to get a slice of the sector's heightened rates and volatility.

In addition, the elevated interest of funds, including generalists (systematic funds using quantitative models) have been attracted by the increased availability of granular data that were previously inaccessible unless one was a freight specialist. Prospective funds can now have a fair overview of the overall picture which permits them to identify technical trends and different correlations with commodities.

As a side note, the HS7TC FFA made a timely return in 2021, as the spot market for geared bulkers performed extremely well and sometimes outclassed its larger-sized peers on the back of container-supply chaos, the reopening of the global economy and restocking. Nonetheless, it was apparent that the S10TC contract remains the favored hedging instrument of choice for small-sized vessels.

The derivatives market in 2021 experienced a bonanza, as evidenced by a year-on-year 61% increase in total transacted volumes. On a segment-by-segment basis, activity on Capesize, Panamax and Supramax FFAs rose by 46%, 62% and 93%, respectively. The Supramax's transacted FFA volumes had the most visible y-o-y % gains, in tandem to the disproportionate growth experienced by S10TC index. Total options volumes also jumped by a decent 25%, headlined by the volume of Panamax and Supramax options soaring by 71% and 147%, respectively.

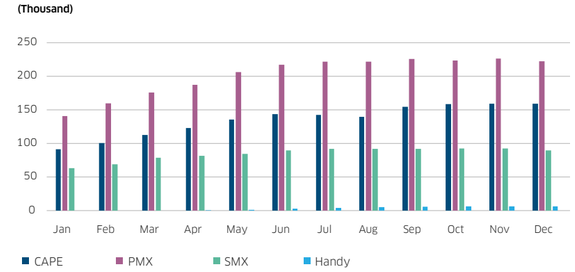
The unpredictable nature of shipping in 2021 had ushered in new batch of FFA players who realised the need to utilize derivatives to ensure a robust risk-management strategy. At the end of December 2020, Capesize FFA open interest stood at 90,000 lots. Fast forward to end-December 2021, and that figure had ballooned to 159,000 lots, equating to a rise of 76%. The same trend applied to Panamaxes (136,000 vs 222,000 lots), Supramaxes (65,000 vs 89,000 lots) and Handysizes (zero to 6,500 lots). The fact that the total FFA open interest in 4Q21 remained steady despite C5TC plunging by over $50,000 from early October suggests that the community is at least in the game for the foreseeable future and will continue to exert its influence (be intended or not) on the spot market in 2022.

FFA rates across all indices broke out from 1Q21 onwards, with month+1 FFA rates being able to maintain $30,000/day floor for Q2 and Q3. Despite the correction at the beginning of beg 4Q21, rates were still able to hang on to the $20,000 level, signaling market faith in 2022. The impact of FFA movements on spot freight rates cannot be understated, with most market participants in the Pacific waiting until London opens to obtain some guidance from FFA movements before giving prospective fixture ideas.

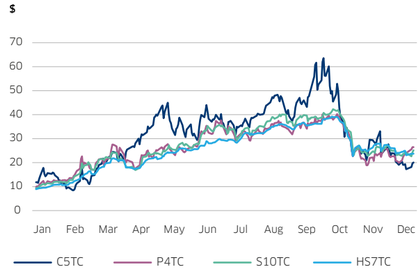
2022 outlook

Drybulk derivatives have started 2022 in a bullish tone but the usual Q1 seasonal weakness means it is inevitable that the market will have to restart the year from lower levels. The C5TC index is now back to a new low of sub $10,000/day in January while Panamaxes and Supramaxes also encountered some pressure partially from the unexpected Indonesian ban on coal exports and the Winter Olympics in China. The events that triggered last year's spike on the drybulk market were the high congestion counts in China, ships laden with Australian coal stuck at discharge ports, and a very cold winter which all combined to affect vessels' discharge speed. The situation is much improved this January and the wet weather in Brazil affecting iron ore output means the Capesizes will have to wait a bit longer before Brazil can resume its activity. From the paper perspective, forward curves are still pricing in contango indicating a recovery will eventually arrive. Despite the BCI now dropping to $6,000 levels, the Q3 and Q4 FFA contracts are still priced at $26,000, thereby illustrating the market confidence towards Capesizes. Unsurprisingly, Q3 and Q4 Panamax and Supramax contracts were also priced above $20,000 further demonstrating the enhanced expectations for this year's market. Ultimately it is the supply and demand that led to the pricing on FFA but one thing we have learnt in 2021 is that very often it is the movements on the derivatives market that influence the direction of the physical market. The dry bulk derivative outlook for 2022 remains strong and we are likely to see increase volatility and trading volume. The projection is for Capesizes to revisit $30,000, and for both Panamaxes and Supramaxes to test the high $20,000 level.

FFA open interest 2021



FFA + 1Month 2021



THE SECOND HAND MARKET

2021 saw the long-awaited recovery of the drybulk markets, presenting charter rates and S&P prices not seen in some 12 years. As the world's economies rebounded from the pandemic, the resulting surge in demand combined with constricted supply due to the inherent inefficiencies in global trade. Add to this modest orderbook/active fleet ratio of 7.5% entering 2021, the consequence was a boom in freight rates across all drybulk sectors. This newfound profitability brought a flood of cash that would prove to be tinder to the S&P markets.

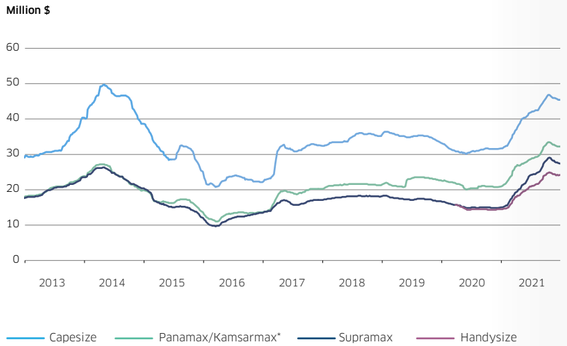
The beginning of the year was off to a modest, but positive, start as participants reserved some scepticism that the positive sentiment seen in late 2020 would support improving rates over the longer term. By the end of the first quarter confidence had grown and buyers were now pushing into the marketplace instigating a surge in sales. This demand and its associated competition supported increasing prices and ensured that this healthy liquidity would remain for the balance of year. By the end of 2021, almost 1,000 drybulk sales were reported. More than half of these were recorded in the Handysize and Supramax segments.

Momentum persisted across the second and third quarters with rising rates and abundant activity. It was not until the final quarter that the upwards trajectory was somewhat dampened as softening prices and more volatile freight markets gave the argument to buyers not to try and beat 'last done'. However, for most parts of the market, the levels were maintained and the run up to the end of year holiday period remained unusually busy.

Commonly the Capesize markets can claim all the big numbers. However, in 2021 it was the Handysize segment which took the crown of the biggest year-on-year gain. Prices achieved for 10-year-old vessels managed to gain 100% from January to December. Close second were prices for Ultramaxes and Supramaxes, prices of which, gained some 90% across the year. In contrast, by the end of the year, Capesize and Kamsarmax prices stood about 70% higher than one year earlier.

For 2022, a recovery-fuelled demand increase and low fleet growth (2.8%) gives support to those who expect another good year, and we already observe that positive sentiment prevails. As the profit margins remain strong, perhaps the industry can focus its sights on the larger picture of how to de-carbonize itself.

Dry bulk carrier S&P prices 5 year old ships



*The Baltic benchmark was changed in June 2019 from a 74k deadweight tonne(dwt) Panamax to 82k dwt Kamsarmax.

*Picture: **BUNUN BENEFIT**, Handysize Bulk Carrier, 37,372 DWT, built in 2019 by Saiki, operated by Wisdom.*

Capesize values end-2020 (175,000 - 182,000 dwt)

10 year old: A special survey passed and BWTS retrofitted Capesize, built in Korea or Japan, was worth about $33 million at end of the year, i.e. 65 - 74% more than end of 2020 where values ranged between $19 - 20 million.

5 year old: Eco-type (180,000 dwt) Capesize values stood at $46 - 47 million by end-2021, a rise of 30.5 – 31.5% from 2020 values of $35 - 36 million.

Newbuilding re-sale: The value of a Capesize re-sale built in Japan posted an increase of 18 - 20%, ending 2021 around $59 - 60 million.

Panamax-Kamsarmax values end-2020 (76,000-82,000 dwt)

10 year old: At the end of 2021, Panamax (76,000 dwt) and Kamsarmax (82,000 dwt) values gained a lot of ground compared with 2020 with prices finishing 2021 in the region of $22 million (+69%) and $24 (+66%), respectively.

5 year old: Kamsarmax (eco-type) values closed out the year at about $22 million which indicates a reduction of 4.3% versus end 2019 values of $23 million.

Newbuilding re-sale: For prompt (3-6 month) delivery ex-Japanese yards, Kamsarmax re-sales based on an NSF contract and 20/80% payment terms were priced at around $40 - 41 million as opposed to $29.5 - 30 million 12 months earlier (+36%). Similarly, Chinese-built Kamsarmax re-sale values appreciated from $26 million in 2020 to $36 - 37 million in 2021 (+40%).

Supramax-Ultramax values end-2020 (56-58,000/60-64,000 dwt)

10 year old: The price for this type andage of asset (56,000 dwt) experienced exponential growth in 2021, rising by 90% over 12 months and ending the year in the region of $20 - 21 million.

5 year old: Japanese eco-type Ultramax (60,000 - 63,000 dwt) values ended the year at around $ 29 – 29.5 million, thereby posting an average increase of 65% from the previous year.

Newbuilding re-sale: By the end of 2021, Chinese-built Ultramaxes were priced at about $33 million, whereas Ultramaxes built in Japan were priced at about $36 - 36.5 million, a very decent year-on-year appreciation of 37.5% and 33%, respectively.

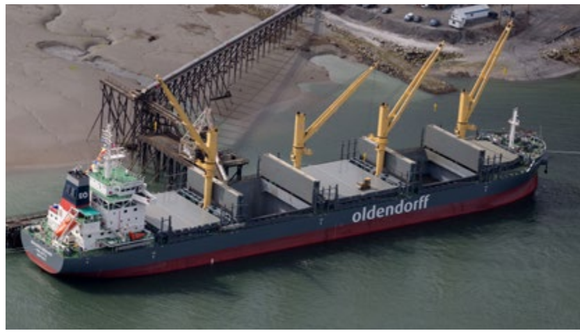
Handysize values end-2020 (32,000-43,000 dwt)

10 year old: A Japanese-built Handysize (32,000 – 33,000 dwt) was worth about $16.5 - 17 million at end 2021 which represents a substantial escalation of close to 100% in the values of this asset class when compared with end-2020 values of $8.5 million.

5 year old: The larger eco-type units of 37,000 dwt ended the year with values in the region of $24.5 -25.5 million, an improvement of 63% - 70% in 12-months.

Newbuilding re-sale: At the end of 2021, the values of 38,000 dwt Japanese-built units were in the region of $30.5 - 31 million, 45 - 47% higher than 2020.

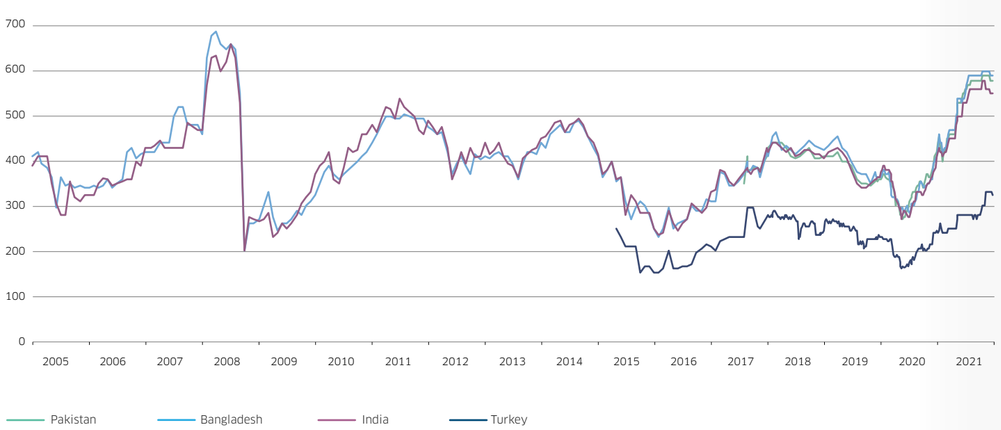
The Handysize segment took the crown of the biggest year-on-year gain. Prices achieved for 10-year-old vessels managed to gain 100% from January to December.



Estimated Values are for Japanese, Korean and top tier Chinese yards – for units built at lower quality Chinese yards, a discount of at least 10-15% should be expected.

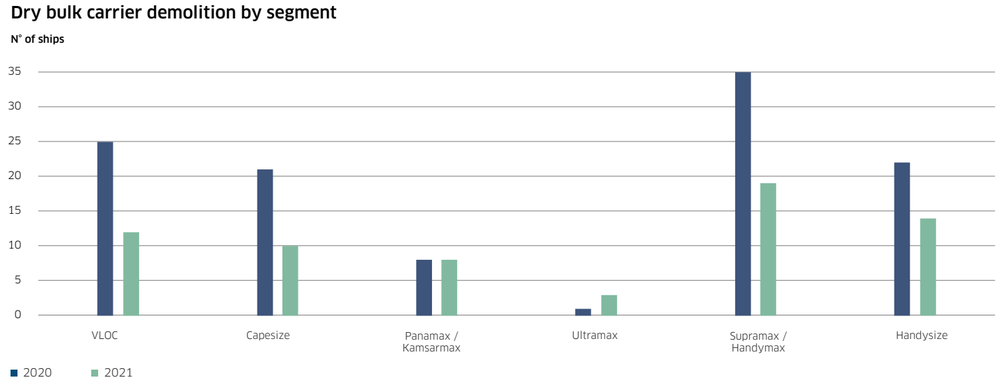
*Pictures: **IZMIR**, Ultramax Bulk Carrier, 63,200 DWT, built in 2013 by Yangzhou Dayang, operated by Ciner Shipping;*
***EDWARD OLDENDORFF**, Handysize Bulk Carrier, 38,506 DWT, built in 2015 by CMHI Jinling, operated by Oldendorff Carriers.*

Dry bulk carrier demolition prices



*Picture: **GENERAL GUISAN**, Ultramax Bulk Carrier, 63,474 DWT, built in 2020 by Tsuneishi Cebu, operated by Suisse-Atlantique.*

Dry bulk carrier demolition by segment



THE RECYCLING MARKET

A combination of general post-Covid economic resurgence, government infrastructure projects and ongoing supply chain disruption led to a major hike in steel prices in 2021. By July the price for hot rolled steel had reached $1,825/mt, up 200% on March 2020. Sub-continent ship scrap prices rose steadily but less steeply, increasing by about $150-200/ldt by July compared with the end of 2020 to reach $550-600/ldt, an increase of 50%. They have remained there ever since.

While this 50% price increase was significant, it did not mirror the meteoric rise of the Baltic Dry Index over the same period and consequently failed to tempt owners to scrap their older bulkers which morphed from demolition candidates into lucrative cash cows earning rates that no-one previously thought possible.

Last year, 66 bulkers versus 112 in2020 were scrapped totaling 7,185,099 dwt versus 13,285,709 dwt in 2020 – a 46% decline in deadweight terms.

Half of the total deadweight erased from the dry bulk fleet in 2021 was in the form of VLOCs (265,000–365,000 dwt) while Capesizes (150,000–172,000 dwt) accounted for another 20% of the total deadweight scrapped. The remaining 30% of deadweight scrapped took the form of 1 Kamsarmax, 8 Panamaxes, 3 Ultramaxes, 19 Handymaxes and 14 Handysizes. The percentage breakdown by type of bulker bears a strong resemblance to 2020, where 50% of the bulkers scrapped were VLOCs and 17% were Capes. No Supramaxes were scrapped in 2021 (versus two in 2020), their earning potential too strong to even contemplate sending them to the beach.

Cash buyers and recycling yards found themselves in a position 'on paper' to offer prices not seen before – except that the bulkers to offer on were few and far between.

The lion's share of VLOC and Capesize tonnage went to Bangladesh, with India claiming 2 Capes and one VLOC and Pakistan one VLOC out of a total of 21 Capes or VLOCs. From a total of 66 bulkers, 38 went to Bangladesh, 11 to Pakistan and only 9 to India. This shows that among dry bulk owners and/or cash buyers, recycling as per Hong Kong Convention Standards remained some way down the priority list. Or perhaps HKC aspirations were simply trumped in 2021 by the need to demonstrate strong returns on demolition tonnage in the heady further trading markets of the year.

Cash buyers and recycling yards found themselves in a position 'on paper' to offer prices not seen before – except that the bulkers to offer on were few and far between

*Picture: **JULIA N**, VLOC, 297,077 DWT, built in 2012 by Universal Ariake, operated by NEU Seeschiffahrt.*

Tanker

A year to forget

Tanker market participants will be happy to forget 2021 and move on. This was one of the weakest years in terms of tanker spot earnings in living memory. The downward momentum which characterised spot hire rates in 2H20 continued into 2021 so that the returns for certain tankers stayed below operating expenditure levels for much of the year. These 18 months of weak earnings were unusually long. As at end-2020, seasonality was mostly absent last year. There were sporadic pockets of short, localized, higher rates which supported earnings but, as fleet fundamentals remained loose, these were few and far between.

MAERSK TRENTON (AND TRIESTE)
Both sister ships are oil products tankers, 49 709 dwt, built by Sungdong shipyard in 2017, operated by Maersk Tankers.

It became evident that 2021 would be a year of persistent pain for tanker owners

MARKET OVERVIEW

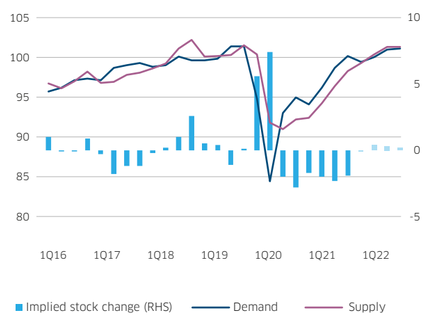
On the tanker demand side, the main driver came from global oil demand rebounding from the ravages of Covid which helped to draw down bloated inventories. In turn, this led to a rise in global refining activity and motivated the OPEC+ Alliance to ease their supply cuts which they had enacted in 2020. All told, this led to a rise in both crude and products transported by tanker. However, this was unable to offset the negative impacts of a steadily expanding tanker fleet as deliveries remained strong, and although tanker scrapping rebounded from 2020's lows, it was insufficient to have a positive impact.

Early 2021 was marked by hopes that vaccines would lead to a better second half of the year, unfortunately as Covid persisted and as scrapping never really took off, expectations were downgraded by summer, and it became evident that 2021 would be a year of persistent pain for tanker owners. OPEC+ continued to dictate the volumes of crude on the water as crude exports from the US, which, before Covid, had been the market's largest source of incremental ton – mile demand, struggled. This came as, rather than hiking production, in line with steadily strengthening prices, US producers remained extraordinarily disciplined and prioritized returning cash to shareholders and strengthening their balance sheets. By the end of the year, demand growth was again accelerating as surging natural gas prices saw some power generation capacity switch to burn cheaper oil.

At the turn of the year, global oil market fundamentals remain tight on the back of this strong demand and as OPEC+ is regularly undershooting their monthly production targets. Furthermore, simmering geopolitical tensions have helped to fuel a sustained price rally which has propelled ICE Brent to over $90/bbl, its highest in over seven years. These prices have dragged marine fuel prices higher with VLSFO prices now sitting at record levels in several hubs. All told, this is helping to pressure tanker earnings lower.

Global oil supply and demand balance

Million barrels/day



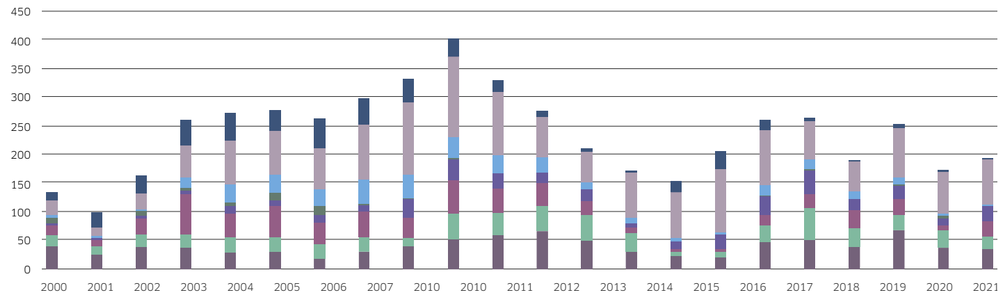
Picture: ***NISSOS KYTHNOS****, crude oil tanker, 318 744 dwt, built by Hyundai Ulsan shipyard in 2019, operated by Kyklades Maritime.*

Perspectives have worsened for 2022. Indeed, with Omicron global oil demand is not expected to recover as was rapidly as initially expected, while a significant volume of new tonnage will be delivered. Nonetheless, there remains optimism for 2023 and beyond due to the lack of newbuildings amid shipyards being full of orders for vessels other than tankers, while global oil demand should have exceeded its pre-pandemic level by then. Indeed, the low orderbook for 2023 and 2024 is now virtually set in stone as it is almost impossible to order a ship in 2022 for pre-2025 delivery, and even 2025 shipyard slots remain scarce.

We anticipate that tanker supply will be limited further by sustained interest in scrapping. New environmental regulations, principally the IMO's Energy Efficiency Existing Ship Index (EEXI) & and the European Union's Emission Trading Scheme (EU ETS) should encourage the scrapping of the least efficient tankers. This has created a strange market where participants are resigned to persistent low rates across 2022 while anticipating much stronger spot rates thereafter. 2022 will also see the delivery of a significant number of dual fuel LNG tankers. It will be interesting to see if LNG will really be used by such vessels considering the elevated price of LNG at the time of writing ($2,100/mt in Rotterdam vs VLSFO at $529/mt) and whether additional dual fuel LNG tankers will be ordered during the year. The new regulations will likely encourage charterers to focus more on eco-tonnage, which is likely see higher premiums placed on such tonnage in the time charter market. These bullish expectations means that there is a light amid the current darkness.

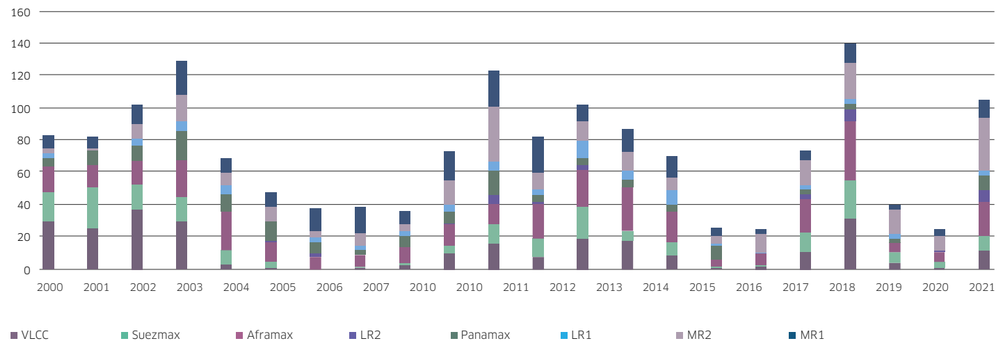
Annual Tanker deliveries

N° of ships



Annual Tanker demolitions*

N° of ships



* includes only those vessels reaching breakers' yards.

CRUDE TANKERS

VLCC

2021 will go down in history as one of the most difficult years for global VLCC markets as the world continues to struggle with the aftershock left behind by the destructive power of Covid. As the world attempted to best manage virus spikes through vaccine rollouts and policy implementation aimed at reducing contact, the oil market spent most of its time trying to return to an even keel following the chaos of the previous year. Although global oil demand may have rebounded somewhat versus 2020, the belief that 2021 would bring back pre-pandemic consumption has come and gone.

It comes to no surprise that overall earnings have been largely affected by market conditions. VLCC earnings on TD3C (Ras Tanura-Ningbo, basis non-eco, non-scrubber) averaged -$518/day during the year, a stark difference to 2020 where earnings averaged $48,300/day. Quarterly performance shows no true spike across the year as earnings in 1H21 and 2H21 averaged $318/day and -$645/day, respectively. Vessel utilization rates steadily decreased throughout the year as fundamentals left tanker owners opting to idle vessels rather than fix at the awful market levels they were faced with at that moment in time. Such poor earnings paved the way for a potential resurgence in scrapping. However, supply side fundamentals were left largely unchanged for the most part of 2021 as a mere 15 units were scrapped across the year (excluding FSOs), despite extraordinarily high scrap prices.

VLCC demand did not rebound to hit its pre-pandemic level last year although the OPEC+ Alliance started to unwind their record 9.7 mb/d supply cut which was originally enacted in mid-2020 to stabilize then-collapsing world oil prices. This came as oil demand started to rebound, the world gained further insight into Covid and the vaccine rollout gathered pace. Accordingly, the producer group decided to ease this cut by 400 kb/d each month. Nonetheless, the effect of this unwinding was not sufficient to dramatically change market structure, and despite seeing additional cargoes month-on-month, the optimism the market had for 4Q21 soon started to dwindle.

For the majority of 2021, bearish headlines were commonplace making the all-important sentiment weaken. Between USGC exports remaining weak and in turn decreasing ton-miles to China, and Beijing deciding to release some SPR crude at local auction, the complications were seemingly endless. A very uncertain future lays ahead for the VLCC market with varying predictions of when rates will return to stronger levels. The continuous emergence of new Covid variants keeps throwing curve balls at policy makers and overall global consumption patterns which trickledown to the tanker market. With all these uncertain aspects, the VLCC market remains vulnerable to continued poor returns, but a time will come where stability will return. The only question remains when.

Suezmax

When 2021 started, and despite a deceiving 4Q20, most actors believed in a relatively quick economic recovery by the start of the summer. Continuous Covid-related travel and other restrictions due to raging variants have kept the damper on demand both East and West for the entire year. For Suezmax players, 2021 has been one of the worst periods since early 2018 with 15 months of continuous trading below OPEX, as earnings averaged $3,500/day (basis TD20 West Africa to Europe, non-scrubber, non-eco)!

The demand side for Suezmaxes in 2021 has been a repeat of 2020 with less demand from the Middle East Gulf and more from West Africa/Brazil or US Gulf/Caribbean reshuffling ships' trading patterns. The Middle East has basically become a VLCC-driven market into China while West Africa is mainly providing oil into Europe on Suezmaxes. This being said, there was some help with increased ton-miles with long west to the east shipments from USGC, Libya or CPC (Novorossiysk in the Black Sea) to name a few. The negative aspect of this trade is that ships opening in the Far East have not much choice other than to ballast back to the Atlantic. With bunker prices that strengthened by 40-50% during 2021, earnings could not but suffer. Non-scrubber fitted ships burning VLSFO were particularly hard hit by the extra bunker costs with their earnings clipped accordingly. In a market where every penny becomes marginal, a $5,000-6,000/day less in TCE compared with a scrubber-fitted ship, makes a huge difference. The result of trading below OPEX is giving some owners no incentive to move oil at a loss with waiting / laying idle being the cheaper option.

On the supply side, the Suezmax segment grew by a net-14 units as 23 newbuildings hit the water while 9 units were scrapped. By the end of the year, the fleet stood at 549 ships. The average age is increasing and now stands at 11.3 years. Furthermore, 28% of the fleet is over 15 years and 24 units (4.5% of the fleet) will enter this bracket during 2022. Owners with modern and well approved ships are actually predicting better returns in 2022 as the number of "workable" ships for oil companies with higher vetting levels will decrease, but this seems to be a bit too easy as 36 newbuildings are expected to enter the fleet this year. This will accelerate fleet growth to 6.5% unless we see more scrapping. However, as things stand, we do not expect the scrapping this year to be more than 22 units.

Prospects for 2022 remain dim with at best a revival of demand starting in the 3rd quarter while increasing oil supply will depend on the attitude of OPEC+. Indeed, even if OPEC+ ups its output hikes, as some commentators have suggested, the direct winners will be the VLCC's who continue to be the main competitor to the Suezmaxes.

Aframax

2021 was a year to forget for most tanker owners and it was no different for the Aframax segment. It was one of the toughest years in decades mainly due to the prolonged pandemic. Tankers voyaging on TD7 and TD17 had their worst earnings over the last 12 years with time charter equivalent earnings on TD7 averaging $171/day according to the Baltic Exchange.

In comparison to 2020 it has been a rather un-eventful year. Despite a mild increase in Urals exports out of the Baltic (+7% year-on-year) we were still about 20% down compared with pre-pandemic levels. Fuel exports from the Baltic to the US diminished substantially as well, mainly discharging in Northwest Europe, thereby decreasing ton miles.

We even reached a point where charterers started to time charterer out vessels they had on longer time charter to minimize their losses. Meanwhile, many large trading houses diminished their shipping exposure since the opportunities to make money remained very scarce.

The ageing fleet is still increasing with an additional 35 Aframaxes and 13 LR2s turning 15 years old in 2022. By the end of 2022, 36% of the Aframax / LR2 fleet is projected to be over 15 years old. With 23 deliveries expected there is still a glimmer of hope, but owners will need to be patient as the global economy slowly recovers.

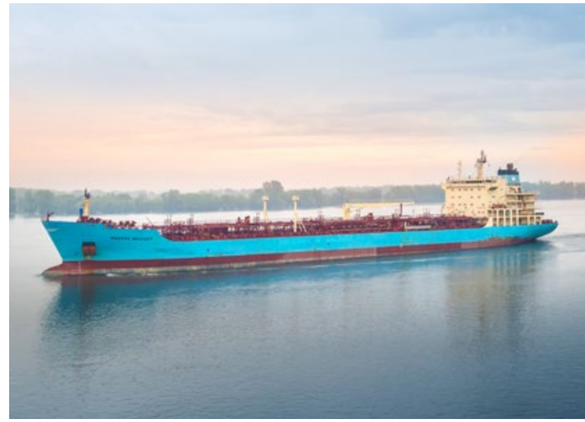
Interestingly, it's the first time in 10 years that TD19 has outperformed TD17, with Aframax owners in the Mediterranean enjoying an average TCE of $6,453/day in 2021 – a figure notably higher than its Baltic counterparty which recorded daily earnings around of $5,416/day.

There is a light amid the current darkness

Once more Libya that was the driving force behind a comparatively stronger Mediterranean market, with many owners relying upon the Maghreb energy heavyweight to provide the bulk of their income last year. Indeed, daily crude output oscillated around 1-1.2 mb/d throughout the year, barring the occasional, but reoccurring, regional uncertainties which we have grown so accustomed to.

Meanwhile, CPC exports remained relatively consistent, with an average of almost 34 stems being lifted out of the Black Sea on a monthly basis – a figure owners hope will be surpassed this year providing that Kazakhstan and Russia can both keep pace with their supply commitments under the OPEC+ deal.

However, all things considered, 2021 was and will remain, a more than uninspiring and uneventful year and charterers, owners and shipbrokers alike will be happy to leave the past twelve months behind, instead turning their attention to what the future in a Covid-ridden world holds.



*Picture: **NISSOS RHENIA**, crude oil tanker, 318 744 dwt, built by Hyundai Ulsan shipyard in 2019, operated by Kyklades Maritime.*

*Picture: **MAERSK BELFAST**, oil products tanker, 29 032 dwt, built by Guangzhou Sy shipyard in 2005, operated by Maersk Tankers.*

PRODUCT TANKERS – EAST

LR2

For the LR2 segment, 2021 started much like how 2020 had ended.

Poor refinery volumes due to depressed demand and high crude prices meant returns for much of Q1 and Q2 were below $5,000/day for TC1 and western runs from the Middle East Gulf for eco-vessels. Meanwhile, eco-tonnage equipped with scrubbers managed to perform at around the $10,000/day level.

In addition, the regular deliveries of newbuilding VLCC and Suezmax tonnage opting for CPP trade instead of DPP, took a lot of the volume out of the market. Indeed, one VLCC full of ULSD takes out three LR2 voyages from the market. Ironically some LR2s were being used to supply VLCCs with short runs from the Middle East Gulf to Fujairah or Male, the preferred STS locations for such reverse lightering.

The second half of the year saw an improvement in cargo volumes and general optimism that the negative impact of Covid on demand was lessening. With the DPP market in the west recovering somewhat, some Suezmaxes and VLCCs entered their intended DPP trade. Some LR2s also chose to dirty up over the summer as the premium for trading dirty was sufficient to more than pay for the cleanup of the vessel.

This effectively tightened the supply of tonnage and earnings across Q3 and Q4 rose to $17,000/day - $22,500/day for eco-vessels and mid to high $20,000s/day for eco-scrubbered vessels.

It is hard to be optimistic about 2022 with 46 VLCC newbuildings set to be delivered into a fairly poor DPP market. Therefore, it is expected that they will cannibalize the CPP segment and particularly LR2s. With crude prices touching eight-year highs, the scrubber premium on earnings should be maintained.

Oversupply of tonnage and weak demand proved to be the routine issues, certainly in the first half of the year, and continually threatened to destabilize the market

LR1

The LR1 segment saw stable earnings in 2021 as it benefitted from a resilient MR market. This came in spite of a rapidly increasing fleet age profile with the majority of the vessels now being from 12 to 15 years old.

The trend of activity followed that of the LR2s with a slightly better Q1 when earnings fluctuated around the low $10,000s/day compared with $7,500/day - $8,000/day for Q2. LR1s were able to weather the storm of 1H21 by taking MR short haul cargoes and optimizing earnings with demurrage. The segment was not as badly impacted by newbuilding VLCCs and Suezmaxes as the stem sizes cannibalized were more tailored to LR2s.

Some owners also dirtied up in Q3, mainly for one voyage as the premium to do so paid for the cleanup, much like the LR2s. However, Q3 saw earnings hover in the region of $10,000/day while Q3 saw earnings in the mid $10,000s/day.

The segment will likely continue to be less disturbed by the arrival of newbuild DPP tonnage. Furthermore, the LR1 order book is very slim (3 units), hence the older units should be able to keep operating with a limited supply of new tonnage.

MR

As with the larger segments, the in MRs East of Suez markets had a tough 2021. Early optimism for a 2H21 recovery was soon shot down as Q1 proved to be disappointing across the board as the markets struggled to recover from the end-2020 resurgence of Covid and the emergence of the Delta variant. Despite the slump in demand, we still saw evidence of the usual seasonal spike at the end of Q1, although this was considerably more muted than in previous years. TCE earnings climbed to a peak in March, to average $10,300/day across the month for a TC17 run.

As was to be the theme throughout the year, any improvements proved to be short lived. Oversupply of tonnage and weak demand proved to be the routine issues, certainly in the first half of the year, and continually threatened to destabilize the market. As such, Q2 was a return to the by-now-familiar doldrums and soft sentiment enabled charterers to drive rates down further as resolve amongst the owners weakened. Q2 also brought an end to the regular LCO trades into China, driving more vessels to the Middle East in search of employment. This culminated in a dismal performance in July, with TCEs dropping to $3,700/day for TC17. Global tonnage supply was also skewed towards the East, with approximately 56% of the global MR fleet trading East of Suez by June.

It seemed as though any recovery was a long way off, particularly as short-haul cargoes were covered on LR1s and other cargoes were regularly stemmed up to the LR2s, hampering any efforts by owners to drive the market upwards. However, the tables started to turn in August, as the world seemed to be on the path to recovery, and longer haul cargoes, in particular to South America increased ton-mile demand and accordingly tightened the position list. In addition, civil unrest on the regular South Africa route resulted in some long delays and the position list quickly tightened up. Furthermore, increased enquiry to Australia from West Coast India as a result of refinery closures and run-rate cuts gave the market some legs, and more importantly ensured a slower resupply of tonnage to the Middle East region. All told, this gave the market renewed hope for the end of the year and in September TCEs for TC17 crept up to a year-high of $11,700/day.

As we've become so accustomed to now, disaster was around the corner and October saw the beginning of a new wave - Omicron - and once again many countries started to consider travel restrictions. Negative sentiment crept in, and we saw Q4 begin on a softer note than we were used to seeing. Nevertheless, the MRs remained resilient in the face of this, and owners held their ground after being reinvigorated by the state of the market at the end of Q3. The end of the year saw a crunch in bunker prices, and costs which had been steadily climbing throughout the year took a sudden hike. This wasn't necessarily negative for the market, as the steady flow of ballast positions from Singapore started to dry up and ensured that the position list didn't grow exponentially as we had seen earlier in the year. Freight climbed alongside and an injection of cargo to supply the newly-onstream naphtha crackers in the Far East in the second-half December gave owners the boost they needed.

Despite some end-year positivity for the MR's, 2022 looks to be a similar picture to 2021 – certainly for the first half. The global tonnage balance has been restored as we start the year, but in order to see a sustained recovery, we will need to see a resurgence in crude production, which would no doubt need to be driven by the post-pandemic global economic recovery. However, there are some smaller more quantifiable elements that MR owners can hopefully look forward to, in particular the commissioning of new refineries across the Middle East and Southeast Asia, which should help to employ more vessels and reduce the strain on oversupplied position lists.

PRODUCT TANKERS – WEST

LRs

While 2021 offered little to smile about for tanker markets in general, the LRs found something of a niche which has helped them achieve better earnings than most sectors throughout the year. Naturally, reduced demand due to Covid has seen water-borne volumes decrease, but it also altered the fundamental trade-flow of tonnage which left Western supply shorter due to reduced ULSD and jet fuel coming from the East. Meanwhile, naphtha volumes going from west to east were the typical contract volumes. This has seen LR2 supply stretched at times and helped maintain a relatively healthy freight level for most of the year which has often been boosted by healthy Middle Eastern markets which saw export volumes largely unaffected – more re-directed. Although floating storage has not been a significant feature of the clean markets in 2021 as markets have adapted to the new, reduced demand, we have seen an increased numbers of newbuild VLCCs and Suezmaxes coming to West Africa on their maiden voyage with CPP ex Far East and lightering from there – largely into Latin America. This has not only created something of a new market, but also the slow loading and discharging of these STS runs has created some artificial tonne-miles.

The LR1s, as so often the case, have not been as fortunate. Just like 2020 (and most years before that), the LR1s in the West tend to be more reactive to the MR markets than the LR2 – largely because West Africa is the biggest market for them, and LR2 west to east trade is mostly contract supply, meaning no flexibility on size. As such, the weaker MR markets in 2021 have kept the LR1s restrained, even when supply would suggest a strong bull-market. The one real upside the LR1s have seen over the last 12 months is the Americas. They are the favoured size for STS with the newbuild VLCCs and Suezmaxes in West Africa, and due to constraints on vessel size for delivery into Brazil, this has seen strong demand for them in the US Gulf and East Coast Latin America. Additionally, they have benefited from several windows where the naphtha arb from the US Gulf to the Far East has been preferable to supplying from the Mediterranean.

What can we expect from 2022? Off to a bad start so far in January, with both the LR1s and LR2s losing ground over the holiday season and unable to gain any back so far this year. Approaching the depths of winter, this is not where we would expect the tanker market to be and it paints a bleak picture for the next 6 months. However, as we saw last year, once the impact of Covid fades, there is appetite to restore life to normal. However, there appears either an inability or a reluctance from global suppliers to prepare for it or even match it as it comes – so we can probably expect volatility and unpredictability which could/should work in owners' favour.

MRs

After a very uncertain 2020 with the impact of Covid, we all thought that 2021 would be much different but in fact the uncertainty remained throughout last year as well. The year naturally started off relatively strong with the ice season meaning owners that were able to, could make the most of the premiums but once this finished at the end of Q1, there was really not much to talk about at all throughout the summer months. Normally this is a quiet time of year for the European markets but last summer in particular with the ongoing Covid uncertainty was less busy than normal with earnings getting down below the $2,000/day mark for TC2. The latter part of the year in Europe is normally fairly active especially in Q4 but unfortunately that was not to be until the final two weeks of year where we saw the market starting to develop into something worth looking at again but still for owners the earnings weren't much over the $10,000/day mark so all in all a year to forget really I'm afraid. Bring on 2022!

Edible Oils

Vegoil

Vegoil exports from Argentina increased again in 2021, with approximately 7.8 million tons shipped, 6.5% more than in 2020. Some 226 MR1s and MR2s were chartered, of which 151 went to India, which remains the main importer of vegoil. Biodiesel flows were irregular, with some months more active than others. A total of approximately 1.15 million tons of SME (Soya Methyl Esther) was exported, exclusively to Europe. Almost twice much as the previous year.

Freight rates did not fluctuate much in 2021 following the persistently poor clean petroleum tanker market. Rates for 28,000-30,000 mt stems going to India moved from $37/mt at its lowest in February to its highest of $47/mt in December. It is also interesting to note that river water levels in Argentina remained low during the year due to a drought in Brazil, which did not allow the vessels to optimize their capacity. These rates produced daily returns of between $8,000 /day and $11,000/day.

In 2021, sunflower oil exports from the Black Sea were again significant and reached approximately 6.5 million tons. This market employed any size of ships to various destinations from small tankers to MR2s. The MR1s discharging into India were fixed for 30,000 tons around high $30s to mid $40s/mt.

Palm Oils

The palm oil market was again active in 2021 with around 340 MR2s and MR1s fixed into the Mediterranean, Continent, West Africa and the US. Furthermore, 49 MR newbuildings, out of the 80 launched last year, fixed palm oils on their maiden voyage. Rates moved from $13,500/day at their lowest to $20,000/day at their highest.

Volumes are likely to remain steady in 2022. We still expect approximately 70 newbuildings to be delivered across the year which will provide FOSFA tonnage to the market. However, this is slightly lower than in previous years. Rates will most likely depend on the Asian clean petroleum tanker market, nevertheless, we anticipate them to remain stable. Furthermore, exports of biodiesel and used cooking oil rose significantly in 2021, which provided good alternatives and returns in excess of $20,000/day to the owners whose tankers were able to carry these products.

Fuel Oil

The ongoing pandemic that impacted the broader tanker market in 2021 did not spare the fuel oil segment on Handies/MRs and Panamaxes.

The usual spikes in rates that follows normal seasonality did not occur in 2021 and the year began under very slow steam in terms of volumes with rates plumbing the bottom and this trend persisted throughout almost the full year. Nonetheless, rates started to suddenly pick up to good levels in Q4 which gave owners a breath of fresh air.

In Q1, rates for Handies voyaging from the Baltic to UK Continent averaged WS 145 on a minimum 30,000 mt intake with the averages for Q2 and Q3 remaining broadly flat, thereby demonstrating how flat the market was for the majority of the year. On the other hand, the average for Q4 surged to WS 204.

The time charter equivalent was impacted by the rising bunker prices. This was most noticeable during Q2 when the TCE for TD18 averaged $3,000/day while the highest average ($12,250/day) was in Q4. Both levels according to Baltic Exchange values and always basis round trip.

The Panamax market also started very slowly with the Q1 average WS level reported by the Baltic Exchange sinking to WS 74 translating into a negative TCE for most of the quarter. There was a slight improvement in Q2 and Q4 where TCE averages of $4,500/day and $3,250/day, respectively, were posted.

In the south, the Black Sea remains the area from which the majority of fuel oil is exported. The most active traders continue to be Galaxi, Trafigura and Lukoil while last year saw newcomer Coral Energy enter the fray.

The average fleet age on fuel oil tankers remains high with plenty of the vessels over 15 years old which imposes difficulties for some charterers who implement the restriction of only chartering tankers with a maximum age of 15 years.

The sentiment moving into 2022 is yet to be tested. However, the majority of the operators hope that the pandemic will dissipate sooner rather than later to lead tanker market activity back to its levels in 2019 and early 2020.

*Picture: **FRONT COUGAR**, Oil products tanker, 109 896 dwt, built by Guangzhou Sy Longxue shipyard in 2016, operated by Frontline.*

FFA MARKET

A year ago, many were happy to dismiss the end of 2020 as a miserable end to a dynamic year. The tanker FFA market did see record levels of activity throughout the first two quarters of the year, however, the storage play had a shelf life and the steep oil contango flattened out in the third quarter. The typically freight rate punchy Q4 had failed to deliver, and the year ended on a whimper. At the end of 2020 many in the FFA community had higher hopes for 2021 and FFAs were pricing a rosier future. On the 30 December 2020, TD3C 4Q21 was marked optimistically at $10.358/mt ($29,216/day) and the whole Cal 21 at $8.50/mt ($19,022/day). A year on and the reality is much dimmer with the current YTD for TD3C a dismal $6.42/mt while TD3 average TCEs for 2021 were a shocking -$518/day.

Many speculative traders at the start of this year had played the paper from the long side in anticipation of an eventual breakout which never materialized. Although the Cal22 and Cal23 FFA rates remained relatively high, the FFA 2021 forward curve moved lower in 2021 especially in the front months, thereby reflecting the state of the spot market. This presented a challenge for market participants as the 2021 monthly FFAs were often priced too low for hedgers to lock in an appropriate hedge and also well above spot rates for speculators to play from the long side. This left many to alternatively look at calendar spreads, taking a view on the shape of the curve to manage risk. Traders could look at spreads two ways: Bear spreading; selling nearby contracts and buying deferred or Bull spreading; buying nearby contracts and selling deferred. The rational for spreads is that FFAs typically have more movement from market conditions in the nearby months and to position oneself accordingly with the opposite position against the deferred periods.

Once again as we conclude 2021, FFAs paint a much more attractive future with 4Q22 TCE standing at $23,760/day while the Cal23 stand at $19,430/day.

2021 TD3C spot vs 4Q21 forward price

TIME CHARTER

The time charter (TC) market activity in 2021 contrasted significantly with 2020. Indeed, the amount of reported TC fixtures (for a minimum of 6 months or longer) has declined by more than 30% compared with 2020. This was especially the case for crude tankers where the number of transactions fell by about 45% year-on-year while they fell by 14% year-on-year for clean tankers. The persistently weak spot freight environment in 2021 and uncertain outlook due to Covid contributed to this reduction in the number of TC deals compared with 2020. However, it should be noted that 2020 saw an above average number of transactions which reflected the extremely high volatility which characterized the first part of the year.

Low spot freight earnings contributed to weaker short-term TC rates. On the other hand, rates for periods longer than 12 months remained stable, as the back end of the TC curve remained supported with expectations of an eventual stronger tanker market. During the first half of 2021, rates for 12 months TC and longer already held a significant premium compared with shorter time charter rates as market participants expected a recovery in spot freight rates by 4Q21. However, this didn't materialize and due to the ongoing Covid pandemic, market participants were more concerned about 2022. Nonetheless, as the coverage into 2022 gradually increased and hence the likelihood to be exposed to a stronger market, 12 month TC rates didn't decline significantly. For such periods, only eco-VLCCs (non-scrubber) saw a slight decline from close to $30,000/day in 1Q21 to mid-twenties by end of 4Q21. Other segments saw 1 year TC rates broadly unchanged with eco, non-scrubber MR2s oscillating around $14,000 to 15,000/day throughout the year. TC rates for periods longer than 1 year saw a similar trend.

2021 ended with a more bearish view for 2022 while expectations for 2023 and 2024 remained bullish. Indeed, a significant amount of newbuildings are expected to be delivered in 2022 and tanker demand may remain below pre-pandemic levels. On the other hand, 2023 and 2024 are looking much tighter in terms of supply and demand and upcoming regulations from the IMO (EEXI, CII) and from the EU with the inclusion of shipping in the EU Emission Trading System. In 4Q21, the negative outlook for 2022 saw some charterers trying to TC out their relets for periods covering most of 2022, while continuing to take positions covering 2023 and 2024. New regulations which will negatively impact the least efficient tonnage also led charterers to take eco tonnage on TC for long periods, and with few exceptions only fixing non-eco tonnage for short periods. This increased interest for eco tonnage has led to a higher premium on eco tonnage.

While the first part of 2022 will likely continue to be affected by the uncertainties regarding Covid and the recovery in tanker demand, the second half of 2022 will likely see rising TC rates as coverage beyond 2022 increases into a period expected to be characterized by significantly lower newbuilding deliveries, an ageing fleet and tanker demand recovering to exceed its pre-pandemic level.

Tanker prices increased for every reason except oil transportation demand.

SECOND HAND MARKET

'If you don't want to feel constantly frustrated, avoid desiring things that are beyond your control' - Epíktêtos.

There is little doubt that Tanker Owners had to be adept at this self-discipline originating from "Epíktêtos", a Greek philosopher (50-125) from the Stoic school.

Last year saw the poor demand for oil transportation hit all sizes and all vintages of tankers. No tanker owner was spared from the miserable earnings experienced all year long and there was no pre-emptive action that could have safeguarded them. Many were hoping for 2021 to be the year ending the poor market which characterized the last months of 2020. However, the pandemic and multiple emerging variants put an end to any hope. Besides the few owners with mixed fleets including bulkers or container carriers, the industry had every right to feel some frustration in the face of such a helpless situation.

In previous years, tanker owners had enjoyed alternating ups and downs, whereas 2021 was particularly dull and affected by macro-economic factors which drove price inflation for tankers of all ages. Meanwhile, the chartering market did not recover from the low levels of late 2020.

The newbuilding frenzy witnessed in the drybulk and container markets pushed newbuilding prices to levels not seen over the last decade. The combination of high demand and raw material price increases including shipbuilding steel did not facilitate things. Furthermore, the overall reduction in shipbuilding capacity brought prices to their highest level in the last 12 - 14 years. Older tankers' values were supported by the high demand for scrap steel and increase in demolition prices. This all meant that tanker prices increased for every reason except oil transportation demand.

Owners were denied the fulfilment of their expectations on the employment side by a lack of cargoes and had their hopes pushed into 2022 if not later.

Demolition sales increased across all sizes, with scrap prices increasing from $420 to over $600/ldt. However, the consensus remains that this was not enough to balance the impact of new deliveries. Nevertheless, there are expectations in the year to come that the oldest non-eco vessels will be pushed towards demolition due to incoming EEXI & CII regulations.

The long-term forecast appears brighter due to the restraint in ordering exercised by owners during the course of 2021 as only 94 units were contracted against 122 in 2020. VLCCs and Suexmaxes were particularly affected with a 30% and 66% reduction in newbuilding orders, respectively. Aframaxes and LR2s were the preferred newbuilding choice of tanker owners as ordering increased from 39 to 50 units between 2020 and 2021. Looking at the current order book and overall demand, market participants expect newbuilding prices to remain firm in 2022 with very few prompt slots available.

Units sold for recycling per year*

N° of Ships	2017	2018	2019	2020	2021
VLCC	16	32	11	2	20
Suezmax	14	23	8	5	10
Aframax & LR2	31	45	5	11	32
Panamax & LR1	8	10	6	3	12

* Does not correspond to the number of tankers reaching breakers' yards

*Picture: **MAERSK CURACAO**, oil products tanker, 49 919 dwt, built by Samsung Ningbo shipyard in 2019, operated by Maersk Tankers.*

New orders 2015 to 2021

N° of Ships	2015	2016	2017	2018	2019	2020	2021
VLCC	64	15	58	44	39	44	31
Suezmax	62	20	28	22	38	39	13
Aframax & LR2	109	19	37	28	56	39	50
Panamax & LR1	33	3	8	8	1	0	0

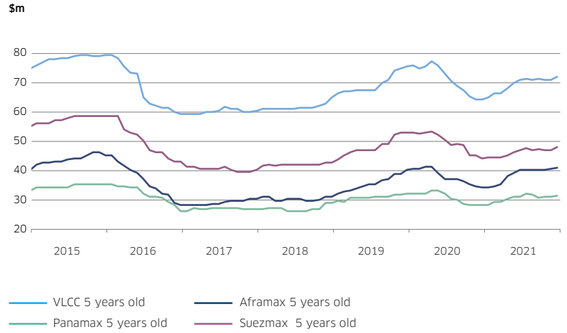
The evolution of second-hand tanker prices in 2021 was characterized, and mostly determined by, external factors and elements related to oil transportation. In general, asset values increased, while employment earnings decreased. Modern ship values were impacted by newbuilding prices while older units were impacted by higher scrap prices. Middle aged tankers were subject to various trends depending on their specifications and ability to adapt to future emission rules.

Price fluctuation was stronger for very modern units such as resales and those around 5 years old which rode the coattails of newbuilding prices. Resale values came close to their 2019 levels, while older tonnage experienced more erratic price changes explained by units' respective age profiles.

Vessel value changes from January 2021 to December 2021

	Re-sale	5 years	10 years	15 years
VLCC	12.36%	10.77%	3.45%	8.47%
Suezmax	18.58%	7.30%	1.64%	7.89%
Aframax & LR2	19.31%	18.44%	10.64%	14.81%
Panamax & LR1	24.36%	11.61%	14.71%	9.09%

Tanker second hand prices



For the fifth year in a row, the number of transactions for further trading increased by more than 15% with some 41 additional sales reported compared with 2020. The first 4 months of the year were particularly active with almost 50% of the year's transactions taking place by April and over 62% completed by the end of May. The number of transactions was also driven by numerous, large en-bloc sales.

After the summer, activity slowed down due to the growing mismatch between asset values and the underlying chartering market. Prices steadily increased for modern and resale units, while the prices for older units started to slowly weaken from their mid-year peak. This softening provided an opportunity for some players to buy a few ships in the hope of a future recovery.

S&P activity (vessels for further trading)

N° of Ships	2017	2018	2019	2020	2021
VLCC	48	48	59	105	101
Suezmax	29	28	41	44	38
Aframax & LR2	42	66	76	95	129
Panamax & LR1	12	20	33	24	41

VLCC

Last year saw 101 VLCCs reported as being sold for further trading which was very much in line with the previous years' performance.

This activity was particularly well distributed across age ranges except for 6 to 10 year old vessels which didn't catch buyers' attention compared with even younger tonnage.

Transaction volumes for ships younger than 5 years increased drastically to 31 reported sales, outperforming the 22 in 2020. A significant portion of these sales was composed of en-bloc transactions with large owners enforcing strategic decisions or starting sale and leaseback operations taking advantage of higher selling prices for refinancing requirements. To illustrate the above, Frontline's acquisition of 6 resales built at Hyundai in Korea from Central Mare Inc. serves as a good example. In respect of 6 to 10 year old vessels, only 5 transactions were noted, mostly linked to the Xihe Holdings bankruptcy. For vessels built 10 to 15 years ago there was a decent 20 transactions. Meanwhile, there were 45 transactions for units more than 15 years old. At the beginning of the year, 40 VLCCs were expected to hit the water, but in the end only 35 units were delivered. According to the orderbook at end-December 2021 which stood at 68 units, 50 ships should theoretically hit the water in 2022. Meanwhile, twenty units (including floating storage units) were scrapped last year.

Suezmax

The Suezmax market registered a slight decrease with only 38 units sold for further trading in 2021 against 44 in 2020. There was little appetite from buyers to match theoretical valuations referencing modern units and this was reflected in a shortage of candidates and sales.

Among the notable exceptions, was Euronav's purchasing of 3 Daehan Suezmax resales from Yasa Shipping for about $56-57 million each. As for vessels built between 2011 and 2015, we only saw five units changing hands and four of them were part of a single transaction. Similarly, only 5 sales took place for the 11 to 15 year old Suezmax category.

Buyers' attention focused on tonnage older than 15 years old with 22 transactions for further trading taking place during the year. The increase in recycling values gave shipowners the opportunity to offload once again some of their older tonnage for healthy values. A good example lies in NGM selling 2 Sasebo Heavy 2001 units for a reported price of $14.75 million each.

The Suezmax fleet saw 23 units delivered in 2021 (versus an end-2020 forecast for 35 vessels) while 10 units were scrapped. By end-2021, the total Suezmax orderbook stood at 58 units, of which 48 are expected to hit the water in 2022.

Aframax/LR2 and Panamax/LR1

Contrary to their larger cousins, Aframaxes and LR2s saw their S&P activity volume increase substantially with 132 transactions reported versus 95 in 2020. All vintages benefited from this trend, and we saw a strong transaction volume for all the different age segments.

Surprisingly, 28 units younger than 5 years old switched hands. It is worth mentioning that 10 of them were sold by Maersk Tankers to ADNOC. However, there were only 10 transactions for vessels aged between 5 and 10 years.

95 transactions took place for vessels older than 10 years, almost evenly balanced between the 10-15 years and the 15+ years segments. Among them, several units built at Shanghai Waigaoqiao Shipbuilding, emanating from the Xihe Bunkruptcy, were sold to different Greek buyers. Messieurs Castor Maritime were a major player purchasing up to 6 units in the segment.

The Aframax and LR2 segment has been the most active and enjoyed the most recognition in terms of price increase. This was driven by belief amongst buyers in the potential future upside to assets plays.

Out of the 69 Aframaxes (including LR2s) which were expected to be delivered during 2021, only 51 hit the water. In 2022, we should see another 48 vessels delivered while, as of late December 2021, the total orderbook stood at 58 units.

Panamax tanker sales increased to 41 transactions in 2021 against 24 reported the previous year. Only 4 units were less than 5 years old, built at Sungdong and sold by SAFEMARINE CORP. Only 3 units between 5 and 10 years old changed hands. Therefore, more than 80% of the transactions were for vessels older than 10 years. Among them, Eletson has been an active seller. The Xihe bankruptcy contributed to this activity with the disposal of four units built in 2007 at New Century for an average price of $10 million each.

In the Panamax (including LR1) fleet, we only saw 2 vessels delivered across 2021 against an anticipated number of 5 units, with 12 demolitions and no new orders. The total orderbook at end-2021 stood at 4 units, all due in 2022.

MR1 and MR2

MR2 S&P activity benefited from the same positive trend as crude tankers. However, the focus of buyers was clearly concentrated on 10 to 15 year old units. This reflected the exacerbated price evolution for newbuilding and resales (+14% increase) as opposed to values for the oldest vintage units which ended the year roughly where they stood in early 2021. Their smaller LDT meant that the rise of scrap steel prices had a smaller impact on their values.

The total number of transactions for further trading surged to 168 units compared with 116 in 2020. A strong 40 units below 5 years of age found new homes. In the 5 to 10 year old segment, there were 26 transactions reported. The preferred 10-15 year old segment saw a large total of 71 units sold. 15 years and older were not the flavour of the month with just 31 transactions reported.

The increase in second hand prices for modern units gave early exit opportunities for some sellers and the opportunity to bet on the future of the market for some buyers. If modern vessels values increased at a slower pace than newbuilding prices, this was of course related to the immediate current poor chartering market. Otherwise, vessels between 10 and 15 years old were particularly attractive for potential buyers.

In the newbuilding market, 88 MR2s were ordered during 2021, and 80 units were delivered against the initial expectation of 106. The total orderbook remains high with 149 units, of which 87 are expected to be delivered in 2022. A healthy 38 units were reported sold for demolition last year.

S&P activity in the MR1 segment was limited once again with only 37 transactions for further trading. Of which, only 4 units were less than 5 years old. Once again more than half of the sales were for units between 10 and 15 years of age. To complete the picture, 13 units older than 15 years old changed hands, with several Vietnamese and Middle Eastern buyers.

As of the 31 December 2021, the MR1 orderbook was left with only 3 units on order, all scheduled for 2022 delivery. Meanwhile, 24 units were sold for demolition in 2021.

OBO

Once again activity was limited in the OBO fleet with 3 transactions taking place in the S&P market. SKS sold 2 of their 120,000 dwt 2003 Hyundai Heavy-built units to Middle Eastern buyers for about $15 million each, while Klaveness sold their cabu vessel Banasol 72,562 dwt 2011 Oshima-built unit to Chinese buyers for a reported $13 million. The last three vessels on order at Yangzijiang were delivered to Klaveness and none remain on order.

S&P outlook for 2022

2021 was a year of expectations. Expectations which were not fulfilled. Endogenous pressure propelled tanker values higher, however, the segment lacked the demand support from the chartering market. Now the question is whether the market can recover in 2022? In theory no, but 2022 could, and should, be a year of change.

Nevertheless, shipowners could again suffer from headwinds as the Covid pandemic remains the key factor driving the evolution of the global demand for crude transportation. Therefore, the emergence of new Covid variants may kill this recovery theory.

There are therefore different approaches and expectations. Looking at the successful vaccination campaigns around the world and the decreased severity of recent variants, we hope to see a recovery in the second part of 2022 driving an increase in the demand for crude oil and clean products.

Although the discussions between Iran and the other P5+1 members continue, it doesn't appear likely that a nuclear deal can be reached promptly, the effect of which would be to reinstate Iranian crude in the market. Hopes for tanker owners should not be lost as they rest on more than geo-political outcomes – for instance EEXI regulations will be introduced in January 2023.

The new requirements in terms of the maximum amount of CO_2 emissions per tonne-mile will have a significant effect in 2023 and the necessary pre-adjustments will start to show in 2022. Every vessel larger than 400 GT will need to comply with the regulation and have their attained EEXI recorded as lower than the maximum threshold.

Among the existing possibilities to reduce a vessel's EEXI there is the derating of the main engine or the reduction of speed. Both cases might make older vessels less attractive and continue to push them out of the market but this will not happen in one day. It will be a slow process.

On the newbuilding front, prices are historically high, and yards are particularly busy. Owners rightfully question themselves every day in respect of the proper propulsion system to opt for (knowing that they must get it right for the next 20 years...). Therefore, the number of tanker newbuilding orders for short-term delivery will not be high. Although there is a high quantity of vessels to be delivered in 2022, numbers are significantly lower for 2023 with no slots available for the year anymore. There is therefore no doubt that the tanker market will have its revenge against containers and bulkers and there is no doubt that tanker owners will endeavour to get ready to make tough calls in 2022.

*Picture: **NORD MYABI**, oil products tanker, 49,996 dwt, newbuilding delivered by Imabari Minaminippon Oita shipyard to Norden in 2022.*

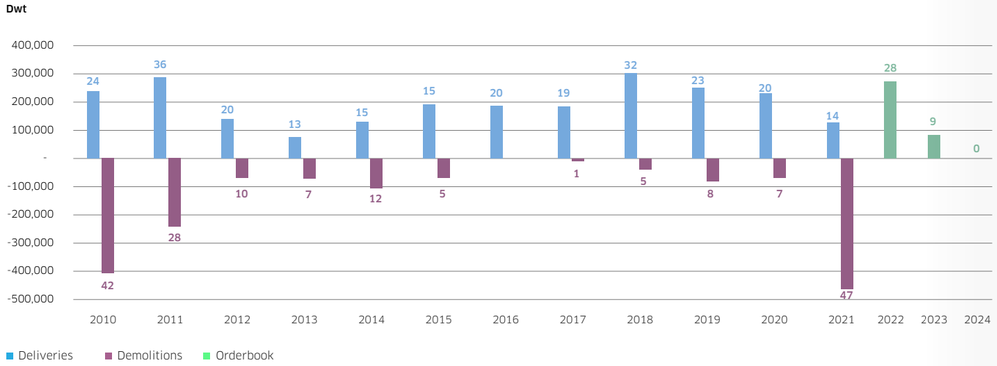
Chemical & Small Tankers

2021: Owners waiting for favourable winds to blow

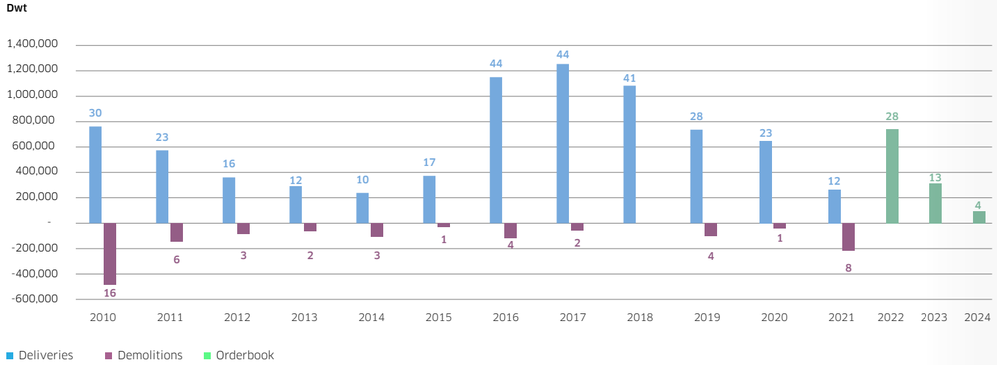
After the arrival of Covid in 2020 and the associated strong global recession, there were hopes that 2021 was going to be a year of economic recovery and enhanced chemical demand. This sentiment has partly been postponed for 2022 due to the persistence of the pandemic and the emergence of new variants that continued to disrupt the market. Chemical tanker shipowners had to sail through progressively stronger fuel prices across the year, an imbalance of trading flows, a reduction in USGC chemical capacity in the wake of winter storms and strong delays centred on Asian ports following the imposition of Covid-related restrictions.

TOSCA
Chemical/oil stainless steel tanker 7,172.60 MT, built by CHINA MERCHANTS JINLING SHIPYARD (YANGZHOU) DINGHENG CO., LTD. in 2021, operated by Gefo.

SST & Part SST Chemical Tanker (up to 19,000 dwt)



SST & Part SST Chemical Tanker (19,000 dwt and up)



CHARTERING

Fleet development and chemical demand

The evolution of the stainless steel chemical tanker fleet decelerated in 2021 (with 1,293 ships in service against 1,323 in 2020). In 2017, deliveries of stainless steel tonnage peaked as 63 ships for a combined 1.4 mln dwt hit the water. This has steadily decreased so that by 2021 26 ships were launched for a combined 386,000 dwt.

Demolition prices boomed in 2021 and the market saw around 668,000 dwt of tonnage sent to scrap (55 ships), helping to further rebalance the fleet. The long-anticipated impact on demolition by various environmental regulations was delayed somewhat as some owners obtained extra years to equip their existing fleet with ballast water treatment systems. Nonetheless, a combination of the ageing fleet and incoming, stricter environmental regulations are expected to push chemical tankers towards scrapping in the future.

The chemical tanker orderbook stands at a low level and the expectation is that demand for capacity will outpace fleet growth. Market observers expect chemical demand growth to rebound at an average of 2.5% per year between 2021 and 2026. The signs of recovery in the global economy are already there. For example, the IMF forecasts global GDP growth at 4.4% in 2022, and chemical demand should follow.

During 2021, the chemical tanker market experienced several challenges. Notably, there were volume disruptions related to Covid while there was some spillover from a persistently weak CPP tanker market which resulted in swing tonnage competing with chemical tankers.

The chemical flows were imbalanced. A big early-year freeze in Texas resulted in the shutdown of many production facilities on the USGC, which reduced chemical capacities and combined with strong domestic demand, saw low exports for most of the year. This situation led to the increased demand for Far Eastern exports. All this pressure in the East, together with Covid restrictions, quarantines, port closures and congestion at the ports was the perfect combination to increase freight rates on routes leaving the Far East. There was some fear that the blockage of the Suez Canal in March was going to create some tonnage tightness in the area but finally it only lasted 6 days.

The strong tank container market also brought some parcels to the bulk chemical market. Therefore, the fundamentals are favourable for owners: the fleet growth is limited with a small orderbook, yards are full until 2024-2025 and it seems that the CPP tanker market is expected to eventually improve so swing tonnage should stay at bay. The trend for COA discussions was to get an increase on the rates as tonnage supply prospects looked tight over the short term.

The chemical tanker orderbook stands at a low level and the expectation is that demand for capacity will outpace fleet growth

*Picture: **FURE VALÖ**, Chemical/oil tanker, 17,991 MT dwt, built by Avic Dingheng Shipbuilding Co. Ltd in 2018, operated by Furetank.*

Development of chemical tanker pools

The pooling trend continues among chemical tanker owners. In 2020, Odfjell, for example, set up two MR pools with Navig8 and TRF and in 2021 formed a new pool for stainless steel vessels. This new pool handles seven 33,000 dwt chemical tankers together with EGD Shipholding. Odfjell own four of their vessels, and EGD the other three. This pooling lowers Odfjell's risk than would be the case with time-chartered vessels, as it provides more flexibility while adding tonnage and increasing their market share.

Similarly, Stolt Tankers and Tufton Investment Limited signed a pooling agreement for seven of Tufton's 19,000-21,999 dwt chemical tankers to join the Stolt Tankers Joint Service (STJS) Deep-Sea Fleet. Furthermore, the two companies have agreed to jointly explore and pursue vessel efficiency and propulsion research, environmental projects, and a biofuel testing programme with the goal of reducing carbon emissions.

Path of decarbonisation

We are increasingly seeing owners' questions on how their chemical tanker newbuildings can adhere to future, stricter environmental regulations. The IMO has the target of reducing CO_2 emissions by 40% by 2030, and 70% by 2050, and to reduce GHG emissions by 50% by 2050, compared with 2008. The Energy Efficiency Design Index (EEDI) is applied to new ships built after 2013 and two associated IMO indexes have been established as reference points for existing ships: the Efficiency Existing Ship Index (EEXI) and the Carbon Intensity Indicator (CII).

The EEXI and CII will come into effect in 2023. The CII will be used to rate ships on a 5-grade scale: A, B, C, D, E (from best to least performing). Ship design upgrades or operational improvements will be required of vessels receiving a D rating 3 years in a row or for vessels receiving a grade E during any annual review.

Apart from that, the EU has the "Fit for 55" target where it wants to reduce the region's greenhouse gas emissions by 55% by 2030, compared with the 1990 baseline. This package includes legislative proposals and some of them are linked to shipping, i.e. the EU Emission Trading System (EU ETS) that will set a cap on the total amount of GHG emissions that can be emitted, and shipowners will have to buy permits when their ships pollute or will face fines and possible bans from EU ports. The measure will be phased in over a three-year period from 2023.

The question today is how to adapt and improve the emissions of existing vessels, and which measures will be necessary: optimise operations, reduce speed, etc. Another question is how to build the next generation of vessels and to anticipate the technology to be used in future vessels, evaluating what will be the efficiency and availability of alternative fuels. Currently, there is significant uncertainty concerning future propulsion.

***Picture: NORMA**, Chemical/oil stainless steel tanker 7,393.90 MT dwt, built by China Merchants Jinling Shipyard(Yangzhou) Dingheng in 2020, operated by Gefo.*

Today we see a trend to build dual-fuel LNG chemical tankers. However, biofuels, methanol, ammonia and hydrogen are all under consideration. Stolt performed a biofuel trial voyage during 2021 on a Transatlantic shipment as part of their strategy to explore several alternative fuels to reduce GHG emissions.

Northwest Europe: FAME, CPP and DPP

2021 continued where we left off from the previous year. The effects of Covid cast its dark shadow across the world; with any signs of the global pandemic ending becoming false dawns as one mutation of the disease morphed into another. Overshadowing all this, the economic and political environment was perhaps even more complex than the year before; what with Russia's sabre rattling with Ukraine and their use of the shadowy Wagner Group, and China continuing to flex its muscles around the world and arguably become even more authoritarian. Factor in the huge spike in oil prices and the world is left with quite a heady mix.

With European lockdown measures continuing on and off, clean product demand never really kicked into gear. The only brief "spike" (and that is probably an extravagant use of the word) occurred when there was a lorry driver shortage in the UK and petrol stations ran short; cue panic buying from the populace! Freight rates across the Baltic, UK Continent and the Mediterranean remained depressed and under sustained downward pressure well into November; with freight being dragged along the very bottom as each new fixture set a new low benchmark. Charterers were spoilt for choice; what with so many vessels sitting spot and idle they could dictate levels; "take it or leave it". The only saving grace - and the polar opposite to the previous winter - into the heart of November and December was that the market finally showed signs of a rebound. Demand rose (on the back of ever-increasing bunker prices) freight finally started to climb north, and not before time. December was particularly active, and for once even the Coasters (4-9,000 cbm) - usually the last in line to reap the benefits of increased freight levels - could take advantage!

The DPP market again struggled for much of the year; but their lows were not as low as their CPP brethren. Either way it wasn't pretty, and against the backdrop of continued travel restrictions, it made for a grim year. When the market did show signs of a rebound in November and December the DPP sector didn't follow at the same pace; and they could only look on with envy at their CPP siblings while the bunker prices ate into their bottom line.

For 2022 we want to be more optimistic! At least freight rates should not fall off a cliff due to in part to the crippling cost of bunkers. There is the hope that with the onset of "Covid fatigue" governments can't sustain propping up their economies that are semi-shut; the world needs to keep moving and working.

Translatlantic market

After 2020 being under the shadow of Covid which maintained the Transatlantic trade in a lull, 2021 started timidly. COA volumes on Transatlantic Eastbound trades were steady, but spot activity was too hesitant to create any influx on the market. This could have described most of the year if it wasn't for the Big Freeze. The extreme weather conditions in Texas early in 2021 completely impeded business with plant closures, force majeure, and congestions increasing the overcapacity on the market from the US to the Continent. It took until May for the infrastructure to fully come back online, but despite this improvement, shipping remained hindered. Domestic demand in the US claimed most of the production, and consequently exports plummeted. COA volumes were once again, and up until the end of Q3, the only salute for regular players, fighting for every completion cargo they could find. Then Q4 marked a turn, activity progressively picked up, helped by the year-end rally to empty inventories.

Accordingly, the spot market made a comeback, depleting the position list and thereby boosting owners' confidence as well as freight rates.

The market from Europe to the US Gulf saw a very difficult Q1 to Q3. If COA volumes were steady, it was not unusual to see vessels sailing light in despair of finding a completion cargo.

There was almost no arbitrage available since US production was mostly captured by domestic use. Stocks in Europe were under stress and as such, very little volume was left to be traded on the spot market. For this whole period freight rates remained flat. If owners have accepted to live on minimum wage for this route, the barrier was already reached, and owners would not go any lower despite the pressure.

Fortunately, Q4 saw far better results, with the spot market steadily gaining pace. Indeed, the position list went from completely over-tonnaged to very tight during the period which gave leverage to owners to increase freight consequently.

Northeast Asian market

2021 was the best and most fruitful year for chemical tanker owners in last 20 years in the Northeast Asian Market, partially due to the spillover effect from a roaring container/ISO tank market.

The Northeast Asian (NEA) market in Q1 was very firm and characterised by strengthening freight rates as strong seasonal demand for energy combined with bad weather. COA volumes remained stable and spot inquiries increased. The export market from China was also strong, there were still many inquiries for products such as BA, VAM, Acetone, etc. in the market looking for space within March. As bunker prices continued to rise, owners pushed charterers to pay higher freight rates. Entering into Q2, the market in NEA was still firm for the first two months and most of the owners were surprised as it slackened as summer arrived. Owners tried their best to push the freight up to a higher level as they remained very optimistic about the short-term prospects for the intra-Asia market. Due to stricter Covid regulations in China, shipping management costs steadily increased, and together with high bunker costs, owners tried to raise freight levels. The market started to go downhill from June, the traditional slack season, and cargo movement was not as active as previous months due to the shutdown of many plants for scheduled maintenance. However, freight rates held firm. The market in NEA embarked on a roller coaster ride from Q3 to Q4. At the beginning of Q3, cargo movement was dipping, but when it came to the second half of July, as Covid cases increased suddenly

in China, the market changed. As Covid restrictions were introduced at most ports in mid-China, it produced many issues for both owners and charterers. Most vessels were stuck in CJK. The average waiting time for a pilot was 3 to 7 days and the situation worsened as the Typhoon season arrived. Going into Q4, due to Covid, the shortage of pilots at river ports in mid-China impacted the efficiency of such ports. Accordingly, the wait for a pilot for foreign vessels at CJK soared to around 7-14 days. This situation persisted until the end of the year. Consequently, many foreign shipowners refused to call at Yangtze River ports in order to avoid these issues.

In turn, this propelled freight rates for Chinese-flagged ships voyaging to and from China to record levels.

The negotiations and renewal of COAs are now complex and difficult to move forward. On one hand, owners are proposing big increases for the freight based on the current market, and on the other hand, charterers are not confident such hot market conditions will persist the entire year amid the uncertainty of how the pandemic and associated government policies will evolve in China. Accordingly, negotiations have dragged on for months.

Chinese domestic market

It was a prosperous year for domestic owners in 2021, the domestic Chinese market was tight throughout the year with high demand across all vessel segments and firm freight rates.

With many big petrochemical plants commencing operations this year, including plants operated by Sinochem, Shenghong Petrochemical, Huayi, Zhenjiang Petrochemical, Bora and Hengli, the current volume of domestic tonnage is far from meeting these requirements.

The Chinese domestic market was very hot in Q1 and Q2 2021 due to high demand against the backdrop of very cold weather and as dense fog and strong congestion disrupted operations at many Chinese ports. Charterers were suffering from fighting for space from owners. Owners were busy performing their COA nominations and therefore it was difficult to find space for spot cargoes, even though charterers were willing to pay double freight.

The Chinese domestic market in early Q3 was not as hot as the first half of the year due to planned plant maintenance. Indeed, this saw freight rates return towards normal levels. However, as Covid restrictions were introduced at most of the ports in mid-China, congestion rose which saw tonnage tighten again.

Going into Q4, heavy winds and dense fog regularly influenced North China ports, and port delays due to pilot availability in mid China, saw vessel delays rise and further tightened the market which in turn, fuelled higher freight rates.

Conclusion

Chemical Tanker market prospects are pointing in the direction of an upcycle favourable for owners. The orderbook is small, the outlook for the chemical demand is robust as it should follow the recovery of the global economic activity, and there are hopes that the CPP market should improve in line with higher demand for oil which will remove the competition from swing tonnage.

However, in this positive outlook there is still the concern for chemical owners to decipher which realistic and effective fuel to choose for new ships. This will have to reflect the fuel supply capacity, bunkering infrastructure and the prevailing economics as the market grapples with how to achieve the new targets of GHG reduction over the coming years.

***Picture: CORELLI**, Chemical/oil stainless steel tanker 3,887.90 MT built by China Merchants Jinling Shipyard(Yangzhou) Dingheng in 2021, operated by Gefo.*

SECOND HAND MARKET

Small tankers and chemical carriers (3,000-25,000 dwt)

2021 saw strong S&P activity with more than 230 sales recorded, including 62 stainless steel tankers changing hands and only 5 bitumen tankers. The average age of vessels sold increased again but last year it took a giant leap and stood at a record of 18 years indicating a flee from the older unit.

The orderbook remains quite low and in deadweight terms (2 m dwt equating to 4.5 % of the active fleet) but remains higher than the demolition seen last year (2.8% of the fleet).

The average size of coated tankers sold has decreased to 9,000 dwt compared with 14,500 dwt for stainless steel tankers.

The post-pandemic economic recovery, the progressive easing of movement restrictions and the steady upward movement of crude oil prices combined to drive bunker prices significantly higher.

So, there was the stick: the much-feared sudden impact of bunker prices that did not materialize in 2020 finally arrived and disproportionately hit the smaller vessels. VLSFO prices started at $425/mt and rose by 50% to finish the year at $625/mt. However, for most vessels of this size, scrubbers have never been an option and what mattered most were MGO prices which increased by approximately $250/mt (from $475/mt to $725/mt) making many vessels economically irrelevant.

Nonetheless, there was a carrot too: healthy demolition prices offered an escape door to this profitability inferno. 2021 saw a historically high number of small tankers sent to breakers. No less than 140 vessels for 1.26 m dwt was scrapped (+200% year-on-year). Indeed, last year saws many small tankers demolished as in the previous 5 years combined.

However, this represented only 2.8 % of the active fleet with an average age of demolition of 30 years (compared with 32 years in 2020).

The bitumen tanker market took a pause with only 5 sales recorded.

2022 Outlook

World steel prices show little sign of weakening and the purge of the older fleet will continue to boost scrapping. It has been quite a dreadful year for the smaller units. However, the long-awaited resumption of scrapping combined with some port congestion in the fourth quarter supported charter rates and gave hopes to the owners for the future. Negotiations are becoming more balanced between sellers and buyers with some sale candidates being withdrawn from the S&P market.

The relentless upsurge in bunker prices and the introduction in 2023 of the carbon intensity indicator (CII) will both help to build up a more balanced fleet and should curb newbuilding orders. The two factors can be seen as a blessing in disguise, but only for those who will stay on the scene as many small operators are expected to exit the market altogether.

***Picture: MORBIHAN**, Product Tanker, 9,150 dwt, twin azimuth thrusters and diesel-electric propulsion. Delivered in 2021 by New Yangzi Shipbuilding. Owned by Rubis Eastern Caribbean Barbados. The vessel services French Guiana.*

LPG

Weathering the Storm

As 2022 begins and as the Covid pandemic continues to ebb and flow globally, LPG trade has gained its footing after remaining flat during 2020. Global seaborne LPG trade reached 121.9 million tons in 2021, up from 116.3 million tons in 2020 marking a 4.9% year-on-year increase.

AVANCE POLARIS
VLGC (Gas Carrier), 89,180 cbm, built by DSME yard in South Korea, delivered in January 2022 and owned by AVANCE GAS.

Photo: ©Avance Polaris departure from DSME Yard.

CHARTERING

Although the growth in LPG trade from 2020 to 2021 was less than the 7.1% 2016-19 annual average, before the onset of Covid Pandemic and its dramatic effects on the worldwide economy, the increase in LPG trade is nonetheless a positive reflection of increasingly encouraging macroeconomic sentiment.

After gaining its status as the world's leading LPG exporter in 2018, the US continues to increase its dominance. In 2021, it exported slightly over 50 million tons of LPG, an increase of 11.5% from the previous year, and now accounts for 41% of global exports, up from 39% in 2020. On the other hand, exports from the Middle East Gulf continued their long-term decline which has been evident since 2018. In 2021 the year-on-year fall was less than one third of a percentage point. Exports from the region totalled 34.7 million tons and represented 29% of global exports, a one percentage point reduction since 2020. The cut in Middle Eastern exports was largely a consequence of OPEC+'s agreement to reduce crude production. Going forward, LPG exports are expected to increase as the producer group continues to hike their crude output.

East Asia remains the world's major importing region importing 54.8 million tons of LPG last year, a 4.9% increase from 2020. The majority of incremental volumes were imported by China which took in 23.9 million tons in 2021; a substantial 14.5% increase compared with 2020. More than two thirds of the LPG imports to China was made up of the sub-commodity propane used in their expanding propane dehydrogenation (PDH) industry. India, the world's second largest LPG importer, also increased its LPG imports to 18.6 million tons, an increase of 7.4% since 2020. India's LPG use is centred on household cooking and transportation as well as the petrochemical industry. Japan's LPG import figures have been fairly stable over the last decade at about 10-10.8 million tons per annum. However, the reliance on North American product has increased substantially from about 14% in 2014 to 82% in 2021. This includes the emergence of Canadian imports from the Ridley Island Propane Export Terminal (RIPET) north of Vancouver.

LPG imports into Europe and Southeast Asia have been static during the last couple of years with fluctuations of less than 2% year-on-year. Southeast Asia imported 11.6 million tons in 2021, while Europe imported 22 million tons.

As we have become accustomed to over the recent past, geopolitical and climate issues continued to guide the momentum of LPG trade during 2021. The start of the year was characterised by optimism on the back of the nascent global Covid vaccine rollout and the hope that the pandemic was coming to an end. This, along with supply cuts from the Middle East in line with OPEC decisions, raised freight rates as the longer haul exports from the US Gulf Coast reduced vessel availability. However, the positivity in LPG trade was relatively short lived. The so called 'Big Freeze' winter storm which hit Texas and Louisiana in mid-February led to flaring and plant shutdowns, some of which were not resolved for many months. The technical problems in the region led to reductions in inventories. At the same time, China had been oversupplied ahead of the Lunar New Year holidays and both occurrences led to a lack of enquiries and long positions in the East and West. At end-March, the container ship Ever Given blocked the Suez Canal for six days. However, this caused minimal disruption to LPG trade as the main flows do not pass through the Canal. In fact, delays at the Panama Canal caused more interruption to trade than the blocking of the Suez Canal during the year. Gas carriers experienced waiting times of up to 18 days if no transit slot had been booked, and some owners opted to reroute vessels around the Cape of Good Hope during the year. We believe that the risk concerning Panama Canal transit delays will persist and has the very real prospect of increasing as additional gas carriers are added to the fleet. Other events, such as delays at the Chang Jiang Kou pilot station caused by Covid restrictions limiting the availability of pilots guiding vessels in the Yangtze River added to delays and affected tonnage availability.

VLGC/LGC

VLGC freight rates were again volatile in 2021, particularly during the first quarter. The published Baltic freight rate from Houston to Chiba (BLPG3) for a 44kt cargo peaked at approximately $182/mt in the first half of January and dropped by almost 70% to $57/mt two months later. The arbitrage driven freight rate for this trade regained some footing thereafter and mostly remained in the $ 80's/mt until November when rates exceeded the $100/mt level again. A similar trend occurred on the Ras Tanura to Chiba route which peaked at close to $120/mt in January before dropping by more than 75% to approximately $28/mt in early March, before closing the year at $73/mt. We calculate that the average time charter equivalent (TCE) for VLGCs was just under $34,000/day during the year which represents a reduction of $12,000/day compared with 2020.

The LGC segment experienced less volatility than their larger cousins, due mostly to the fact that a higher percentage are on long term charterers. Their average time charter equivalents were about $29,000/day which is only slightly lower than in 2020.

MGC/Handysize

The midsize gas carrier market was stable in 2021 with TCE's in the $750,000-820,000 range per calendar month for the 35,000 cbm and 38,000 cbm vessels respectively.

The Handysize carrier fleet saw earnings improve, averaging $22-24,000/day during the year. As in 2020, higher earnings came on the back of petrochemical trade, especially related to US ethylene exports and backhaul cargoes from Asia to the Americas.

Petrochemical gasses

As with LPG, last year the petrochemical market was sensitive to major trends in the global economy. Notably, the spillover effects of Covid in both shipping and operations, while the weather had a measurable impact in the industry. Indeed, this mirrored all sectors of the fossil fuels industry.

Asia Pacific, the largest region in the global petrochemicals market, started the year with production cutbacks as an earthquake hit Northeast Japan in February. Although the natural disaster caused no major structural damage to plants around the region, power outages and unscheduled turnarounds lowered the output of ethylene and propylene in the first quarter. In China, PDH operating rates dropped to a multi-year low on planned turnaround and outages, eight PDH plants out of 19 were shut by the end of the first quarter resulting in a 37% decline of total PDH production capacity, driving propylene prices to 6-year highs.

The second quarter saw the commissioning of new crackers in China and South Korea. Meanwhile, other facilities restarted operations after long turnarounds. South Korea added 750 kt/yr of propylene capacity with the start-up of crackers at GS Caltex and LG Chem, which drove propylene prices down. Consequently, intra-regional arbitrage opened as European prices remained supported, prompting more discussions to move Asian-origin cargoes Westbound.

Heavy rains in Northwest Europe caused severe floods in Germany, The Netherlands, and Belgium, affecting movements along the River Rhine, and disrupting production and logistics. With Europe lacking product, imports from the Middle East supplemented domestic supply with 40,000 tons of propylene delivered in May.

By the end of summer, Asia's domestic propylene prices were negatively affected by rising output combining with weak regional demand. This motivated traders to look to the Americas as an alternative, attractive destination.

With the surge in east to west propylene trade up by over 30%, shipping proved to be a big challenge in the fourth quarter. Moreover, Covid cases in Asia were on the rise by the end of the third quarter, which led to the proliferation of movement restrictions and lockdowns. China faced a lack of pilots in the Yangtze River which hindered the movement of pressurized tonnage and left charterers facing high demurrage bills while owners handled scheduling delays and voyage cancellations. Consequently, freight rates strengthened while some owners were reluctant to call at Chinese river ports to avoid delays which had reached 10-14 days. As tonnage tightened, we saw cargoes being fixed more than a month in advance to ensure space could be secured while traders were reluctant to firm up cargoes without a ship in hand.

*Picture: **CLIPPER HERMOD**, 17,100 cbm LPG/Ethylene Carriers delivered in 2008 by Meyer Werft to Clipper Shipping AS.*

As lockdowns continued in East of Suez countries, demand weakened which triggered reduced global petrochemical trade towards the end of the year. In addition, weak Japanese demand contributed to a decline in production of basic petrochemicals, as the auto industry stagnated. Meanwhile, naphtha and crude prices strengthened on tighter global fundamentals which forced some producers to make economic run cuts to counter weak margins. Furthermore, butadiene prices started to decline in the wake of China's policy to reduce rubber production.

Notwithstanding continuous declining butadiene prices into fourth quarter, Philippines' JG Summit confirmed that, they had achieved on-specification of butadiene at their new 70,000mt per year extraction unit in Batangas. As there is no downstream butadiene consumption in the Philippines, all production is set to be exported. However, in light of weak Asian buying interest amid low operating rates, their first export had to be deferred.

US butadiene prices rose on the back of supply shortages, which were related to shutdowns during the winter storms and hurricanes. In a rare move, US prices moved above Asian prices which incentivised imports from Europe and Asia. By the end of the second quarter, US import prices stood at about $1,700/mt plus freight from Europe, close to 30% higher than the June contract price, this compared with $1,300/mt (on a CFR basis) in Asia.

Following stronger US and Chinese prices, and with new butadiene extraction units in place, East Asian export volumes increased by over 80,000 metric tons while US Gulf exports fell by close to 72,000 metric tons in 2021 compared with the previous year. All told, these contrasting trends saw the global volume of butadiene trade remain relatively flat year-on-year, although with higher ton-mile figures.

The peak of the European ethylene maintenance season saw around 14% of capacity offline in May 2021. This included both planned and unplanned shutdowns which tightened the market. Shutdowns included one cracker in France, two units in the UK, issues in Italy, Germany and the ARA region, and an outage at a large merchant cracker on the ARG pipeline. In the aftermath of the floods and damages, Europe's balance tightened, and prices accordingly strengthened. This had the effect of decreasing European exports by 40% in 2021 compared with the previous year.

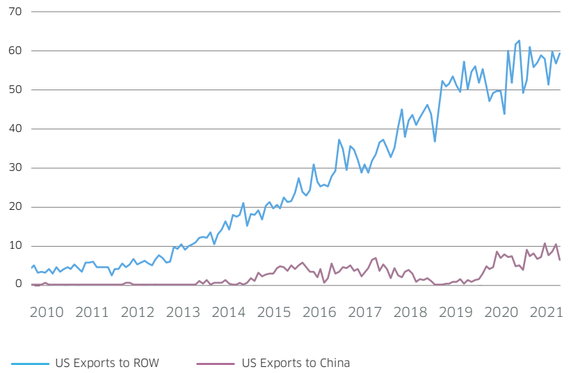
In the US, ethylene supply began to gradually increase from the beginning of the second quarter, although progress was slow given that producers were still recovering from cracker outages and extensive disruptions caused by earlier storms. As a result the shipping market focused on cargoes from the Middle East and East Asia instead. Ethylene prices lowered in the fourth quarter as additional tons were made available from Brazil, Italy, and the Middle East. We estimate about 750,000 metric tons of ethylene being shipped from the US Gulf in 2021 to Europe and Asia, as and when arbitrage windows opened and closed in various regions.

China imported 1.9 million tons of ethylene over January-November, 4% more than the previous year.

Picture: ***Eastern Pacific Shipping****, LPG Carrier, 38,066 cbm, delivered in 2020 by Hyundai Mipo Dockyard to Picer Marine SA, operated by Eastern Pacific Shipping.*

US LPG exports to China and the rest of the world

Million barrel / month



Overview of New Crackers in 2021:

Eleven new crackers started operations in Asia during 2021, with a total capacity of 9.15 m mt/yr of ethylene and integrated downstream capacities, including 5.9 m mt/yr of polyethylene (PE), 830,000 mt/yr of ethylene oxide (EO), 2.52 m mt/yr of monoethylene glycol (MEG), 1 m mt/yr of styrene monomer (SM) and 300,000 mt/yr of ethylene vinyl acetate (EVA).

- Chinese state-controlled firm Haiguo Longyou Petrochemical achieved production at its deep catalytic cracker (DCC). The DCC, located in northeast China's Heilongjiang province, can produce up to 400,000 mt/yr of ethylene and 550,000 mt/yr of propylene at capacity.
- Chinese private-sector firm Fujian Meide Petrochemical, a subsidiary of Fujian Soft Packaging, has started propylene production at its 660,000 mt/yr PDH unit in southeast China's Fujian province.
- Japanese refiner and petrochemical producer Eneos commenced ethylene production at its large Kawasaki-based cracker. The cracker has 540,000 mt/yr of ethylene and 300,000 mt/yr of propylene capacity.
- Chinese private-sector refiner and petrochemical producer Zhejiang Petrochemical (ZPC) started olefin production at its new 1.4 m mt/yr No.2 cracker in Zhejiang province. The cracker also has 700,000 mt/yr of propylene production.
- South Korean petrochemical producer LG Chem began olefins production at its new naphtha-fed cracker in Yeosu. The cracker has a nameplate capacity of 800,000 mt/yr of ethylene, 400,000 mt/yr of propylene and 140,000 mt/yr of butadiene.
- South Korean refiner and petrochemical producer GS Caltex started ethylene production at its new naphtha-fed cracker in Yeosu. The cracker can produce up to 700,000 mt/yr of ethylene and 350,000 mt/yr of propylene at capacity rate.
- China's state-controlled PetroChina Lanzhou Petrochemical commenced ethylene production at its first ethane-fed cracker. The cracker at Changqing in Yulin county in Northwestern China's Shaanxi province is fed with ethane from its Changqing gas fractionation plant and can produce up to 800,000 mt/yr of ethylene. The company has also built 800,000 mt/yr of polyethylene (PE) capacity integrated with the new cracker. The two PE units started up in advance, being fed by merchant ethylene supplies. China's Gulei Petrochemical (Gulei PC) began ethylene production at its new steam cracker. The cracker at Zhangzhou in Southeast China's Fujian province has output capacity of 1 m mt/yr of ethylene and 500,000 mt/yr of propylene. However, it can produce up to 1.2 m mt/yr of ethylene and 600,000 mt/yr of propylene.
- Chinese private-sector petrochemical producer Ningxia Runfeng New Material Technology achieved on-specification propylene production at its 300,000 mt/yr PDH unit in northwest China's Ningxia province.
- Chinese private-sector producer Jinneng Technology commenced propylene output at its new 900,000 mt/yr PDH unit in northeast China's Shandong province.
- South Korean petrochemical producer Hyundai Chemical started olefins production at its new heavy feed cracker in Daesan. The company, a joint venture between Hyundai Oilbank and Lotte Chemical, obtained on-specification propylene and ethylene production having fed in heavy residuals on 29 November. The new cracker has 900,000 mt/yr of ethylene and 450,000 mt/yr of propylene production capacity. It is integrated with a 300,000 mt/yr low-density polyethylene (LDPE)/ethylene vinyl-acetate (EVA) swing plant, a 250,000 mt/yr high-density polyethylene (HDPE) production line, a 300,000 mt/yr HDPE line and two 250,000 mt/yr polypropylene (PP) units.

Geopolitical and climate issues have guided the momentum of LPG trade during 2021

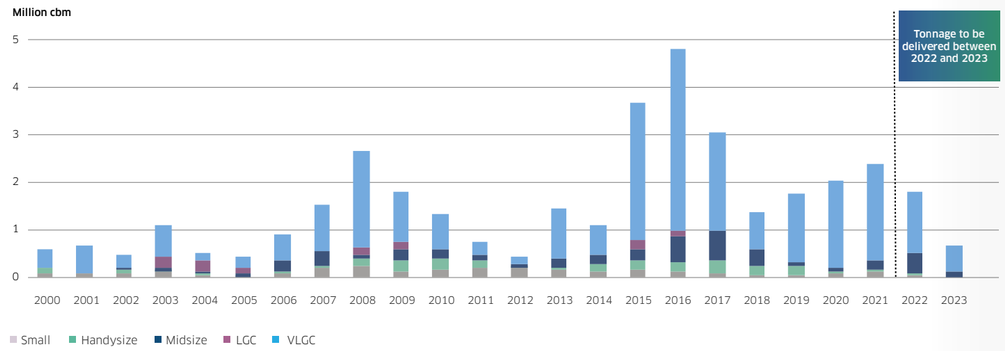
THE FLEET

Eighteen VLGC's were delivered in 2021, compared with 21 in 2020 and 17 in 2019. The order book, however, currently stands at 80 vessels which represents 25% of the current fleet. There are some 50 vessels over the age of 20 which may become scrapping candidates over time.

As with recent years, there were no LGC deliveries during 2021, and none were ordered. The last new buildings joining the fleet hit the water in 2015 (3 vessels) and 2016 (2 vessels). Therefore, the fleet composition remains unchanged at 21 vessels. The recent trend has been to abandon this segment and to favour the improved economies of scale afforded by VLGCs.

Baltic Exchange Liquid Petroleum Gas Index

LPG tonnage delivery and orderbook by vessel type since 2000



By the end of 2021 there were 106 MGC's after one demolition and four deliveries in the year. The order book stands at 34 vessels scheduled be delivered in the next three years.

Seven Handysize vessel are on order for delivery by the end of 2023 adding to the 126 currently in the fleet. No Handysize vessels were delivered in 2021, whereas two were in 2020.

2021 sparked a renaissance in the S&P market, particularly for the VLGC's. Circa 20 transactions took place, with the average age of vessel exchanging hands being 13 years of age. Most of these deals have been reported against the needs of Indian imports, and those of the Indonesian requirement for long term employment. With few owners having such age ships to sell, this competition has maintained, if not increased the buoyancy of the asset values.

In the Midsized market, four vessels exchanged hands for further trading. The average age being about 20 years old. Whilst the Midsized market is generally less liquid than the larger class in terms of second-hand S&P, the most interesting sale is arguably that of the Ex GasChem Hamburg which was sold to affiliates of Japanese Owners MOL. It is understood that this was against an employment for the need for a vessel that can eventually carry ammonia for the bunkering industry.

Developments among gas carrier owners

In August, we saw another consolidation of gas fleets as Navigator Gas and Ultragas finalised their merger. The combined fleet now totals 56 ships including 7 x 22,000 cbm, 5 x 12,000 cbm and 6 x 3,700-9,000 cbm. This makes them the leading owners in cubic capacity in the petrochemical gas shipping market.

Additionally, BW Epic Kosan also bought the Bow Gallant and Bow Guardian, both 9,000 cbm semi-refrigerated ships from Odfjell, taking their fleet to 78 vessels.

Jaccar Holding announced that they will be selling all their assets over the next four years which include the Evergas fleet of 8 x 27,500 cbm and 2 x 85,000 cbm ethylene/ethane carriers and 6 x pressurized carriers on which their charter is expected to expire in 2024.

Picture: ***GASCHEM HOMER****, 5,205 cbm LPG Carrier delivered in 2021 by Nantong CIMC Sinopacific Offshore & Engineering to Chemgas Schiffahrts UG and MT Gaschem Sydney KG.*

LNG

2021: a steady recovery in a new geopolitical context

LNG demand continues to grow at a regular pace with a particular focus on China which is now the world's largest LNG importer for the first time. Accordingly, Chinese LNG imports are expected to exceed 85 m mt in 2022 representing almost 20% of global LNG production.

H-LINE
174,000 cbm LNG carrier delivered at December, 2021 from HSHI.

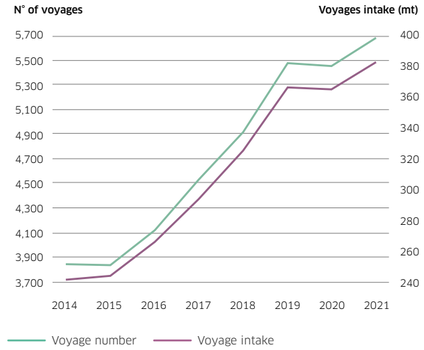
It is interesting to note that LNG is increasingly considered as a geopolitical tool with the signature of several significant long-term sale and purchase agreements between US-based LNG projects and Chinese companies including Unipec, Sinochem and CNOOC. These agreements were signed against the backdrop of the diplomatic crisis between Australia and China which has led Chinese buyers to search for new sources of supply. At the same time, several Eastern European countries including Poland are reinforcing their LNG Imports from elsewhere, especially the US Gulf, despite the availability of pipeline gas from neighbouring Russia. The high spot rates observed in 2021 will increase the development of new liquefaction projects, especially in Russia and North America, to address the growing demand for LNG in China and Southeast Asia. This new geopolitical situation will undoubtedly increase both the international trade of LNG and associated shipping demand.

LNG TRADE

LNG trade increased by 5% year-on-year in 2021. After numerous cargo cancellations during 2020, LNG trade has now resumed on its pre-pandemic path of steady growth. Accordingly, we anticipate annual growth of 10% in 2022.

During 2021 more than 380 m mt of LNG were loaded onboard LNG Carriers which accounted for 5,653 voyages.

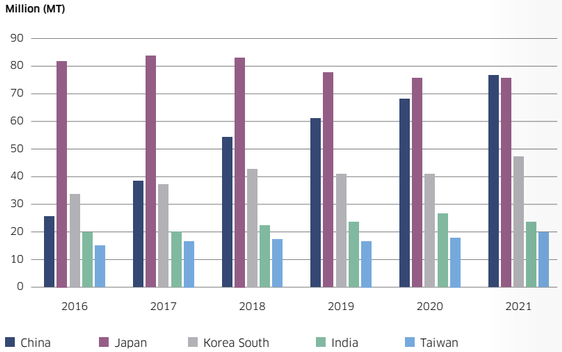
Annual voyage number & LNG intake



64% of global LNG demand was in Asia last year and for the first time, China overtook Japan as the world's top LNG buyer. Indeed, while Japanese imports have slipped slightly over the past couple of years, Chinese imports have continued to increase by 12-13% annually over the last 3 years.

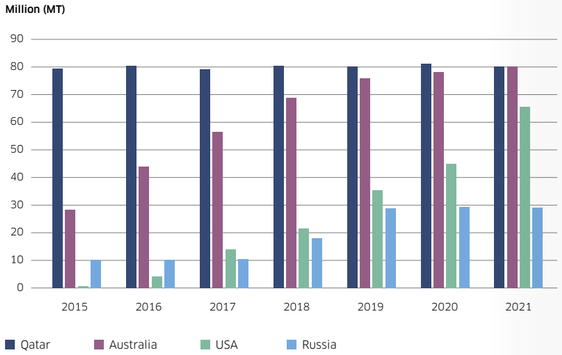
Global LNG trade has also been supported by Chinese demand rising to around 77 m mt per year, an unprecedented level which represents double its imports in 2017. More than 30 m mt of the LNG imported by China last year originated from Australia, almost the same level as in 2020.

Main LNG importers



Australia edged Qatar as the world's largest LNG exporter in 2021. Meanwhile, the US saw the largest increase in exports as volumes ballooned by 45%.

Main LNG exporters

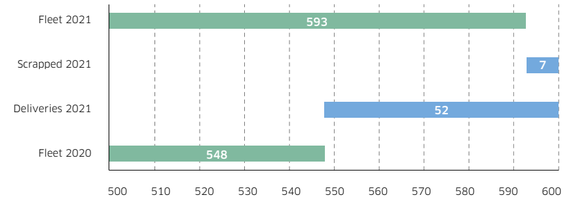


LNG exports from the globe's major suppliers increased last year. The three major LNG exporters (Qatar, Australia and the US) which together account for more than 60% of global LNG production have steadily increased their exports over the last three years, and with it their share of global volumes. LNG exports from the US now represents almost 70 m mt per year which is double its 2019 production level.

THE FLEET

By end-2021, the fleet of large LNG Carriers stood at 593 units representing annual growth of 8%. Last year, 52 vessels were delivered and 7 were scrapped.

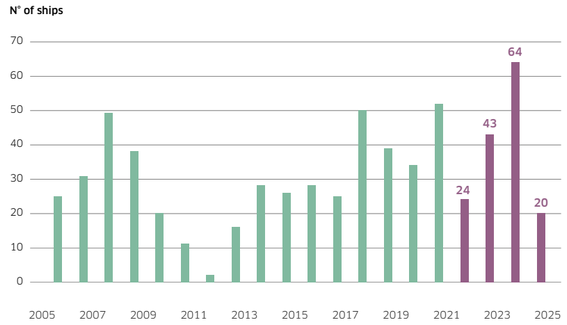
LNG carrier Fleet evolution in 2021



The vessels scrapped in 2021, as in 2020, were old ladies built between 1977 and 1997, with a capacity between a 125,000 cbm to 128,000 cbm (5 Moss type and 2 Membrane type).

Deliveries in 2022 will be towards the bottom of the historical range with only 24 units scheduled, which reflects low ordering activity in 2020. The orderbook extends out to 2025 with at least 20 deliveries. With a record number of orders placed in 2021, and with the slots reserved by QatarEnergy for the renewal of their fleet as well as the expansion of their new terminals, and Total for Mozambique, South Korean and Chinese yards have very few slots remaining for 2025 and obviously 2024 is already full.

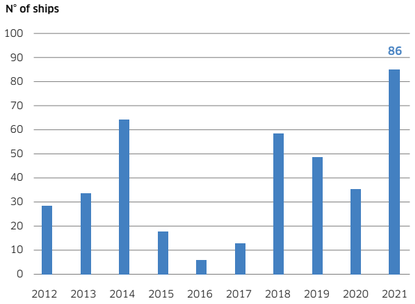
Conventional LNG carriers deliveries and orderbook



LNG carriers new orders

86 large LNG carriers were ordered in 2021, an all-time record. Whereas all orders placed in 2020 were linked to a specific project and/or a long-term contract with a major oil and gas company, 2021 shows a different attitude. Encouraged by the surging prices of newbuildings, shipowners declared their options or decided to place new orders, on a speculative basis which totalled 19 orders.

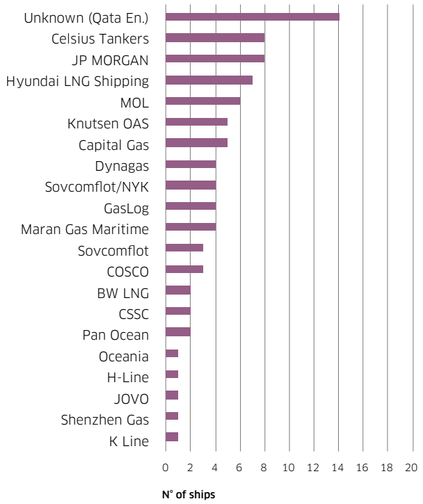
LNG carriers orders



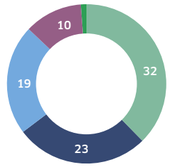
Hyundai Heavy Industries accounted for more than 35% of the orders placed last year and so remains the yard with the largest orderbook with 59 LNG carriers on order (39% of the global orderbook). Then follows, Samsung Heavy Industries and Daewoo which have both registered a similar number of orders, with 23 and 19 orders, respectively. 10 orders were placed at Hudong-Zonghua in 2021, among them, 4 for QatarEnergy and 5 for Chinese owners.

86 large LNG carriers were ordered in 2021, an all-time record

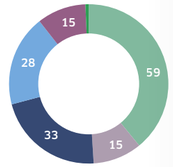
Owners of 2021 orders



Orders in 2021 by yard



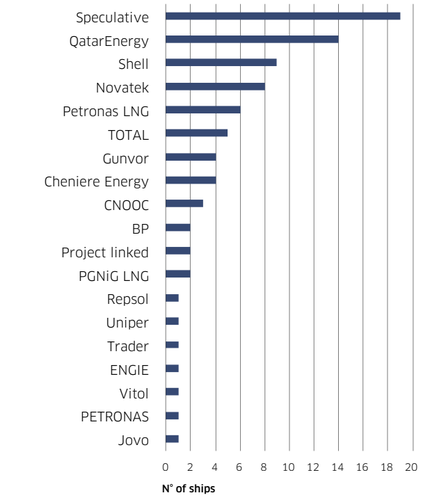
Orderbook in 2021 by yard



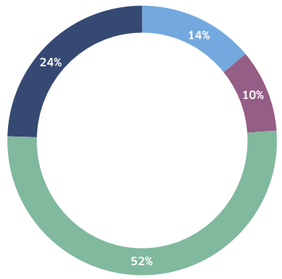
Hyundai · Zvezda · Samsung
Daewoo · Hudong-Zhonghua · Jiangnan

Last year we noticed that the share of the current orderbook to be fitted with XDF slow speed two stroke engine-based propulsion rose to 70%, at the expense of the MEGI-based propulsion. 2021 has seen the spectacular emergence of the new MAN low pressure two stroke engine-based propulsion – the MEGA. Launched mid-2021, the MEGA accounted for 43% of orders placed in 2021 and 24% of the current orderbook, with 37 LNG carriers set to be equipped with the technology.

Charterers of 2021 orders



LNG carriers on order by engine type



MEGA
XDF
DFDE/TFDE
MEGI

The LNG Shipbuilding market saw a very hectic year in 2021. The price level for a 174,000 cbm LNG carrier built to the most modern standards, with slow speed diesel engine-based propulsion, a 0.085% boil-off rate and a reliquefaction/subcooling unit started in the range of $180 -190 million until May 2021 and reached $215-220 million by end-2021. As expected, the Qatari project has provoked a bottleneck for LNG carrier deliveries over 2024-25, with 151 berths reserved. Qatar Energy has already placed 14 orders in the four main yards. Total still hold 16 slots at Hyundai and Samsung, with these options to be declared in March 2022.

LNG Carriers Forecast

By 2031, 202 LNG carriers are required to meet the 5% projected annual increase in LNG demand. This forecast takes into account:

- the current orderbook
- vessels scrapped > 40years
- the speed reduction of steam turbine vessels (ST) to fulfil IMO CO_2 emission regulations

As of 1st January 2022, 134 mtpa of export capacity is under construction. This implies that there is a need for 173 standard LNG carriers.

Terminals	Region	Start up expected	Export capacity mtpa	Gross fleet requirement
Sengkang LNG Train 1	SEA	2023	0.5	0.3
Portovaya LNG (FSU)	Baltic	2022	1.5	1.4
Tangguh LNG Train 3	SEA	2022	3.8	2.1
Tortue West Ahmeyim 1 (FLNG)	WAF	2024	2.5	3.2
Coral South 1 (FLNG)	EAF	2023	3.4	4.7
Calcasieu Pass LNG	USGC	2022	10.0	13.1
Arctic 2 LNG Train 1	Yamal	2023	6.6	8.2
Sabine Pass Train 6	USGC	2022	4.5	5.9
LNG Canada	WCAN	2025	14.0	17.0
Mozambique LNG	EAF	2026	12.9	17.9
Nigeria LNG Train 7	WAF	2024	7.6	9.9
Arctic 2 LNG Train 2	Yamal	2025	6.6	8.2
Golden Pass LNG Train 1	USGC	2025	5.2	6.8
Golden Pass LNG Train 2	USGC	2025	5.2	6.8
Golden Pass LNG Train 3	USGC	2025	5.2	6.8
Arctic 2 LNG Train 3	Yamal	2025	6.6	8.2
Energia Costa Azul	WCAN	2024	2.5	3.0
Pluto LNG Expansion	SEA	2026	4.5	2.5
North Field LNG Expansion Train 1	ME	2025	7.8	10.9
North Field LNG Expansion Train 2	ME	2026	7.8	10.9
North Field LNG Expansion Train 3	ME	2026	7.8	10.9
North Field LNG Expansion Train 4	ME	2027	7.8	10.9
Total			**134**	**173**

Proposed LNG terminal capacity to meet the forecast 5% annual increase in LNG demand over 2022-31 totals 106 mtpa. This would require an extra 138 standard LNG carriers.

In total, LNG export capacity under construction and that proposed would imply a need for 311 extra standard LNG carriers.

Among them, 151 vessels have already been ordered.

However, 13 vessels above 40 years old up to 2031 are expected to be scrapped. Besides, due to the new IMO regulations being introduced in 2023, the steam turbine fleet will have to reduce their speed. This speed reduction implies a need for 29 new standard LNG carriers.

Therefore the net requirement from 2022 to 2031 will be 202 LNG carriers, equivalent to 29 vessels ordered each year over the next 7 years.

STATUS OF TERMINAL	Export Capacity mtpa	Fleet requirement #
Under construction	**134**	**173**
Proposed	**106**	**138**
TOTAL U/C & PROPOSED	**240**	**311**

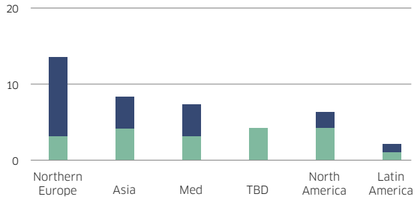
FLEET BALANCE	Vessel #
Orderbook *at end Dec 2021*	**-151**
Expected scrapped vessels	**+13**
Impact of speed reduction *(17kn to 14kn) of ST on the fleet requirement (202# of c. 135k cbm)*	**+29**
Net Fleet Requirement	**202**

By 2031, 202 LNG carriers are required to meet the 5% projected annual increase in LNG demand

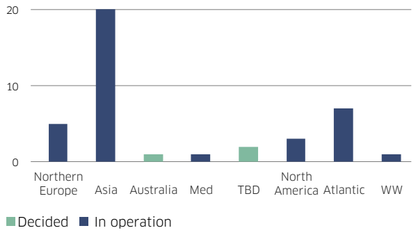
Small Scale LNG

Small scale LNG either for feedering operations or for LNG bunkering purposes has seen strong momentum in 2021 as 12 orders (including 2 LOI by Kanfer) were placed with yards. 21 LNG bunkering vessels are currently in operation while another 19 are under construction. In addition to these vessels, 37 small-scale LNG carriers are in operation with 3 under construction. These LNG feeders can perform bunkering operations but are not equipped with specific bunkering systems.

LNG bunkering vessels



LNG feeder vessels



THE CHARTER MARKET

LNG prices

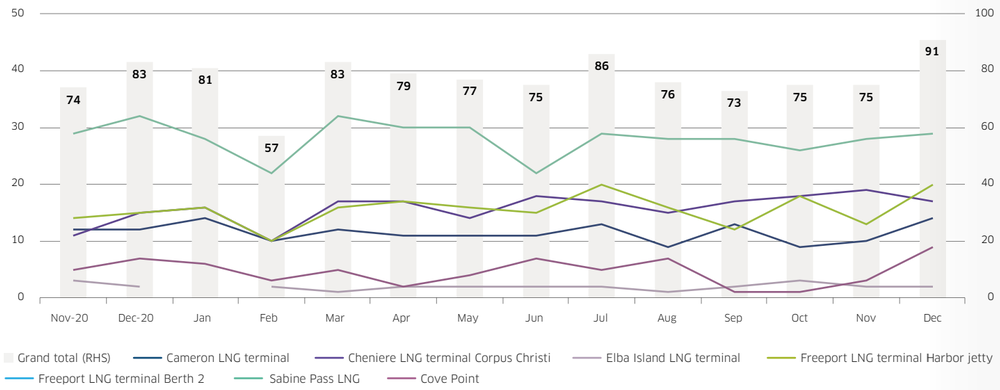
Last year was marked by a significant increase in LNG prices compared with 2020. It was led by the dovetailing of rising energy needs against a backdrop of companies encountering difficulties in increasing supply. On one hand, the rising energy requirements are explained by a cold and long winter of 2020-21 in Europe and in Asia and by the rapid restart of the economy after the Covid crisis in 2020. On the other hand, numerous incidents in gas producing and exporting countries such as maintenance, fires, shortages, diplomatic tensions and electricity production issues triggered a squeeze in world LNG supply.

The year was also characterised by increased competition for gas supplies between Europe and Asia. The latter captured a growing share of LNG imports to the detriment of the former. China has now overtaken Japan as the world's largest LNG importer, while European LNG imports fell by 35% in 3Q21. Meanwhile, China's pipeline gas imports from Russia, Turkmenistan and Kazakhstan increased. Simultaneously, Russia delivered only contractual volumes to Europe, thereby failing to deliver incremental volumes despite firmer European natural gas demand.

The first semester of 2021 was characterised by unseasonably high Asian LNG prices which took strength by post-winter restocking and higher European natural gas prices. Higher than usual (for the season) TTF prices were driven upwards by high carbon prices which promoted natural gas over coal in the power generation sector while further support came from summer injections into European storage. Other bullish momentum stemmed from the shutdown of Hammerfest LNG, the Suez Canal blockage, Australian floods, a fire on one Russian gas pipeline, maintenance in Oman, Qatar, Malaysia and the US.

The second semester saw some particularly notable moves. JKM and NWE prices continued to soar and by end-September stood above $30/MMBtu, around 6 times and 5 times higher than end-March prices, respectively.

LNG cargoes lifted from US in 2021



JKM prices hit a record high on 6 October at $56.3/MMBtu, $16.65/MMBtu above the previous day. However, prices plunged by $20.7/MMBtu the next day. Northwest European prices reached a record high of $58.6/MMBtu on 21 December. Price increases in 3Q21 and 4Q21 were not only driven by normal seasonal demand and restocking ahead of winter but also by continuous strong post-Covid demand and persistent tight supply in the wake of difficulties across the LNG supply chain. Nevertheless, in a rare move, as of 14 December, NWE prices stood above JKM prices. This is explained by low European gas inventories at end-4Q21 which combined with temperatures which dropped to well below normal seasonal levels in late November and early December, led to an acceleration in gas storage withdrawals. Moreover, a vigorous winter in Russia could encourage the country to keep nominating no pipeline gas to Europe for an indefinite period. On the contrary, Asian buyers, such as Korea and China, have high inventory levels to face winter 2021-2022.

Charter rates

In March rates slumped sharply after peaking during the winter. Rates were rangebound around $30,000/day for a 160,000 TFDE and around $25,000/day for a 140,000 steam turbine.

The second quarter is usually a cyclically low period during the calendar year for LNG spot shipping, as Q2 is historically lower than Q1, Q3 and the peak Q4 period. Similar to 2019, the 2020 LNG spot shipping market showed a similar pattern, with prices falling from an average of $90,000/day at the start of the year toward a year-to-date low in the mid-to-high $30,000s/day across both basins by early-March. Nevertheless, stronger than usual demand in 2Q21, led to very busy shipping activity and higher-than-expected rates for the season, despite the relets of portfolio players and the delivery of 27 newbuildings during the first semester. Around 12 mid-term deals were contracted in April, usually one of the least active months. Rates increased for a 160,000 TDFE from $70,000/day in mid-May to $75,000/day end-June; for a two-stroke from $83,000/day to 86,000/day. However, rates decreased for a steam turbine from $55,000/day to $50,000/day.

During 3Q21, LNG prices hit record highs ahead of the northern hemisphere winter peak demand season, but charter rates did not increase. The main explanation was the lack of LNG available to be moved due to strong demand and numerous incidents in the LNG world supply chain. 3Q21 rates were stagnant, around mid-$60,000/day for a 160,000 TDFE, around $80,000/day for a two-stroke, and around $50,000/day for a steam turbine vessel.

4Q21 rates saw a steep increase from early October, from $60,000/day to a record of around $300,000/day for a 160,000 TDFE, reached in early December. Rates rose amid increased levels of spot activity, encouraged by a steep contango, and Panama Canal congestion. Constraints in the Panama Canal for LNG carriers transiting without reservations, increased ton-mile demand, as the tankers were diverted via Cape Horn, or waited for around 9 days to transit the canal.

After mid-December, rates slumped to stand at $80,000/day by the end of the month for a 160,000 TDFE, around $100,000/day for a two-stroke. and around $40,000/day for a steam turbine. The downward trend was driven by easing congestion at the Panama Canal which reduced ton-mile demand, as well as milder temperatures and less demand from Asia.

Conclusion

2021 has been quite active and might be considered as a "year of recovery" after the pandemic. The major Qatari Project has been launched and will impact LNG shipping activity. Some large LNG projects expected to be announced in 2021 were postponed but will resume in the coming years as LNG demand continues to grow. LNG has a promising future as one of the cleanest available sources of energy, which is reflected by the continuous increase in LNG supply and demand. Associated seaborne transportation reflects not only the increase in volumes needed to be transported but also the increase in the ton-mile structure of the LNG trade patterns which, in turn, is leading the unprecedent demand for LNG carriers and an increase in shipping activity.

Picture: T.ENERGY, 174,000 cbm, LNG Carrier, delivered at January 2022 from HHI.

Offshore

The transition continues

The Blue Economy has a fundamental role to play in the quest to mitigate climate change. The solutions required to meet these unprecedented challenges have already been demonstrated by technological innovations and scientific projects. One example is the pioneering Polar Pod expedition. The 100-meter high, zero-emission ecological drifting platform will follow the Southern Ocean's Antarctic circumpolar current, to collect valuable data by measuring the performance of our planet's biggest oceanic carbon sink.

VOLE AU VENT
Wind Turbine Installation Vessel, built in 2013, owned by Jan De Nul.

RENEWABLES

In the run up to the COP26 conference earlier last year, considerable effort was put into asking governments to make further commitments to offshore wind. The industry is seeing continuous growth, driven by maturing technologies and encouraging declining costs. Abundant financing from banks and institutional investors has certainly helped drive this growth.

With the installation of 6 GW in 2020, there is now more than 35 GW of offshore wind capacity deployed globally. This represents an average annual growth rate of over 20% since 2013. A Global Wind Energy Council (GWEC) report in 2021 forecast that over 235 GW of new offshore wind capacity will be added to bring total offshore wind capacity to 270 GW by 2030, a conjecture revised upwards every year, echoing the market's bullish sentiment. Contributing to that upturn, turbines are increasing in size. While projects used to represent 10 units installed with an output of 1.5MW per unit, nowadays, they average 60 turbines of 10-12 MW.

Although the usual dominant regional market is Europe, by 2030, the prospects might see the tide increasingly towards Asia and the US. It's important to point out that Asia, mainly due to Chinese deployments, surpassed Europe in installation numbers back in 2020. China has become a very strong regional market of its own with 3GW connected in 2020, and others including Taiwan, South Korea and Japan are following suite. Taiwan's goal of installing 15.5 GW of offshore wind capacity by 2035 demonstrates the commitment by the country to develop strong regional offshore wind capabilities. South Korea's vast potential is already attracting some of the leading developers. The country aims to generate 20% of its power from renewables by 2030, with a target for offshore wind set at 12 GW, a significant increase from the 124.5 MW the country has today.

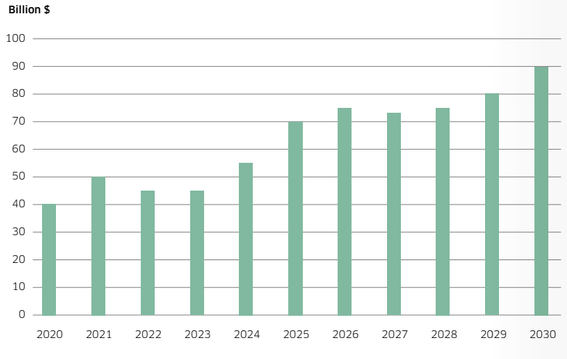
Across the Atlantic, state governments in the US are announcing substantial funding to develop offshore wind infrastructure. The Jones Act-regulated market makes it more costly and complex to mobilize the necessary units to develop offshore windfarms. Accordingly, the country is somewhat lagging in terms of timing for now. New York State aims to build 9 GW of capacity by 2035, the most ambitious target set by a state so far. Among the key projects in the area, the installation of 132 MW Orsted-operated South Fork wind farm should begin soon. Currently, North America has only 42MW of offshore wind deployed but that is bound to change.

Lastly, there are promising signs that the tide is turning in the Mediterranean as Italy and Greece are receiving expressions of interest for project developments in their waters. Greece has already expressed its ambitions to deploy 1.5GW of capacity by 2030.

2021 saw an element of asset play creep into the industry on the back of favourable growth projections and the availability of financing from banks and institutional investors.

Major installation contractors have placed significant trust in the market this year and have placed newbuild orders that reflect an ever-increasing demand to install bigger turbines in deeper waters. Van Oord's new WTIV vessel will be able to operate on methanol and install turbines with a capacity of up to 20MW, in waters up to 70m deep.

Offshore wind capex forecast



Monaco-headquartered Eneti completed the acquisition of Seajack, further boosting its ambitions to become a leading owner of WTIV's. This was unquestionably a strategic decision made to acquire ready-to-work assets with minimal lead time and accelerate their market entry, all-while waiting delivery of their WTIV from DSME. Seaway 7, born from the merger of OHT and Subsea 7, is bringing to the table a unique and enhanced portfolio of assets and engineering services, from the transport and installation of wind turbines to offshore substations, submarine cables and heavy transport.

Cadeler confirmed the order of two Gusto designed NG-20000X units with a 20MW turbine capacity, at COSCO Qidong. China's ambition in the offshore wind installation segment is demonstrated by the first major order placed by Boqiang Heavy Industries to CIMC Raffles, for a 3060 series WTIV, capable of handling wind turbines of up to 20MW and working in water depths of 65m.

Front-running Jan De Nul launched its floating offshore installation vessel Les Alizés at the CMHI Haimen shipyard in early January 2022. They should also take delivery, of the powerful next generation WTIV Voltaire from Cosco Qidong by the end of 2022. It will have an operating depth of around 80m, accommodation for 110 persons and be the very first ultra-low emission vessel of its kind.

The sale of the JDN Taillevent to Shandong Marine Group was a significant transaction in the industry. It can be perceived as a reverse trading shift with the delivery of a Chinese-built modern vessel, from a European prime contractor JDN to Chinese buyers, highlighting the need of urgent tonnage in China.

Taiwan's increased commitment in the sector was reflected by the acquisition by Dong Fang of several assets this year. Notably the Pacific Constructor from Swire Pacific and the Polar Onyx from GC Rieber. The latter will be converted into a cable layer, operational by the end of 2023.

The overall demand for power cable installation services, in-array and export lines continues to increase. Longer delivery lead times and soaring construction costs have triggered several acquisitions of high specification OCVs such as the Viking Neptune by DEME.

On the construction support and maintenance side, the Service Operation Vessel fleet dedicated to renewables has been consistently growing over the past couple of years, marking a clear shift from oil and gas vessels to renewables. REM's new hydrogen-ready vessel, Rem Energy, was the first of three delivered last December with options for two more. North Star, a newcomer to offshore wind, will build and operate three Vard designed SOVs for the Dogger Bank Wind Farm.

Edison Chouest is pioneering the SOV segment in the US, with the execution of a long-term charter agreement with Orsted for the first-ever US flagged "Jones Act" compliant SOV, for Operation & Maintenance to be operated off the Northeast coast.

The Floating Offshore Wind energy market is gaining momentum. As of 2020, around 75MW of floating wind generation capacity was installed globally, of which 32MW was located in the UK and the remainder in Portugal and Japan. The most remarkable improvement is the average capacity factor seen in floating turbines, which can be as high as 55%, compared with conventional bottom-fixed ones which are around 40%. Technologies are still maturing, and most projects remain at pre-commercial stages, but progress is being made towards large-scale deployments, with 16.5 GW of FOTs expected to be built by 2030, up from 6.5 GW forecast in 2020.

This new market will also bring some challenges due to the increasing distances from shore to their locations, which could tighten the supply of tonnage but also provide additional opportunities for traditional OSV owners.

The need for more environmentally efficient vessels will be the next big challenge to overcome. A challenge the Crew Transfer Vessel segment is keen to tackle. Being a short sea market with daily return trips, along with an ageing fleet, owners are at the forefront for testing green fuels or retro-fitting with battery packs and shore-power connections to reduce their emissions. Still, the current availability and price of these emission reduction solutions makes them difficult for widespread adoption.

The possibility of offering the renewable energy industry a safe and efficient one-stop-shop installation solution is not to be discounted and the potential for Engineering Procurement and Construction is wide. Installation and development today is very much dominated by European and Chinese firms but without a doubt, there is room for fresh players to come in and serve their regional markets.

Overlapping the renewable and the traditional oil and gas sectors, the heavy lift segment is now seen as a critical one over the coming years. However, the global fleet will be insufficient to meet rapidly increasing demand. It has already paved the way for the conversion of large oil and gas vessel units such as the crane vessel Bokalift 2 which was converted from a drillship.

***Picture: HAWK**, Semi-submersible, offloading Oldendorff barges in Rotterdam. Photo: Van de Graaf & Meeusen Group.*

There remains renewed enthusiasm for big offshore exploration projects

OIL AND GAS

The attractiveness of the energy sector is unchanged but the focus on oil and gas has become a source of disagreement amongst many industry stakeholders. Energy (previously oil and gas) majors are adapting by diversifying their portfolio to match the energy transition. That being said, oil and gas remain pillars of the energy mix today, and in years to come, and despite exiting a pandemic-induced multi-year downturn, there remains renewed enthusiasm for big offshore exploration projects. The requirement to replace drained reserves from years of underinvestment persists and Offshore remains a major source of long-term replacement barrels.

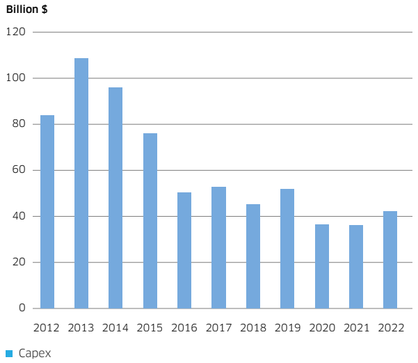
A renewed enthusiasm for capital expenditure in larger offshore projects is noticeable after seeing spending bottom out. We expect this trend to continue until at least the end of the decade, matching projected increases in oil consumption. More projects are reaching their Final Investment Decision phase buoyed by stable and elevated oil prices. Cash flow is king for producers and spending is expected to be focused on the biggest return on investment projects.

The market for FPSO units rebounded strongly in 2021 after being hit by the pandemic in 2020 and this rebound is likely to continue across 2022. This suggests that market leaders such as SBM, MODEC, MISC and BW should fare well while outsiders such as Yinson should also benefit. Despite this abundance of good news there will be trying times ahead as unit construction costs have soared in line with firmer shipyard costs.

We expect to see continued expansion going forward, especially in the Golden Triangle (Brazil/Guyana, GOM, West Africa).

Brazil is the most proactive for production development campaigns. There were 7 awards in 2021, an additional 3 are expected in 2022, and at least 5 more before 2025. Delays in spending because of coronavirus-led uncertainties in 2020 are now turning into a boost in investments to lift supply, as demand returns.

International Majors E&P Capex



*Picture: **CORAL-SUL**, floating liquefied natural gas vessel, engineered and built by Technip Energies, JGC and Samsung Heavy Industries, operated by Eni.*

Worthy of note is that most of the Brazilian market dedicated PLSVs were renewed by Petrobras in 2021.

ExxonMobil is furthering its commitment in Guyana, awarding contracts for the Yellowtail project. This will be the fourth FPSO deployment in the country and it was awarded to SBM, for whom it will be their biggest unit built to date (250,000 barrels of oil per day production capacity).

In Angola fiscal changes are stimulating renewed investment. Total is notably picking up the pace with the Ondjaba prospects being drilled, CLOV Phase 2 coming online, and an award for the Cameia-Golfinho FPSO due shortly.

Major oil and gas EPC players are aligning their strategies for the energy transition, shifting towards cleaner energy segments for future growth. Some have restructured their businesses to create dedicated units for low-carbon projects, targeting segments such as offshore wind and carbon capture and storage. The acquisition of Ideol by BW Offshore is a good example of traditional offshore leaders leveraging their expertise in the industry, to diversify into promising sectors.

In the drilling segment, the marketed utilization rates are finally back in the 70% range for jackups, and 80% range for floaters, numbers not seen since 2015 at the very beginning of the downturn. The drilling industry has changed significantly over the last six years, but we can say with certainty that this downcycle is behind us. Overall, market dynamics are improving and the cash harvesting part of the cycle has begun. Drillers with most of their debts erased are producing positive cash flow, and they will continue to do so in the short and medium term.

All the big drillers, bar Seadrill, are now clear of the restructuring processes that consumed a major part of the last 24 months. The consolidation of the industry started in 2018 and continues with 3 big international players emerging in the floater/mixed asset space: Valaris, Transocean and Noble. The latter has announced a merger with Maersk Drilling, demonstrating that consolidation is still ongoing.

The supply of the overall fleet should see less drastic changes in the years to come than in previous years. In 2021, 52 units were retired, and 15 were delivered. Only 33 units remain undelivered whilst the pace of retirement should remain below 30 units per year going forward.

Interest has grown from other offshore markets to repurpose modern drilling assets: Wind, deep-sea mining, and heavy lifting. All have proven that with some creativity and ingenuity, drilling rigs can be a price - and time-efficient solution, although engineering-intense, to obtain a ready-to-work asset with minimal lead time.

*Pictures: **HOLMEN PACIFIC**, Vallianz Submersible Launch Barge, built in 2012;*
***VALARIS DS-16 RESOLUTE**, Drilling unit built in 2014. Photo: Courtesy of Valaris Group;.*

LOGISTICS AND MOBILITY

Owners and operators expect that those steadily increasing utilization rates will turn into significantly higher charter rates by end-2022

Thanks to a barrel that consistently traded upwards throughout the year, a positive sentiment could at last be felt in the industry again, encouraging majors to slowly re-activate frozen projects, generating traction and activity in the market.

On their side, OSV owners continued their strategy and efforts to reduce overcapacity and help them return to profitability. Their methods remained unchanged with rare reactivations of cold stacked tonnage, sales or deployments in non-competing segments and disposal (by sale or scrap) of their non-core fleet, in parallel seeking employment in the renewables sector.

On a year-on-year basis, the North summer 2021 spot market saw an increase of 50%.

Owners and operators expect that those steadily increasing utilization rates will turn into significantly higher charter rates by end-2022. Charterers seem to be anticipating this as more and more term contracts are awarded.

Despite these improved levels of activity, some owners or contractors have entered the next phase of their financial restructuration seriously testing their resilience. Edison Chouest (US) filed for chapter 11 at the very end of year; Vroon's banks in return for their debt write off, became majority shareholders; K-Line decided to disband their offshore company after too many years of losses. On the other hand, the situation favoured solvent fresh players to step in, by buying cheap vessels against contracts with good returns.

Siem (Norway) sold two AHTS to Les Abeilles International (France). These vessels will ensure duty patrols and salvage services along the French coast. A handful of large PSVs left the fleet since they are to be converted into maintenance and support cable laying vessels.

In the mobility segment, after almost a decade of no investment, owners started to renew their fleets with a new generation of larger crewboats offering greener and more comfortable services. Bourbon ordered a first batch of three crewboats at the Allais Shipyard in France, contemplating a series of up to 38 units.

In the subsea construction market, 2021 has seen the end of a cycle of distressed sales. After most exited financial restructuration, OCV owners could long-term time charter their remaining open tonnage. They are more and more resistant to part from tonnage that they initially intended to operate over their entire life span.

The prevailing utilization rate of the fleet has already triggered some rates improvement.

As one of the major offshore fleets, the OSV fleet which often trades short sea, is directly exposed to the IMO and EU requirements for the decarbonation of shipping activities.

Owners are getting more and more support from charterers by means of long-term contracts, higher rates and direct subsidies, to meet reduced, operations-related, carbon footprint objectives. Investments concern mainly the existing fleet. They are favouring battery retrofits, alternative dual fuel upgrade and remote vessel monitoring and management systems.

Digitalization is equally key, with the development of powerful fleet management cloud-based software to help optimize their operations.

*Picture: **SIEM DIAMOND**, Anchor Handling Tug Supply, bought by Les Abeilles International.*

Conclusion

The offshore wind market is now a major focal point amongst industry players. The significant milestone that highlights this transition is the development of major projects, that intend to be economically balanced, in part thanks to economies of scale enabled by increasingly bigger turbines. In effect, wind development shall in the end no longer require subsidies, leading to a decrease in the levelized cost of energy.

In the meantime, one of the major concerns remains the labor and capital resources available and employed across the offshore industries. Seasoned seafarers and qualified tonnages (Vessels) are becoming a preoccupation and ultimately, these dynamics shall lead to a widespread increase of rates.

The offshore wind market is now a major focal point amongst industry players.

*Picture: **POLAR POD** and supply sailboat **PERSÉVÉRANCE**.*

Cruise

A revival year?

2021 has been another very difficult year for the cruise industry.

The Covid pandemic has continued to profoundly disrupt the market although by the end of the year there is some hope of a return to a better situation in 2022. Massive vaccination campaigns against Covid plus that the new Omicron virus seems less dangerous, albeit ferociously contagious, led to some reasoned optimism by year-end. Nonetheless, significant challenges remain before a full swing back to a sort of normality.

OCEAN EXPLORER
77 cabins, delivered to clients of Sunstone by CMHI China in July 2021.

Significant challenges remain before a full swing back to a sort of normality

DELIVERIES

In our book, 23 units above 3,000 gt were delivered in 2021.

Name	Builder	GT	Cabins	Company
Sh Minerva	Helsinki Shipyard	10,700		Swan Hellenic Cruises
Coral Geographer	Vard Vung Tau	5,602		Coral Expeditions
Ocean Explorer	Cmhi Jiangsu	8,228	93	Sunstone Ships
National Geographic Resolution	Ulstein Verft	12,786		Lindblad Expeditions
World Navigator	West Sea	9,923		Mystic Cruises
Ocean Victory	Cmhi Jiangsu	8,181	93	Sunstone Ships
Viking Octantis	Vard	30,114	92	Viking Ocean Cruises
Ultramarine	Brodosplit	13,762	103	Quark Expeditions
Silver Dawn	Fincantieri	40,844	298	Silversea Cruises
Hanseatic Spirit	Vard	15,651	120	Hapag-Lloyd Kreuzfahrten
Le Commandant Charcot	Vard	31,283	135	Ponant
Msc Seashore	Fincantieri	170,412	2,000	Msc Croisiere
Rotterdam	Fincantieri Breda	99,935	1,330	Holland America Line
Viking Venus	Fincantieri	47,842	465	Viking Ocean Cruises
Crystal Endeavor	Mv Werften	20,449	100	Crystal Cruises
Valiant Lady	Fincantieri	108,192	1,430	Virgin Voyages
Msc Virtuosa	Atlantique	181,541	2,444	Msc Croisiere
Odyssey Of The Seas	Meyer	167,704	2,090	Royal Caribbean Group
Golden Horizon	Brodosplit	8,784	150	Uncommitted
Costa Toscana	Meyer	186,364	2,605	Costa Croisiere
Aidacosma	Meyer	183,664	2,605	Aida Cruises
Sea Cloud Spirit	Metalships	5,431	69	Sea Cloud Cruises

*Picture: **COMMANDANT CHARCOT**, delivered by Vard to Ponant in 2021. Photo: ©PONANT, Ian Dawson.*

SECOND HAND SALES

Forced inactivity with ships laid up heavily impacted cruise operators' accounts and pushed some to throw in the towel. Accordingly, Jalesh Cruises and Ocean Builders terminated their activity. Meanwhile, others had to continue culling their fleets.

In 2021 we noted the below deals:

Name	Blt	Builder	Gt	Cabins	Seller	Buyer
Majesty Of The Oceans	1992	Atlantique Chs	74,077	1,175	Rccl	Seajets
Pacific Dawn	1991	Fincantieri Monfalcone	70,285	798	Ocean Builders	Ambassador Cruise Lines
Empress Of The Seas	1990	Atlantique Chs	48,563	805	Rccl	Cordelia Cruises
Viking Sun	2017	Fincantieri Ancona	47,842	465	China Merchants Group Ltd	China Merchants Viking Cruises
Aidacara	1996	Kvaerner Masa-Yards - Turku	38,557	590	Carnival Corp	Russians
Pacific Princess	1999	Atlantique Chs	30,312	351	Carnival Corp	Sycamore Partners/ Azamara
Azamara Journey	2000	Atlantique Chs	30,277	351	Rccl	Sycamore Partners
Azamara Quest	2000	Atlantique Chs	30,277	351	Rccl	Sycamore Partners
Azamara Pursuit	2001	Atlantique Chs	30,277	351	Rccl	Sycamore Partners
Rcgs Resolute	1991	Rauma Yards Oy - Rauma	8,445	94	Auction	Heritage Expeditions
Silver Galapagos	1990	Ferrari	4,203	50	Rccl	Royalton
Crystal Esprit	1991	Flender	3,370	33	Crystal Cruises	Lindblad Expeditions

DEMOLITION

When no reliable trading buyer was to be found, the only alternative was for the vessels to be scrapped.

In 2021 the below deals were reported:

Name	Blt	Builder	Gt	Cabins	Seller	Recycling Country
St Victoria	1996	Bremer Vulkan Werft	75,166	964	Genova Industrie Navali	Turkey
Century Harmony	1994	Kvaerner Masa-Yards - Helsinki	70,538	1026	Century Harmony	India
Columbus	1989	Atlantique Chs	63,786	793	Seajets	India
Antares Experience	1993	Fincantieri Venice	56,769	678	Middle Eastern	India
Magellan	1985	Aalborg Vaerft A/S	46,052	726	Seajets	India
Boudicca	1973	Wartsila Ab - Helsinki	28,551	437	Fred Olsen	Turkey
Albatros	1973	Wartsila Ab - Helsinki	28,518	442	Phoenix Reisen	India
Mira 1	1989	Mitsubishi Kobe	23,235	164	Far Eastern	Pakistan
Oriental Dragon	1972	Wartsila Ab - Helsinki	18,455	271	Far Eastern	Pakistan
Starry Metropolis	1976	Wartsila Ab - Turku	15,791	250	Far Eastern	India
Leisure World	1969	Weser Ag Seebeck - Bremerhaven	15,653	167	Far Eastern	India
Amusement World	1967	Lindholmens Varv	12,764	54	Far Eastern	India
Funchal	1961	Helsingor Skibsvaerft + Maskin	9,563	241	Portuguese	Turkey

MARKET DEVELOPMENTS AND PERSPECTIVES

Another very difficult year for the cruise industry induced companies to sell some additional ships or to sell some of their brands such as Azamara which went to private equity firm Sycamore Partners.

We also noted the mounting difficulties faced by Genting Hong-Kong which control cruise brands Star Cruises, Dream Cruises, Crystal Cruises and two German shipyards MV Werften and Lloyd Werft.

These difficult market conditions created opportunities for several new operators including Ambassador Cruises and Cordelia Cruise.

Based on already existing newbuilding contracts at Helsinki Shipyard, one also saw an ancient and famous brand revival with Swan Hellenic.

The Australasian market remained at a complete standstill as the pandemic continued to halt cruise vessels from sailing.

The Chinese market on which many hopes were laid for the future growth of the industry has been totally absent with extremely stringent sanitary measures imposed by the Chinese authorities on the whole country.

A silver lining was starting to be visible by the end of 2021 as many cruise companies have started their operations again although with a path full of pitfalls on the logistical side of things.

2022 may nevertheless be another transition year with Covid clusters and new variants emerging unexpectedly here and there and sanitary protocols still in force in the enclosed spaces that are cruise ships.

According to bookings reported by the cruise companies, the appetite for cruise holidays is very robust and as soon as the pandemic will be under reasonable control, cruise activity should rebound quite strongly and with a somewhat leaner and more modern global fleet. This should grant companies a much better pricing power, but it may take another 12 to 18 months before the market recovers to pre-pandemic levels.

Conclusion

Cruise operators still remain faced with substantially increased operating costs, weakened balance sheets and a heavy debt burden. This may lead to continued difficulties and divestments over the course of 2022.

Also, not to be forgotten, there are the more and more stringent environmental regulations being progressively imposed on the ships and perhaps prompting the asking of deeper questions about the merits of mass tourism in the light of global warming and destinations' acceptance.

2022 may nevertheless be another transition year

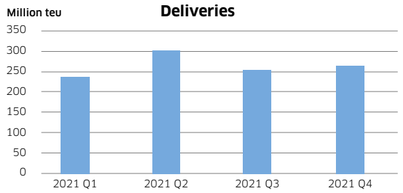
*Pictures: **MSC VIRTUOSA**, delivered by Les Chantiers de l'Atlantique to MSC in 2021. Photo: Les Chantiers de l'Atlantique.*

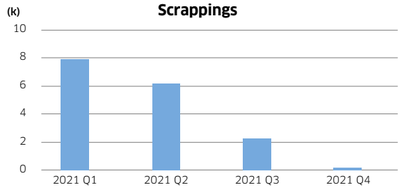
2021: an extraordinary year for container shipping

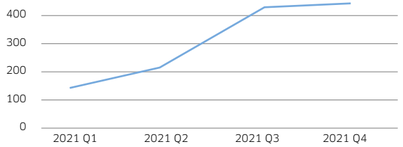
2021 was a historic year for container shipping. Non-Operating Owners (NOOs), liner operators and freight forwarders have all benefitted from an exceptional trading environment, enjoying the extraordinary post-Covid demand bonanza. However, this was a less rosy time for shippers who had to deal with a chronic dearth of capacity, prohibitive transport costs and massive shipment delays.

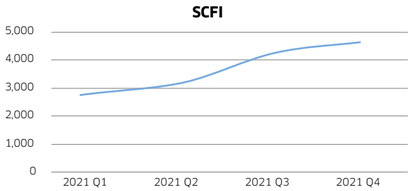
At 23,992 teu, the **EVER ACE** became the largest container vessel in the world when delivered in July.

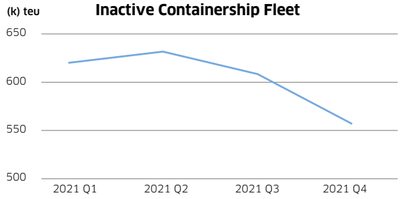
Photo: Finn Fuhrmann











CHARTER MARKET

Non-Operating Owners have enjoyed an extremely strong demand for tonnage throughout the year, for virtually all sizes of ships. Although the recovery had already started in the summer of 2020, the rally gained further momentum in the first half of 2021, and went into overdrive from July onwards. In August and September charter rates reached levels unseen in the history of container shipping.

A two-tier market emerged, with a multi-year market on the one hand seeing most fixtures concluded for durations of 36, 48 and 60 months at historically high, five-digit, rates and, on the other hand, a short-term market seeing astronomical six-digit rates agreed. In early September a 4,250 teu 'Classic Panamax' unit was fixed at a jaw-dropping $200,000/day for a 2-3 month employment, an absolute all-time high.

A stellar year for liner operators

Liner operators have recorded historic results in 2021, posting earnings in the billions, on the back of unprecedented cargo volumes and historically high freight rates. The financial gains achieved, higher than those seen when the recovery started in 2020, were boosted by the most profitable peak cargo season on record.

The third quarter of 2021 was the best quarter ever in the history of container shipping. Illustrating this, French liner shipping giant CMA CGM recorded a net profit of $5.6 BN during this period, ten times higher than its 3Q20 results and 125 times the $45 M profit recorded in 3Q19. In Asia, South Korea's HMM posted a $1.9 BN gain, wiping out in only three months two thirds of the $3 BN losses it had accumulated since 2016. Others like Ocean Network Express (ONE) who logged $6.7 BN profit for the first half of 2021 and expect a mind-blowing total profit topping $12 BN for the whole year, nearly four times their 2020 performance! Finally, Singapore-based PIL, on the brink of bankruptcy in 2020, said it would be able to complete its $1 BN debt restructuring by the end of 2021, well ahead of schedule and is now embarking on newbuilding projects.

Globally, Alphaliner estimates that the ten leading carriers reporting public results could be on track to log operating profits of $115-120 BN for 2021, more than six times the amount recorded in 2020.

Despite this rosy environment, most liner operators suffered from a severe shortage of charter ships throughout the year, preventing them from meeting their tonnage requirements or starting new services. This prompted a number of shipping lines to purchase vessels instead, in order to shelter from the charter market uncertainties. MSC raided the sale and purchase market, buying a whopping 140 ships over twelve months. CMA CGM was also busy adding around 50 ships to its own fleet. Other shipping lines such as Wan Hai or T.S. Lines were also particularly active on the acquisition front.

Carriers were also hit by soaring bunker prices throughout the year, as well as crippling congestion issues on the US West Coast, although some operators managed to minimize the impact on their businesses.

Freight forwarders and shippers take control of their shipments

Freight forwarders have been battling hard the entire year to find transport capacities for their shipper clients. Some of them, such as DKT Allseas, Ellerman, Transfar Logistics or RIF Line were forced on many occasions to hit the market and charter ships themselves, usually for a few months at a time, rather than entrust lines with their volumes as they would usually do. The lack of prompt

tonnage forced some freight forwarders to fix the few available ships at astronomical time charter rates going up to $200,000/day for 4,000 teu units, $150,000 for 3,000 teu vessels and $120,000 for 1,800 teu ships. Never had such charter rates been seen in the past,

However, the historically high level of spot container freight rates, with the Shanghai Containerized Freight Index (SCFI) smashing records throughout the year and reaching an all-time high at 5,046 points on 31 December, more than sixfold its December 2019 level, guaranteed voyage profitability. Shipping a 40' teu container from Shanghai to the US West Coast in December 2021 cost $7,600 versus $1,405 in December 2019. On the Asia-Europe trade, a 20' teu box cost $7,700 versus $760 two years earlier, a tenfold increase.

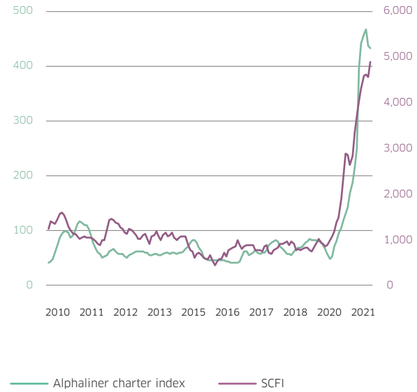
That being said, massive congestion issues, especially on the US West Coast saw charter costs spiral out of control, significantly denting voyage revenues.

Although freight forwarders did their best to secure transport capacity for their clients, some shippers lost patience and decided to take control of their shipments themselves in order to safeguard their supply. Big retail names such as IKEA, Amazon, Coca Cola, Walmart or Home Depot hit the market, trying to find carriage solutions directly with shipowners. Whilst very few of them chartered ships on their own, they entrusted their cargo volumes to non-liner shipping companies, most often multi-purpose or dry bulk operators. Amazon for example gave some cargo volumes to dry bulk operator G2Ocean, while Walmart had cargoes carried by forest product specialist Saga Welco AS.

Although these unusual shipment solutions have been of great help, 2021 will remain a painful year for shippers. Most had to face a shortage of transport capacities, prohibitive cargo rates and huge shipment delays caused by endemic port congestion issues, particularly on the US West Coast.

SCFI vs Alphaliner charter index 2010-2021

Comparative evolution of both indices



Why was demand so high in 2021?

The historic demand for container shipping in 2021 was caused by several factors. Firstly, the Covid pandemic saw consumers shifting their expenses from services to goods. Despite the lifting of lock downs around the world and a relative easing of travel restrictions, consumers have continued to buy goods in large quantities at the expense of services.

With most goods sourced from Asia, demand for container shipping went through the roof nearly overnight. Supply chains around the world could not cope with such exceptional volumes and started facing bottlenecks in various major places, both inland and in ports. In the US, the ports of Los Angeles and Long Beach, which account for 40% of all seaborne imports to the country faced severe congestion issues with, at some point, more than a hundred vessels waiting at anchor for an available berth. Port congestion quickly became a global issue with, at some point, 2.5 M teu of capacity estimated held up at ports around the world. This sizable removal of capacity from the market was the second major factor stimulating demand for container tonnage as carriers had to use charter vessels to cover positions unfilled by their own ships, or simply address the extra cargo demand.

Container operators: a lot of newcomers

The exceptional cargo demand throughout 2021 prompted a number of smaller regional container operators to foray into the highly profitable East-West trades. Among them were the Chinese regional carriers CULines, BAL Container Line and Shanghai Jin Jiang Shipping (SJJ) who started adhoc Asia-US West Coast, Asia-Europe, Asia-South America or Asia-Australia services, surfing on the highly remunerative freight rates and large volume overflows.

These carriers have however been badly hit by congestion issues on the US West Coast, with BAL having had a couple of ships waiting off Los Angeles/Long Beach in excess of two months before getting a berth for cargo discharge. With tonnage usually fixed at astronomical rates, accumulated charter costs have quickly spiraled out of control.

Congestion: a major headache for shipping lines

One of the most visible signs of the disrupted global supply chain was terminal congestion, which started affecting ports around the world in June. The US West Coast was hit the most with queues of ships gradually building up off Los Angeles and Long Beach during the second half of the year. In early December, in excess of 100 container vessels were waiting for a berth outside the twin US ports, with waiting times in some cases exceeding 18 weeks! The reasons behind this unprecedented bottleneck were numerous: exceptional high volumes of cargoes, a shortage of dockers, rigid working times on the docksides, a dearth of truck drivers and congested stacking areas. Meanwhile, ports in China also witnessed congestion, so did some ports on the US East Coast (notably Savannah) and in Europe. By early 2022, congestion in Los Angeles and Long Beach had barely eased, suggesting further months of troubles ahead for carriers.

The ill-timed grounding of the Ever Given

The much-publicized grounding of the giant container vessel Ever Given (20,388 teu) in the Suez Canal in March could not have happened at a worse time. The ship blocked the waterway with its bow and stern lodged into the canal's banks for a week, wreaking havoc on ocean liner schedules and led to a massive backlog of ships. It was estimated that 400 vessels of all types were blocked at the Canal entrances in the Mediterranean and Red Sea one week into the incident, among which numerous container vessels stuck with their cargoes on board. Despite the chaos, only twenty boxships were believed to have been re-routed via the Cape of Good Hope but the incident disrupted further the global supply chain which was already under severe pressure due to the high post-pandemic cargo demand.

Box spot rates and charter rates in synchronized rise

The synchronised rise of the SCFI and the Alphaliner Charter Rate Index (ACI) observed in the last quarter of 2020 continued throughout 2021.

However, whilst the ACI reached its historic peak in October at 467 points, the SCFI continued rising after a softening period, to reach an all-time high of 5,046 points on 31 December.

The Chinese export industry benefited from robust Covid pandemic-related demand, with shipments overseas in 2021 rising by about 30% compared with 2020. This extra flow of cargo pushed shipping rates to historical highs, with freight prices exacerbated by a shortage of ships and congestion issues around the globe.

Meanwhile, the ACI continuously smashed records during 2021, reflecting the uninterrupted rise of the charter market. From a low of 130 points at the beginning of 2021, the index reached a peak of 467 points in October, an all-time high. It then softened slightly before beginning to recover in the last days of the year.

Outlook for 2022

Although the container charter market started recovering in August 2020, as the world economy slowly exited Covid lockdowns, the real 'takeoff' only took place in 2021.

The first few months of 2021 saw charter rates initially rise at a brisk, but not exceptionally high pace. The market then abruptly picked up, with charter rates soaring exponentially from July onwards. With hot-boiling demand impacting all sizes of ships and supply getting increasingly thin, NOOs started obtaining rates for their ships that would have been unimaginable a few months earlier. Most fixtures were concluded for multi-year durations, typically up to 48 and 60 months for the larger vessels and 24 to 36 months for the smaller ones. A short-term market, for employments of typically 2-3 months also emerged in response to a strong demand for ad-hoc liner sailings.

Charter rates smashed records with every new fixture. Short duration deals in particular were concluded at historic, six-digit figures. The Alphaliner index meanwhile reached an all-time high in October at 467 points, up 259% from its January level, and a mind-blowing 567% higher than its June 2020 low, at the peak of the Covid pandemic. On average, charter rates for all sizes of ships increased three-to-fourfold between January and October 2021.

Short-lived softening

Despite a slight softening observed in the first weeks of November, the charter market has since rebounded. The outlook for 2022 remains bright for NOOs, as the market dynamics are unlikely to change in the coming months. Supply will be tight throughout 2022, especially for the larger units, as a substantial portion of the NOO fleet is now locked into long term charters extending well beyond 2022. In addition, the idle fleet remains low, with 42 ships for 150,000 teu commercially idle in early December, half of the January 2021 figure.

*Picture: **YARA BIRKELAND**, 120 teu, the world's first zero-emission container vessel. Photo: Yara International.*

Demand is expected to remain strong with a common view among the liner shipping operators that the current high cargo volume environment will continue until at least July 2022. Congestion issues around the world, which are unlikely to ease in the foreseeable future, will also contribute to supporting demand in the short term.

However, the second half of 2022 appears more uncertain while 2023 could be a very different year, with a raft of newbuilding container vessels due for delivery that could destabilize the market.

VLCS 7,500-11,000 teu

2021 review

The 'handy' VLCS segment (7,500-11,000 teu) was in high demand throughout the year. However, the dearth of prompt tonnage considerably restricted the volume of activity, with charterers forced to consider forward positions into 2022 to cover their needs. Charter rates have been on an uninterrupted rising trend, with 8,500 teu vessels starting off the year at $38,500 and reaching nearly $58,000 by August for 36 months charters. The length of period employments meanwhile gradually increased from 38 to 48, and then 60 months. In September a pair of 9,400 teu 'Bosphorus Max' units were fixed for 60 months at $65,000/day, a new high. A short-term, high-priced, market also developed, which saw a 10,000 teu unit obtaining a healthy $126,000 for 12 months, while an 8,800 teu unit fetched $180,000 for a six-months employment.

2022 outlook

Prospects for NOOs remain strong for 2022, as supply is expected to remain limited throughout the year. Meanwhile, as of 31 December, the orderbook stands empty.

A possible slow-down in demand from the second half of 2022 onwards is not expected to materially impact this segment, which remains in short supply and continues to be popular among carriers. However, with the market increasingly biased towards slightly smaller 7,000 teu units, or larger ones of 12,000 teu and above, the longer-term prospects of these 'in between' sizes appear unclear. The versatility of 7,500-11,00 teu ships, which allows their deployment on multiple long-haul or regional trade routes is certainly an asset, but the economies of scale obtained with larger units, especially where the volumes remain available, or the savings achieved by slightly smaller but more efficient vessels, could undermine their economics. That could explain, in part, the current lack of newbuilding projects.

LCS 5,300-7,499 teu

2021 review

The LCS segment (5,300-7,499 teu) was equally in high demand throughout 2021, but the scarcity of prompt tonnage significantly limited the volume of activity. Meanwhile, charter rates more than doubled over January to October, rising from $29,000 to $62,500 for standard 5,500 teu units, depending on the period fixed. Modern wide-beam tonnage enjoyed the same bonanza with rates soaring from $29,000 to $69,000 depending on the durations agreed. There were also a number of short charters, some of which were concluded in excess of $100,000/day.

2022 outlook

This segment went through a slight softening in November which coincided with the end of the peak cargo season. However, this was short-lived, with the market having since rebounded. Prospects for 2022 remain strong for NOOs as the availability of ships will remain low throughout the year. The orderbook, although consisting of 86 ships, is not an issue for now, since only ten units are currently believed to be uncommitted, and most vessels will only hit the water in 2023-24.

Meanwhile, a potential slowdown in demand in the second half of the year is not expected to heavily impact this segment, considering the persistent supply issues and the continued interest of charterers for this size of ships.

Of note, a highlight of the year was a wave of orders for a new family of compact, wide beam, 7,000 teu vessels, with 52 orders placed to date, according to Alphaliner data. These ships, most of which already have assignments in place, will contribute to the rejuvenation of this segment and could become the new 'workhorses' of the charter market in this size range.

Classic Panamax 4,000-5,299 teu

2021 review

Classic Panamaxes (4,000-5,299 teu) remained highly popular with charterers in 2021, with demand showing no signs of weakening throughout the year, while prompt ships were largely sold out. Charter rates more than doubled in the first six months, rising from $22,000/day for 24 months deals in January to low-$50,000/day for 36 months fixtures in August.

From June, 60-month fixtures became common, while a spot short-term market appeared, with rates reaching six-digit levels for charters of up to six months' duration. Some fixtures saw stratospheric prices being agreed such as the $200,000/day obtained by the 4,253 teu Synergy Oakland for a 60-80 day employment, an all-time record.

2022 outlook

Once considered obsolete further to the opening-up of larger locks at the Panama Canal, Classic Panamaxes have undergone a remarkable renaissance in recent times, having found a new lease of life on several North-South routes as well as on regional trades, particularly in Asia. We believe this class of ships will remain in high demand in 2022, especially in the first half of the year. Meanwhile, charter rates are expected to stay at historical highs but might soften in the later part of the year as supply rises. The orderbook is nearly empty, with only 18 ships of 4,600 teu on order for a Chinese owner, that are not expected to be traded on the charter market.

Over the longer term, Classic Panamaxes will increasingly face competition from new families of 5,000, 6,000 and 7,000 teu compact fuel-efficient newbuildings that might prove more cost-efficient to operate on high-volume routes.

3,000-3,500 teu

2021 review

The 3,000-3,500 teu niche segment is popular with charterers, who particularly value this size of ships for some specific North-South and regional trade routes. 2021 was no exception with continuous demand for such tonnage, but

very few ships available for charter. The short supply of tonnage pushed charter rates to record highs, with standard 3,500 teu units fixable in August at $45,000/day for 36-months charters, up from $20,000/day at the beginning of the year. A short-term market meanwhile appeared in June, with sky-high, six-digit, rate levels being commonly agreed. Illustrating this was the fixture of the 3,091 teu MINNA for a five-month employment at a mid-blowing $150,000/day.

2022 outlook

Vessels of 3,000-3,500 teu are expected to remain in high demand in 2022, but the short supply of tonnage will limit the fixing possibilities for charterers, at least in the first half of the year. These ships are relatively insulated from any potential downturn as they are usually chosen for deployment on specific routes. As such, charter rates should remain high, albeit possibly softening in the second half of the year as supply rises. The orderbook, which currently consists of 67 vessels is meantime of little concern, since the dozen ships due for delivery in 2022 all already have employment in place. However, this might result in some charter market tonnage being displaced and redelivered to their NOOs.

2,700-2,900 teu

2021 review

The 2,700-2,900 teu segment performed very well in 2021, with demand consistently outstripping supply. This caused charter rates for standard tonnage ('Mipo 2800' – 'Aker CS 2700') to double from $19,000/day at the start of the year to $40,000/day in October, for charter employments of 36 months. Fuel-efficient 'Chittagong Max' tonnage recorded even higher figures, with one 2,756 teu 'MARIC 2700' unit obtaining in October a very healthy $54,000/day for a 30-month charter. Meanwhile a short-term charter market appeared in June, with several vessels fixed at historic six-digit figures in the $100-150,000/day range.

2022 outlook

Although this segment witnessed a softening in November, especially for short charters where rates have decreased significantly, prospects for 2022 remain bright for NOOs. Demand is expected to remain high, especially in Intra Asia where this size of ship is particularly popular. Supply meanwhile will remain low, especially in the first half of the year. The orderbook is of no concern, consisting of only twenty ships, of which four will be delivered in 2022.

2,000-2,699 teu

2021 review

2021 was the best on record for 2,000-2,699 teu vessels, which enjoyed historically strong demand. Supply was thin on the ground during the whole year, which pushed charter rates to unprecedented highs. Standard 2,500 teu vessels saw rates skyrocket from $17,000/day in January to $35,000/day by September. Fuel-efficient ships saw even higher figures, with one 2,190 teu 'SDARI 2100' type obtaining a staggering $80,000/day for a 12-month employment. Meanwhile, a short-term charter market appeared in June with rates reaching stratospheric levels of $100-150,000/day for periods of 3-5 months.

2022 outlook

The outlook for these sizes is generally good although a number of charterers seem to prefer the slightly larger 2,800 teu units or the smaller 1,700 teu ships. Irrespective of this, the continued short supply and strong demand should maintain charter rates at high levels in the first half of 2022, whilst prospects for the later part of the year are more uncertain. The orderbook currently consists of 85 ships, 30 of which will be delivered in 2022. Although all these ships already have employment in place, their introduction might be at the expense of some NOO tonnage.

1,500-1,999 teu

2021 review

Tonnage of 1,500-1,999 teu was in high demand throughout the year, making this segment one of the busiest. The continued shortage of ships supported a strong rise in charter rates, which benefitted both 'standard' and 'Bangkokmax' units. The former started off 2021 at $13,000/day for 12-months employments and peaked at $44,000/day in November. Periods of 36 months, which became increasingly common from the second half of the year, were meanwhile agreed at $30,000/day. Bangkokmax tonnage saw an equally bullish rally, with rates soaring from $17,000/day at the beginning of the year for a 12-month employment, to $35,000/day in August for 36-month charters.

Meanwhile, a short-term market supported by freight forwarders developed from June, with six-digit charter rates of up to $120,000/day paid for employments of typically 3-5 months.

2022 outlook

Demand prospects for 2022 remain strong for 1,500-1,999 teu tonnage, especially in Asia which will remain the leading market for these sizes. Bangkokmax tonnage remains extremely popular and will continue to be in high demand. The orderbook is nevertheless threatening the supply/demand balance, with a total of 102 ships currently on order, including 50 for delivery in 2022, of which fifteen are believed to be charter-free. Although the majority of vessels on order are for the account of liner operators, there will be an inevitable knock-on effect on NOO tonnage, with several vessels expected to lose their employment and return to the charter market.

1,250-1,499 teu

2021 review

Finding a ship in this segment was a challenge in 2021, considering the short supply of tonnage and the continued popularity of these sizes. The supply squeeze supported a fast rise in charter rates. Illustrating this, the 1,296 teu, high-reefer 'CV Neptun 1200' type saw their rates rise from $11,500/day at the beginning of the year for a 12-month employment to $26,500/day for a 36-month charter in the autumn.

2022 outlook

This niche segment is expected to enjoy continuously bullish conditions in 2022. This size of ships is particularly popular on certain trade routes (Americas, Caribbean, Southeast Asia) while some designs such as the 1,296 teu 'CV Neptun 1200' type are much sought after for their high-reefer intake. There is very little fleet replacement currently underway for this segment with only ten vessels of

1,380-1,400 teu on order. Only four of these vessels, whose deliveries are slated for 2023-24 are believed to be charter-free.

1,000-1,249 teu

2021 review

After many dull years, the 1,000-1,249 teu segment enjoyed an unprecedented recovery in 2021 with rates hitting historic highs. Against the background of strong demand and tight supply throughout the year, charter rates more than trebled for the standard, 1,118 teu 'CV 1100' type, rising from $9,500/day in January to $35,000/day in July for a typical 12-month charter. Besides, as the year went by, NOOs were able to obtain increasingly long employments of up to 36 months for which the 'CV 1100' type obtained rates as high as low-mid $20,000/day.

Fuel-efficient tonnage such as the 1,043 teu 'Dae Sun 1000' type experienced the same rally, with rates starting off the year at $11,000/day and peaking at $29,000 for 24-month charters and $35,000 for shorter employments.

2022 outlook

Despite a softening in November, which saw 12-month charter rates for 'CV 1100' tonnage falling to $26,000/day, the segment has rebounded somewhat, but has yet to recover its peak conditions of July and August.

Demand prospects are generally good for the coming months especially in Asia where this type of ship remains popular with many regional carriers including SITC, TS Lines or Sinokor. Meanwhile, supply is expected to remain tight, especially in the first half of 2022. The orderbook, which currently stands at 52 vessels, will see 21 units hit the market in 2022. Although most of this tonnage already has an assignment in place, their introduction will inevitably displace other ships, including NOO tonnage.

Sub-1,000 teu

2021 review

The sub-1,000 teu market smashed all records in 2021, with the highest charter rates and longest period employments ever seen for these sizes. This bonanza ended years of misery for NOOs, that were characterized by rock-bottom, OPEX-level, charter rates and short employments. The high demand and continued shortage of ships has pushed charter rates to ever higher levels. Illustrating this, the 868 teu 'Sietas Type 168' class saw its rates skyrocket from $9,500/day for a typical 12 month charter at the beginning of the year to $30,000/day at its peak in July. The duration of employments increased steadily throughout the year, with several vessels securing charters of 36 months, a particularly long duration for these sizes. Slightly smaller vessels of 700 teu have also enjoyed extraordinary conditions with charter rates peaking at $25,000/day, for a 6-month charter.

2022 outlook

The continued shortage of tonnage will support high charter earnings in the first half of 2022. Demand should remain good, although the prospects for the second half of 2022 are less clear. The orderbook is nearly empty with only nine cellular container vessels of 300-650 teu on order for Asian owners, and due for delivery in 2022. The longer-term outlook for this segment is uncertain. The lack of new orders is threatening the renewal of the fleet, which has now an average age of 16 years.

*Picture: **VUOKSI MAERSK**. Photo: CH. Mercier.*

Alphaliner - Cellular fleet as of 31st December 2021

- **The cellular fleet counts 5,515 ships of 24.97 million teu - of which 49.4% is chartered from non-operating owners**
- **The cellular fleet represents 98.6% of the total capacity deployed on liner trades in teu terms**
  > Total capacity active on the liner trades is 6,314 ships of 25.34 million teu and 303.8 million dwt
- **The orderbook counts 718 ships of 5.81 million teu representing 23.3% of the existing fleet (firm orders only)**
- **The orderbook includes 316 ships for 2.82 million teu with charter status representing 48.5% of the total orderbook**

31st December 2021 - Existing						31st December 2021 - Orderbook					
Size ranges	All		Of which chartered from NOO			All		Of which chartered from NOO			
teu	ships	teu	ships	teu	% Cht	ships	teu	ships	teu	% Cht	O / E
18,000-24,000	146	3,044,783	51	1,054,810	34.6%	52	1,233,320	16	384,928	31.2%	**40.5%**
15,200-17,999	58	954,669	10	165,977	17.4%	79	1,240,502	46	719,424	58,0%	**129.9%**
12,500-15,199	269	3,712,464	153	2,114,328	57.0%	122	1,740,800	63	920,760	52.9%	**46.9%**
10,000-12,499	190	2,071,533	123	1,326,251	64.0%	17	202,550	15	178,830	88.3%	**9.8%**
7,500-9,999	478	4,231,600	238	2,122,206	50.2%	0	0	0	0		**0%**
5,100-7,499	438	2,731,759	226	1,399,253	51.2%	88	577,565	54	352,765	61.1%	**21.1%**
4,000-5,099	625	2,832,567	307	1,380,079	48.7%	18	83,052	0	0		**2.9%**
3,000-3,999	261	906,282	153	535,203	59.1%	69	222,306	17	59,274	26.7%	**24.5%**
2,000-2,999	756	1,927,376	386	980,256	50.9%	101	250,805	36	93,072	37.1%	**13,0%**
1,500-1,999	644	1,115,334	302	530,702	47.6%	104	192,476	48	87,590	45.5%	**17.3%**
1,000-1,499	712	818,018	366	431,816	52.8%	57	65,059	18	21,577	33.2%	**8,0%**
500-999	765	566,760	376	288,844	51.0%	6	4,275	1	670	15.7%	**0.8%**
100-499	173	56,877	52	17 729	31.2%	5	1,370	2	420	30.7%	**2.4%**
Total	5,515	24,970,022	2,743	12,347,454	49.4%	718	5,814,080	316	2,819,310	48.5%	23.3%

Note: *The existing chartered fleet takes into account ships chartered out by non-operating owners to operators, thus it does not take into account 233 ships for 519,696 teu which are normally owned by an owner-operator but chartered out to another operator, either for operational reasons (operational exchanges within alliances or partnerships) or because they are surplus to their owners' requirements.*

Alphaliner Top 25 Operators as of 31st December 2021

		Total existing		Orderbook	
#	Operator	teu	ships	teu	ships
1	**APM-Maersk**	4,281,100	737	255,100	25
2	**Mediterranean Shg Co**	4,276,918	642	999,808	60
3	**CMA CGM Group**	3,167,922	567	491,657	54
4	**COSCO Group**	2,934,447	480	585,272	32
5	**Hapag-Lloyd**	1,751,027	253	415,120	22
6	**ONE (Ocean Network Express)**	1,542,261	210	321,692	24
7	**Evergreen Line**	1,477,644	204	607,406	67
8	**HMM Co Ltd**	819,790	75	161,088	12
9	**Yang Ming Marine Transport Corp.**	662,047	90	59,300	5
10	**Wan Hai Lines**	419,559	147	251,368	41
11	**Zim**	413,862	109	310,520	33
12	**PIL (Pacific Int. Line)**	266,667	83		
13	**KMTC**	161,248	69		

		Total existing		Orderbook	
#	Operator	teu	ships	teu	ships
14	**IRISL Group**	150,040	33		
15	**UniFeeder**	143,705	97		
16	**SITC**	142,602	95	67,958	36
17	**X-Press Feeders Group**	140,709	91	65,360	16
18	**Zhonggu Logistics Corp.**	124,621	100	83,052	18
19	**TS Lines**	105,653	51	108,768	30
20	**Sinokor**	105,394	74	33,587	17
21	**Antong Holdings (QASC)**	95,343	97	4,888	2
22	**China United Lines**	87,158	35	12,444	6
23	**RCL (Regional Container L.)**	79,904	39		
24	**Sea Lead Shipping**	70,954	21		
25	**SM Line Corp.**	70,594	14		

FLEET AND ORDERBOOK

As of 1 January 2022, the world cellular containership fleet stood at 5,515 ships, totaling 24.9 M teu. The fleet grew by 1 M teu compared with 1 January 2021, as 141 new ships hit the water, **including the 23,992 teu EVER ACE, which set a new size record**.

Scrapping meanwhile stood at historic lows, with only nineteen ships totaling 16,500 teu sold for recycling. Despite attractive demolition prices hitting $650/ldt on the Indian Sub-Continent and $350/ldt in Turkey, owners had little incentive to get rid of their ships in 2021, considering the massive profits they could achieve by trading their vessels in a historically strong charter market. 2022 will see the fleet growing at a similar pace to 2021 with just over 1 M teu expected to be delivered. Based on the expectation that the charter market will remain strong for a good part of the year, scrapping will meanwhile remain low, with only 60,000 teu projected to reach the beaches. However, 2023 could be different, with a spate of new building deliveries expected to push a greater number of older and smaller ships to the recycling yards.

Alphaliner - 2020-2021 - Cellular ships - Essential figures

	Ships	TEU	% Change YoY
Fleet as at 31 Dec 2021	**5,515**	**24,970,022**	**4.49%**
Orderbook as at 31 Dec 2021	**718**	**5,814,080**	**121.7%**
Orderbook as % of fleet		23.3%	

	Ships	TEU
Fleet as at 31 Dec 2020	**5,374**	**23,896,688**
Orderbook as at 31 Dec 2020	**313**	**2,622,359**
Orderbook as % of fleet		11.0%

2021 - Containerships activity			
Ordered 2021	**556**	**4,249,796**	**306.3%**
Value of new orders (Est.)			
Delivered 2021	**153**	**1,075,290**	**25.7%**
Deleted 2021	**19**	**16,521**	**-91.9%**
Breakdown			
Scrapped	*18*	*13,778*	*-93%*
De-celled			
Lost	*1*	*2,743*	*14.5.3%*
Average idle fleet 2021		**606,410**	**-58.1%**
Idle fleet at end Dec	*165*	*564,021*	*-42.1%*
Idle fleet at end Dec		*-*	*-*
excl. scrubber idlings	*-*	*-*	*-*
Average SCFI 2021		**3,785**	**201.8%**
SCFI end Dec		*5,047*	*81.4%*
Av. Alphaliner charter index 2021		**310.1**	**306.4%**
Index at end Dec		*432.8*	*268.7%*
Average FO $/ton 2021 (Rtm/Sin)		**410**	**57.1%**
FO $/ton end Dec		*424*	*34.1%*
Average VLSFO $/ton 2021 (Rtm/Sin)		**527**	**50.6%**
VLSFO $/ton end Dec		*577*	*43.5%*

2020 - Containerships activity		
Ordered 2020	**100**	**1,045,838**
Value of new orders (Est.)		
Delivered 2020	**135**	**855,675**
Deleted 2020	**101**	**205,447**
Breakdown		
Scrapped	*89*	*197,743*
De-celled	*11*	*6,586*
Lost	*1*	*1,118*
Average idle fleet 2020		**1,449,243**
Idle fleet at end Dec		*975,014*
Idle fleet at end Dec	*83*	*352,817*
excl. scrubber idlings	*76*	*261,455*
Average SCFI 2020		**1,254**
SCFI end Dec		*2,783*
Av. Alphaliner charter index 2020		**76.3**
Index at end Dec		*117.4*
Average FO $/ton 2020 (Rtm/Sin)		**261**
FO $/ton end Dec		*316*
Average VLSFO $/ton 2020 (Rtm/Sin)		**350**
VLSFO $/ton end Dec		*402*

Picture: ***HMM DUBLIN****. Photo: Piet Sinke, www.maasmondmaritime.com.*

Historic ordering in 2021

Newbuilding orders placed in 2021 were, in capacity terms, their highest ever, totaling 556 vessels for 4.2 M teu. Never had so much capacity been ordered in such a short time frame, especially as regards large tonnage. Among the ships ordered in 2021 were sixteen units of 23-24,000 teu and a staggering 126 ships of 15-16,000 teu. There were also sixty orders for a new class of compact vessels of 7,000 teu and a spate of orders of Intra-Asia tonnage from 1,800 to 3,000 teu.

The total orderbook now stands at 5.8M teu for 718 ships, versus 2.6M teu and 313 ships on 1 January 2021, with an orderbook-to-fleet ratio of 23.3% versus only 11% one year ago.

En route to decarbonization

Throughout 2021, NOOs and liner shipping companies have continued to actively develop solutions to meet future decarbonization targets. Among the significant developments, German NOO Asiatic Lloyd placed an order for two 'ammonia ready' ships of 7,100 teu, the first of their type. Meanwhile Maersk ordered eight ships of 16,000 teu that will run on green methanol. MSC has also been active by increasingly switching to LNG for its newbuildings. It also purchased air lubrication devices for 30 vessels in a bid to cut fuel costs and reduce carbon emissions by 1.6 M tons. Finally, the world's first zero-emission, electrically powered container vessel, the Yara Birkeland (120 teu) carried out its maiden voyage in November while several carriers successfully completed marine biofuel trials.

SECOND HAND MARKET

Container Bonanza ...at last !!

A new record year

In 2021, we count more than twice as many transactions as in the previous record year 2004 (265 ships / 500,145 teu in total).

What we called in last year's *Review* a 'strong recovery' turned into a booming market.

We have read headlines such as, Sky is the limit,...

Soaring container ship demand for was fueled by various events, notably significant port congestion. We entered the 2nd year of the pandemic which drove a significative increase in container volumes. Indeed, this was driven by a change in consumer spending from services to goods. Furthermore, there was also the grounding of the Ever Given (20,124 teu) in the Suez Canal, which was followed by the closing of Yantian Port in early June.

All these events led to incredible charter rates and consequently raised second- hand prices. What was a blessing for the shipowner/ operator turned into a nightmare for the one sitting on the other end of the logistics chain as the shipper had to face incredible box rates.

The lack of container tonnage also resulted in creative solutions. We saw purchases of Handysize bulkers (open hatch box shaped), or MPPs, which are today employed in pure container trades.

The transaction outlook in 2022 is comparably low and should consequently come with higher prices. At the time of writing, Alphaliner anticipated only 550 ships becoming open during 2022.

If container freight rates on some routes remain at levels around $8,000/teu, second-hand prices are likely to strengthen further. To say it with different words, as long as these top prices pay off within less than a year, one can accept another hot year and top second-hand prices.

A very interesting question, to which we may see some answers this year is:

Will some of this freshly made money be re-invested into innovative projects? Particularly the container segment requires actions regarding their CO_2 emissions.

2020 Key numbers

Average age of units sold: 15.32 years

At the end of 2021 we count 553 Container ship sales with a total capacity of 1,891,594 teu. The 553 ships represent 7.5% of the total container fleet. The overall transaction rate of concluded sales more than doubled during the past year. (2020: 254 / 940,207 teu)

That was to be expected, only 17 ships (cellular ships) with a total capacity of 14,932 teu have been sold for recycling. At the end of 2021, 0.06% of the global teu capacity have been sold for demolition.

The average demolition age further increased by almost 4 years to 28.5 years. (2020: 24.8 years)

*Picture: **MSC DIANA**. Photo: Piet Sinke, www.maasmondmaritime.com.*

A peek at the top operators second-hand appetite.

	Operator	Units	Average Size / Age
1	**MSC**	125 units Q4:19 | Q3:48 | Q2:42 | Q1:16	3,500 teu / 17.8 years
2	**CMA CGM**	47 units Q4:17 | Q3:13 | Q2:14 | Q1:3	3,200 teu / 14.5 years
3	**Maersk**	10 units Q4: 4 | Q3:2 | Q2:4 | Q1:0	4,500 teu / 11.9 years
4	**COSCO**	0 units	
5	**Hapag Lloyd**	10 units Q4:0 | Q3:3 | Q2:2 | Q1:5	8,800 teu / 5.7 years
11	**Wan Hai Lines**	14 units (from 1,700-13,000 teu) Q4:3 | Q3:1 | Q2:4 | Q1:6	6,300 teu / 8.3 years

It is no surprise that once more, and by far, MSC takes first place. By end-2021 we aggregated under their name the incredible number of an additional 438,316 teu (23% of total teu sold in 2021).

We note that Wan Hai Line remained active and continued to quietly add 90,316 teu to their fleet (8 units in 2020). During the second half of the year Wan Hai also started to purchase Feeder ships in the famous size of 1,700 teu.

Traditional tonnage providers have become more active.

A peek at the tonnage provider

	Operator	Units	Average Size / Age
1	**Global Ship Lease**	23 units	4,200 teu / 14.9 years
2	**Conbulk**	15 units	2,000 teu / 18.3 years
3	**Costamare**	13 units	7,600 teu / 12.5 years
4	**Sea Consortium**	11 units	2,200 teu / 10 years
5	**OM Maritime**	10 units	5,100 teu / 14.9 years

We note that OM Maritime acquired 14 units over the past 2 years, a total of 71,384 teu. Their first second-hand deal dates to 4Q20. Since when they have been adding on average 3.5 ships every three months. The 14 ships represent an average size / age of 5,000 teu / 14.8 years. With the additional 10 ships acquired in 2021, they have even made their way up to become the fifth most active global tonnage provider over the past year.

Top three sellers by units

	Operator	Units	Average Size / Age
1	**Borealis Maritime**	26 units	2,700 teu / 14.2 years
		71,017 teu total	
2	**Lomar**	24 units	2,900 teu / 14.0 years
		69,881 teu total	
3	**SFL Corporation**	16 units	2,800 teu / 25.9 years
		45,540 teu total	

A look at the global list of sellers draws an obvious picture. So-called asset players took advantage of the extremely good market to cash in.

Followed by the top three, are a couple of German companies who have sold quite some tonnage across the year. Notably, we have linked 203 sales to companies based in, or in very close connection, to Germany. At the end of 2021 we count a total of 571,756 teu sold.

Never had so much capacity been ordered in such a short time frame

*Picture: **REN JIAN 23**, 4,275 teu,chartered by Chinese carrier CULines for their new Asia-Europe AEX service'. Photo: Dick Nootenboom.*

Analysis of 2021 transactions by size

Containers in short supply

Size	N° of transactions 2021 vs 2020	Variation
>10,000 teu	24 vs 11	+118%
Over Panamax	77 vs 60	+28%
3,000 – 5,100 teu	126 vs 42	+200%
2,000 – 3,000 teu	108 vs 29	+272%
900 – 2,000 teu	180 vs 77	+133%
< 900 teu	40 vs 35	+14%

Ships over 10,000 teu: 22 Sales (11 in 2020)

Average age of units sold: 3.4 years. Total teu capacity: 281,925.

After a not-so-active year in 2020, the number of transactions doubled. End of 2021, this segment was back at levels we have seen in 2019 (22 sales). Most activity happened during Q2 and Q3. The beginning and the end of the year was comparably calm. Seaspan slowed down on second-hand deals and only purchased 2 units compared with 8 units in 2020. The focus for them in 2021 was clearly set on placing newbuilding orders.

Out of the total of 22 ships, there are 6 units who will only be delivered to their new owners in in 2023-24. Another 5 units will be handed over in 2022.

Top three sellers and buyers per unit.

1. Capital Ship Management 7 units / Costamare | Hapag Lloyd 5 units
2. York Capital 5 units / Wan Hai Line 4 units
3. Enesel SA 3 units / SFL | Seaspan | RCL / 2 units

Unit breakdown per quarter

Q1: 2 I Q2: 11 I Q3: 8 I Q4: 1

The transaction outlook in 2022 is comparably low and should consequently come with higher prices

Over-Panamax: 77 sales (60 in 2020)

Average age of units sold: 15.1 years. Total teu capacity: 532,185.

The first 3 quarters were balanced with an average of 23 deals. Whereas in Q4, we have seen not even one third of the activity. Compared with the other segments, the transaction rate was low (23%).

In addition to the usual suspects, we have seen a youngster - OM Maritime who were very active. In total they purchased 5 units. One can even say they have bought themselves into this segment by paying top prices. In Q3 OM acquired from Cape Shipping the Cape Chronos IMO: 9719862, 2015 built, Hanjin 6900 design, for a price of $135 million.

Top three sellers and buyers per unit

1. Zeaborn Group 11 units / MSC 16 units
2. International Maritime Enterprises 9 units / Global Ship Lease 11 units
3. Zodiac 6 units / Danaos 6 units

Unit breakdown per quarter

Q1: 22 I Q2: 20 I Q3: 28 I Q4: 7

3,000-5,100 teu: 126 sales (42in 2020)

Average age of units sold: 15.1 years. Total teu capacity: 524,396.

This segment was extremely in-demand. Compared with last year, the transaction rate increased by over 200%. The number of sales remained balanced over the months. We counted an average amount of 31.5 units sold per quarter. We noticed increasing demand which naturally transferred into increasing prices. This is illustrated by the below example.

The 2007 built Hanjin 3.400 named Sphene (IMO:9333058), sold in February from Schulte Group to Taskos for the price of $13 million. Only 5 months later the new owners flipped the ship and sold her to Blues Star Group at the reported price of $39 million, an increase of 200%!

Another notable sale was that of the 2x wide beam blt'14 & 15 - Neptun 4800 - Design built in Zheijang Ouhua from Sea Consortium to MSC, reported in November for $105 million each. This was the highest price paid on a per teu basis over the entire year.

Below, to demonstrate that the availability of tonnage was an important benchmark and had quite some impact on the price, we compared two similar ships in size and interestingly note that the second-Hand price exceeded the newbuilding price.

Second-hand price per teu $21,500 vs newbuilding $11,800 per teu.

The extraordinary price development shown in the below example of a 10-year-old 4.500 teu unit.

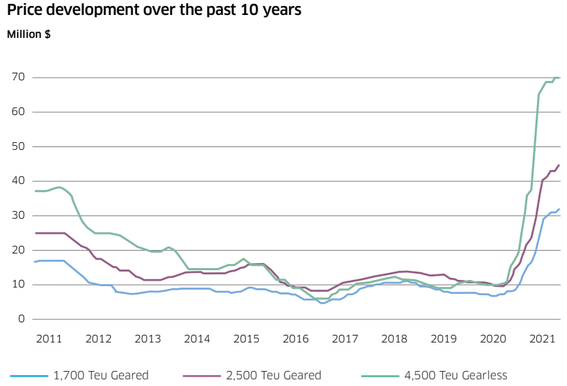
Top three sellers and buyers per unit

1. SFL Corporation 9 units / MSC 36 units
2. Borealis 8 units / CMA CGM 15 units
3. Apollo | Asiatic LLoyd 6 units / Capital Ship Management 6 units

Unit breakdown per quarter

Q1: 35 I Q2: 37 I Q3: 34 I Q4: 20

Price development over the past 10 years



2,000-3,000 teu: 29 sales 108 sales (29 in 2020)

Average age of units sold: 15.7 years. Total teu capacity: 279,270.

With 108 concluded sales, this segment continued its upward trend and closed the year with the highest increase of transaction rate (+272%) we have seen over the recent past. Activity remained high throughout the year and peaked in Q2 with 45 sales. This is almost double the amount of transaction we counted for the entirety of 2020.

The oldest ship sold for further trading in this category was the 1994-in-Spain-built MSC NILGUN - 2,394 teu. It should be mentioned that the ship was controlled by MSC previously, and the purchase can be viewed as a buyout from the existing financing structure.

Units of the Hyundai 2.800 design saw ownerships change 14 times over the past year. In total, 53 ships of this design were built during the years 2002-08.

Top three sellers and buyers per unit

1. Lomar Corp. 12 units / MSC 36 units
2. Borealis 11 units / CMA CGM 11 units
3. Klaveness 6 units / Global Ship Lease 6 units

Unit breakdown per quarter

Q1: 19 I Q2: 45 I Q3: 23 I Q4: 20

900-2,000 teu: 180 sales (77 in 2020)

Average age of units sold: 15.7 years. Total teu capacity: 246,388.

The year started with a rush of activity during Q1 when 58 units were sold. The activity remained strong during Q2 and Q3 while lost some slight momentum during Q4. In terms of reported sales this segment finished the year as the most active.

We have been pinning one interesting deal where a 2005-built Dae Sun 960 was flipped within a couple of months of purchase. Rather uncommon in more normal markets but unsurprising in these times of promising profits. Veritas Shipmanagement bought the 2005-built Dae Sun 960 (IMO: 9332717) now named Fesco Yanian in April for the price of $8.5 million. Only four months later they resold her at a premium of $6 million to Fresco. The deal was reported in August at the price of $14.5 million)

At the end of November and beginning of December we noticed a first very slight softening in this smaller segment but at the time of writing, prices have been firming up again.

Top three sellers and buyers per unit

1. Vega 10 units / MSC 36 units
2. Borealis 7 units / CMA CGM 17 units
3. Lomar 6 units / Conbulk 10 units

Unit breakdown per quarter

Q1: 58 I Q2: 45 I Q3: 48 I Q4: 29

900 teu and less: 40 sales (35 in 2020)

Average age of units sold: 18.9 years. Total teu capacity: 27,430.

Sales activity remained consistent with 2020 last year with an average of 10 transactions per quarter. Despite the rising charter market, there was no significant increase in sales. The number of sales in 2019 (43 units) has not been beaten even in this otherwise-record year.

One obvious reason for this is that the fleet continues to age. Despite the increasing demand for tonnage in this segment, we saw only 2 newbuilding orders reported in 2021.

Top three sellers and buyers per unit

1. Heung-A 3 units / Doehle 3 units
2. JR Shipping 3 units / Langh Ship 3 units
3. Harren & Partners |Qingdao Pengteng 2 units / Transworld | HS Schiffhart 2 units

Unit breakdown per quarter

Q1: 12 I Q2: 22 I Q3: 10 I Q4: 7

*Picture: **SYNERGY OAKLAND**, 4,253 teu, chartered in September 2021 for a 2-3 month employment at $200,000 per day, an all-time record. Photo: Euroseas.*

MPP

The beauty and the blessing of a versatile multipurpose ship – a market review and outlook the changes and the surprises

2021 has been an outstanding year for the MPP segment, to say the least...

Since the dawn of commerce, people have used boxes, sacks, barrels, and containers of varying sizes to transport goods over long distances. Now, an estimated 90% of the world's goods are transported by sea. The average size of a container ship has doubled over the past 20 years alone, with the largest ships sailing today capable of hauling 24,000 containers.

AAL NANJING
19,000 dwt, heavy lift MPV, is seen transporting a cargo of Chinese-made roof petals southbound to a major mining project in Australia. Owners: AAL Shipping.

MARKET OVERVIEW

2020 ended with a surprise for the MPP market as even charterers such as BBC, UHL and even freight forwarders who previously carried windmills and projects as premium cargoes, now focused on containers, mainly ex-China for destinations including the Continent and the US. Additionally, liner companies including AAL and COSCOL switched tonnage from parcel services to carry containers and managed to receive similar freight rates to those received by container lines.

2021 saw a general tonnage shortage. This was driven by the limited supply of container tonnage which itself was led by delays and congestion, notably in the Far East (China remains the largest global exporter). This saw the closure of certain ports while others remained heavily congested for 3 weeks or more. All told, this helped to inflate the global demand for vessels capable of transporting containers.

An MPP becomes handy whenever and wherever there is a lack of specialized tonnage. This was, and still is, the case with container carriers across 2021-22. This was mainly driven by the ripple effects in the wake of Covid and the measures taken by governments to prevent the virus from spreading, such as lockdowns, the closure of manufacturing plants, and knock-on effects such as staff shortages. These combined have created massive delays in the global supply chain while port congestion interrupted liner schedules and berthing windows.

The MPP market peaked during 3Q21. Focusing on the larger MPP's: A 30,000 DWAT Superflex type (actually an MPP, with tweendecks and good gear including heavy lift plus capacity for a nominal 1,800 teu), which were supposed to be scrapped in 2020 experienced a complete revival and thereby were given a second life due to their high container intake. These units achieved rates close to $80,000/day for a container dominating trade for delivery in January 2022. In comparison, the same type of ships were fixed at around the $10,000/day mark for the usual MPP trades at the beginning of 2021. It is not only larger MPPs which are being utilised for container transport, but also the smaller MPPs down to 12,500 dwt MPP/heavy lifter F-types.

In general, there was, and still is, strong demand for period charter tonnage. However, many shipowners have taken matters into their own hands by fixing cargoes themselves, rather than giving operators an opportunity to make their margins. Nonetheless, we have witnessed the main MPP operators, freight forwarders, logistic companies as well as major container lines, such as Hapag Lloyd and CMA CGM, sucking in MPP tonnage on medium and long-term period bases. Meanwhile, the spot market for cargoes has, and still is, suffering the most, due to a lack of available tonnage.

***Picture:* BRIGHT HORIZON**, *built 2002 / DWAT 30538 mts / owned by MACS / gear: maximum lifting capacity 200ts.*
Vessel is running in owners own liner service between Continent and South Africa and was chartered out to Hapag Lloyd in Autumn 2021 for container carriage.

Larger MPP review

The highlighted type 1,700 teu for 6 months at $60,821/day is the closest comparison to the intake of containers on a Superflex (1,800 teu nominal and 1,350 teu at 14 tons homogeneous intake). This reflects an outstanding achievement considering the aforementioned fixture of close to $80,000/day.

The results of the New Con-Tex (the container market index) on the same day, as the mentioned Supferflex fixture in September 2021, shows the container vessels, charter rates as follows:

Type	Duration	$/Day
1100 TEU	for 6 months	41,458
1700 TEU	for 6 months	60,821
2500 TEU	for 12 months	68,645
2700 TEU	for 12 months	75,864
3500 TEU	for 12 months	81,600
4250 TEU	for 12 months	89,565

The typical container lines are still not able to absorb the cargo quantities so any MPP did, and will do, these jobs. We have seen that more freight forwarders are now acting as operators and paying rate levels which are far higher than those which other charterers may pay. We have seen tonnage ballasting ex-Continent to pick up boxes ex-Far East for the Continent or USWC or US Gulf-US East Coast range.

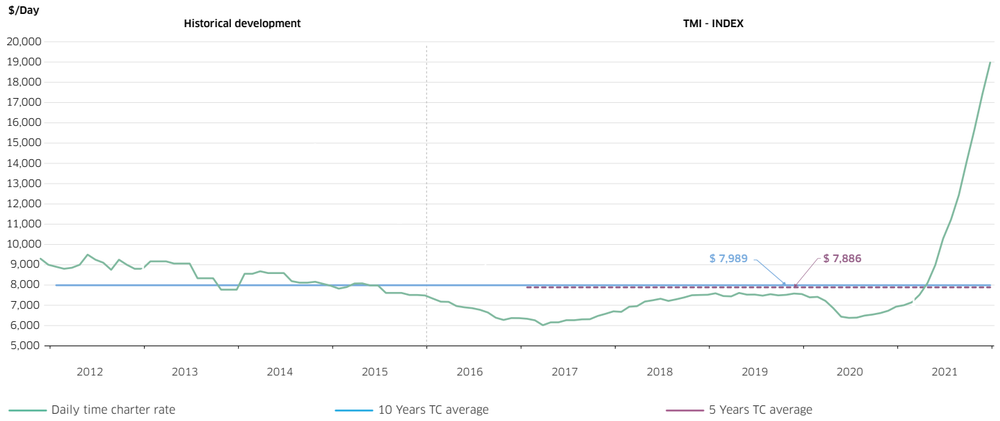
Smaller MPP review

As usual, larger volumes of bulk and container commodities will drive the economy, trade and transport first. However, the smaller volumes will have to follow inevitably. the TMI (Topfer Multipurpose Index) which represents the compact MPP segment, posted a year-on-year gain of 173.7%.

The TMI represents the monthly average time charter rate assessment established by a panel of operators, owners, and brokers for a 6-12months time charter for a 12,500 dwt MPP / heavy lift F-type vessel.

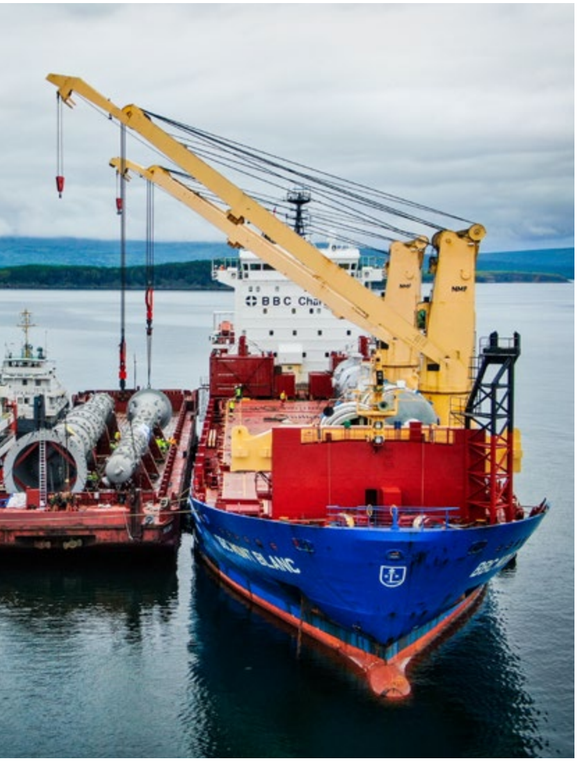
When you examine last year's BRS Annual Review plus the current orderbook, you will note no real changes in 2021 apart from the announcement that the Germany-based Schoeller Group was ordering 6 larger units (see overleaf further comments). Various tramp MPP owners were hunting for newbuilding slots, but shipyards are reluctant to invest into specialized and more sophisticated MPP designs while they can choose easier designs such as container vessels. With the firm MPP employment market plus no real change on the newbuilding MPP front, it was notable that prices for second hand MPP tonnage increased. The very fast development of time charter rates had also some influence on the various indexes including the TMI. We noticed that the gap between the index rate and real-market fixtures increased over the past months and that the increase of the index result went slower that the rate increases in the real charter market. We have even seen deals for medium up to longer periods in the range of mid to high $20,000s/day during 2021.

Multipurpose time charter rate development (F-type 12.500 Tons deadweight, geared 2012 - 2021*)



* 2007-2015: compiled from own fixture information; 2016-2021: -TMI -Toepfer's Multipurpose Index.

Source: © Copyright Toepfer Transport GmbH



FACTORS DRIVING FREIGHT RATES HIGHER

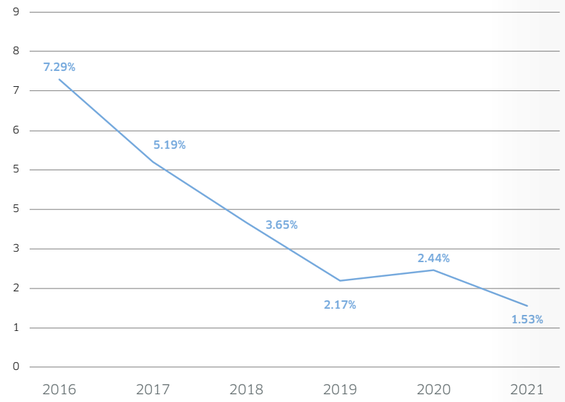
The penalties for non-completion or non-delivery of large international projects (offshore, oil and gas and windmill parks for example) are immense and lead to an inevitable decision to be taken by the suppliers, shippers and manufacturers: Either pay million-dollar penalties or pay higher freight rates. The latter is the most logical and proven decision, demonstrated by the example of a 10,000 dwt heavy lifter shipping a full cargo of windmills and equipment from Vietnam to WCSA / Chile. At the time of fixing, the ship was located in East Africa and therefore it was required ballast across the entire Indian Ocean. The freight for this fixture is said to be a lumpsum in excess of $3.0 million.

Accordingly, all windmill producers had to rethink their global transport strategies, as the major producers are located in Asia, especially the Far East, where the competition from the container sector is at its fiercest.

As a consequence of this crazy market many owners had an incentive to sell and cash-in on the hot second-hand market. Various MPPs such as F types (the traditional workhorses for operators) were, and remain in the market for sale. A remarkable deal was the sale of six MPP / heavylift from Germany's Auerbach Schifffahrt to Nordic MPP. At usd $81 million, this deal demonstrates how lucrative this market is. This change of tonnage supported the strategic extension of Swires Shipping who will support this deal with a time charter period employment of 3 years outright at an average rate of $16,667/day (optional period attached as well).

This deal appears a logical step if we examine the MPP / heavylift orderbook.

Development of MPP/HL Orderbook as % of Existing Fleet 2016 - 2021 (Vessels with min. 100ts combined Lifting Capacity)



Source: Toepfer Transport GmbH - 2022

***Pictures: BBC MONT BLANC**, built 2011 at Xingang Shipyard, DWAT 9,282 mts, gear lifting capacity: 700 mts;*
***AAL HAMBURG**, 32.000 dwt, owned by AAL Shipping, gear: maximum lifting capacity 700ts. Ship designer and rendering author: SDARI.*

As outlined earlier, the most interesting order was the announcement for mssrs Schoeller ordering six container-friendly heavylift vessels for delivery in 2024. Furthermore, the deal for these 32000 dwat Sdari-designed vessels comes with the option attached for two sister vessels. These ships will feature three 350 ton cranes combinable up to 700 tons, plus they will feature forward-placed bridges and accomodation decks.

PERSPECTIVES FOR 2022

History suggests that this boom will only be temporary, given seasonal fluctuations in the container market. However, with Covid, we are facing a factor that is hard to predict. Variants, waves, and measures to control their spread seem to be the "new normal". Accordingly, there is little clarity on how these will evolve over the coming year. The outlook for 2022 from a freight/ hire level perspective in the MPP sector remains optimistic considering the low volume of newbuildings against the backdrop of steady demand to carry containers. The latter will be driven by persistent logistical bottlenecks and challenges in a world where nobody knows how many more covid-variants will cause further disruption. Large windmill projects around the globe will also add to the demand for MPP tonnage with main these components being produced in the Far East, Southeast Asia, India and Europe. On the other hand, the supply of tonnage remains almost constant, therefore we expect to see a further positive trend for both freight and time charter rates in 2022.

nothing is as permanent than the impermanence – the buddha...

...and what goes up, must come down!

question remains... when...

***Picture: LILA MUMBAI**, built 2003, DWAT 30,000 mts, gear lifting capacity 640ts, owned by Lila Global. Photographed in Hamburg when employed under BBC charter. Vessel was fixed for container shipments ex far east to north continent and later in 2021 doing container extra loader far east to US West Coast and US East Coast.*

Ro-Ro

The Boomerang

At the end of 2020 signs of cautious optimism were notable in the market through increased demand for tonnage, except for UK/Continent trade which was still strong ahead of the 31 December 2020 British exit from the European Union. The optimism increased across the market in 1Q21. As the year advanced, multiple Covid vaccines were rolled out and demand for ships increased with volumes surging to keep up with the increased demand from consumers, and amid the need for inventory replenishment which were languishing at low levels. These factors led to a dramatic improvement in the market, with the sector bouncing back earlier than expected, similarly to the trajectory of a boomerang.

SCANDIA SEAWAYS
The last unit of a series of 6 sisters each with a capacity of 6,700 LM over 5 decks, delivered in December 2021 by China Merchants Jinling in Jiangsu, China to the DFDS A/S, which are operating her on the North Continent.

Photo: courtesy DFDS Group.

AFTER LOCKDOWN CAME APPETITE FOR CONSUMPTION

Q420 was very strong for UK/Continent trades due to Brexit-induced stock building and was stronger than pre-Covid 4Q19. In 1Q21, this trade slowed and the congestion in ports eased. This congestion was driven by a lack of truck drivers and supply chain bottlenecks. At the same time the rest of the market followed suit with good volume increases in the Mediterranean Sea and Baltic Sea trades with UK/Continent trades stabilizing at good levels.

As a result of the long periods of lockdown in 2020, companies had exhausted their inventories due to related uncertainties. In Q2 it became clear that demand was rising rapidly, with some trade volumes up as much as 50% compared with April 2020, which was very poor as it was in the midst of the first lockdown. In general, volumes were up by around 30%, in part due to stock building and in part fuelled by consumers' appetite for purchasing goods after the persistent lockdowns in 2020. Indeed, consumer confidence was back and fuelled by the efficient rollout of Covid vaccinations.

The new routes which opened during the second half of 2020 between France, Belgium, Spain, and Ireland to bypass UK as a transit point were shown to be a success. These new routes, and the increased capacities of some existing routes were established mainly so driver-accompanied trailers from the aforementioned countries could bypass the UK as stricter import regulations were introduced following Brexit. These routes are operated with Ropax vessels, but also pure RORO routes were started, and capacity increased on existing routes was successful as well. Stena Line announced that they would start a new service between Hanko, Finland and Nynäshamn, Sweden in February 2022. The service will start with URD which is a 1,600 lane meter Ropax vessel with capacity for 186 passengers. In May 2022, a second Ropax ship will be deployed on the service. Rederi AB Gotland started a route from Rostock to Nynäshamn in September with their Ropax vessel Drotten of 1,800 lane meters and 1,500 pax.

In the Baltic Sea and in the Mediterranean Sea the freight volumes were well above their 2020 figures. The Baltic Sea market stabilized while the Mediterranean Sea volumes became steadily stronger from 2Q21, especially on the Turkey to Italy and Turkey to Libya corridors. There was also increased activity from Mediterranean Europe to North Africa.

The tonnage situation became steadily tighter as volumes continued to increase in Q3 and Q4 as well. It became clear by mid-2021 that the market would end up tight and rates consequently rose. Operators withdrew ships they had for sale or for charter, and by the beginning of Q3 these same operators started chartering in ships in order to cover the increased volumes. By the end of the year, there were very few ships available in the market, especially in the 2000+ LM segment. The 2021 RORO freight volumes were about 4-6 percent above pre-Covid 2019 volumes depending on the trades which explains the high demand for ships in the second half of 2021.

Picture: ***FAUSTINE****, 5,400 LM with 4 RORO decks and 4 hoistable car decks delivered in October 2021 by Hyundai Mipo Dockyard (HMD) in South Korea to CLdN Group, who are operating her in North Continent. Faustine and the last ship to be delivered are dual fuel fitted. Photo: courtesy CLdN Group.*

Charter market

Chartering activity followed the upward trend which began in 4Q20. By the end of 2021, it was up more than 15% compared with the previous year, where two thirds of the fixtures were done in the 2nd half of the year. In 2021, the activity was more evenly spread throughout the year with activity peaking in Q3 and partly Q4.

The periods fixed became longer, and rates continued to rise significantly throughout the year. Fixtures done for shorter periods with options for extension had up to 25% higher optional rates than the initial firm period rates, suggesting that the market believed in the future. Most optional periods were declared by charterers and as the market was rising the optional rates were not renegotiated. In 2Q and 3Q, as cargo volumes continued to increase, the periods became longer as charterers became confident in the market and realized the importance of securing tonnage to cover the increased cargo volumes. Consequently, rates increased as tonnage became scarce with owners requesting longer periods of up to 3-4 years at healthy rates, which charterers had to often accommodate to secure tonnage.

The outlook for 2022 is also optimistic on the basis of the continued scarcity of tonnage with major operators even holding on to their smaller and vintage tonnage.

Sale and purchase activity

Sale and purchase volumes were also considerably higher in 2021, up from only 8 units sold in 2020 as 21 ships changed hands. In 2019 there were 18 transactions.

The average age of the ships sold was 27.5 years and the average size was just above 1,590 LM. In 2020 the ships' average was barely above 20 years old, but only 1,250 lane meters. Indeed, average size was boosted by several transactions including the Acacia Seaways (ex Meleq) 4,076 lane meter and Pol Stella (ex Hatche) 3,663 lane meters and a number of ships between 2,000 – 2,500 lane meters. The Acacia Seaways – built 2017 – and the Pol Stella – built 2009 – were the most substantial deals in terms of price with the latter rumored sold for EUR 25,5 million. There has been no reported or rumored price for Acacia Seaways, but we believe this was done on par with the valuations of the ship at low EUR 40's million.

Smaller units of up to 1,200 lane meters were sold between EUR 2-4 million depending on age.

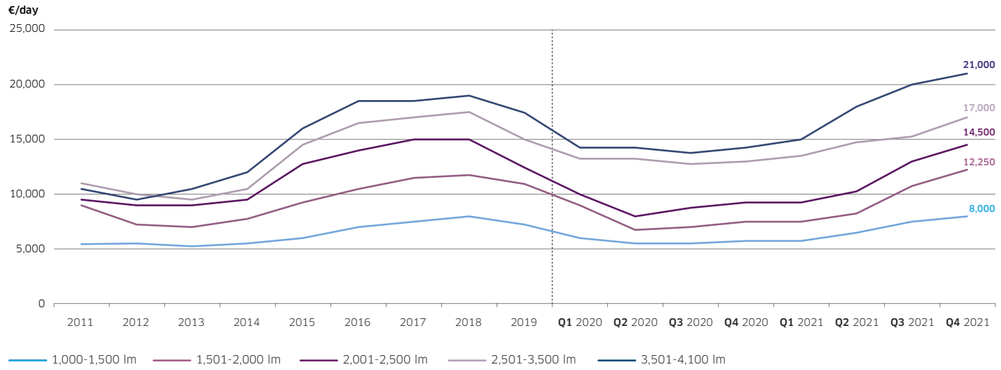
The work horses of 2,000-2,500 lane meters built between 1983 and 1990 were sold for between EUR 3.5-5 million depending on age. For the younger ships, the prices were between EUR 8 - 10 million.

Today there are very few ships available for sale in any segment as operators withdrew the ships they had for sale in 2Q as they were needed to cope with the increased cargo volumes.

We expect the second hand market of ROROs to remain firm even though there are a number of newbuildings to come in 2022.

21 second hands sales were concluded in 2021 vs 8 in 2020

Average Charter Rates from 2011 to 2021 (non-scrubber equipped ships)



THE FLEET

Newbuilding deliveries in 2021

There were 10 ships delivered to the RORO fleet in 2021 amounting to roughly 50,500 lane meters. Mainly big ships, but not a significant number. In 2020 there were only 7 ships delivered with a total capacity 32,200 lane meters.

DFDS took delivery of Scandia Seaways, the last of the series of 6 large ROROs of 6,700 LM built at Jinling Shipyard. Fitted with 5 decks for 450 trailers and one hoistable car deck in the lower hold, they are equipped with cold ironing for land power while at berth.

Grimaldi took delivery of four of their GG5G series out of total 9 ships, also being constructed at Jinling Shipyard. These ships are 7,800 lane meters and have an intake of 500 trailers on 5 decks.

CLdN Group took delivery of Faustine, their fifth of a series of 6 x 5,400 lane meter ROROs. Faustine and the last ship in the series, Seraphine, have been fitted with dual fuel LNG propulsion.

There were four ships delivered from Japanese shipyards to domestic Japanese operators. These ships are between 1,440 – 2,500 lane meters with quarter stern ramps.

New deliveries in 2021 were still relatively low with 10 units.

Orderbook and new orders

10 new orders were placed in 2021, up from only 2 in 2020. In 2019 the tally was 14 new orders.

Three new orders were placed in Japan for domestic trade with capacities between 1,500-2,800 lane meters and with quarter stern ramps. SeaRoad Shipping of Australia ordered a large RORO vessel of 4,227 lane meters at Flensburger. Hyundai Mipo Dockyard landed 6 firm orders from Grimaldi for deep sea con-ro ships with 4,700 lane meters, with car decks and 2,000 teu intake. These ships will be 250m loa and 38m beam and will trade in the Atlantic.

The orderbook was reduced to a total of 27 ships in 2021 totalling 114,500 lane meters. This is down from 34 ships for 130,800 lane meters in 2020, which itself was down 12.5% in lane meter capacity from 2019.

For 2022 there are 19 ships scheduled for delivery with approximated 79,000 lane meters with an average capacity of close to 4,200 lane meters. For 2023 there are six ships scheduled for delivery with a total of 25,500 lane meters and in 2024 there are only 2 ships to be delivered for 9,400 lane meters.

It is worth noting that the order book basically consists of larger ships above 4,000 lane meters. There are only 6 ships of 500-600 lane meters, of which, 3 will go on long term contracts to paper producer UPM-Kymene in the Baltic Sea and 3 ships are 1,200 – 2,350 lane meters for Japanese domestic trade. The order book is down to a level we have not seen in several years.

Recycling activity

Just like last year only 10 ships were sold for recycling. However, the total lane meter capacity was up almost 24% y-o-y to 17,350 thereby averaging 1,735 lane meters per ship. The average age of the ships in 2021 was 33.4 years which was higher than the average in 2020 of 29 years. The reason for the relatively low average age in 2020 can be explained by the fact that Japanese operated ships were being sold for recycling while in 2021, no Japanese operated ships were recycled. Japanese operated ships tend to have a shorter life span than others and are replaced after about 20 years. There are approximately 75 ships that are 30 years or older and approximately 44 ships that are 35 years or older which are all future recycling candidates with over 1,000 lane meters. Furthermore, there are only 15 ships of 35 years or older that are above 2,000 lane meters.

Based on the above figures we forecast that over the coming years recycling will remain on par with 2021 in terms of number of ships. Meanwhile, these ships should be lower in terms of capacity.

FORECAST

We expect tonnage to remain tight in 2022, particularly in the 1,000-2,000 LM and 2,000-3,000 LM segments. This assumption reflects relatively few new buildings being delivered and expectations that cargo volume levels will stay relatively strong with no sharp drops. Although new buildings will come and might free up tonnage from operators, the influx might not be sufficient to cope with cargo flows if volumes maintain their present levels.

There is one joker, which we shall not forget and that is the relatively large and increasing order book of ropax vessels which have started to be delivered. Many of these ships have capacity of between 3,000-4,500 lane meters and will replace some RORO tonnage currently being used on certain trade routes to cope with cargo volumes while waiting for the ropax new buildings to be delivered.

In general, we expect a strong market, but not necessarily with as high a volume of transactions as in 2021.

10 new orders were placed in 2021 compared with 2 in 2020 and 14 in 2019

Picture: ***AURA SEAWAYS****. The first of two large RoPax ships with capacities of 4500 LM over 4 decks and additional car decks, 600 passengers and 250 cabins, delivered December 2021 from Guangzhou Shipyard International (GSI), China to DFDS A/S, which are operating her between Karlshamn, Sweden and Klaipeda, Lithuania. Photo: courtesyDFDS Group.*

Car Carrier

Like a Phoenix

Widespread logistical and supply chain disruptions drove the car carrier sector to what only 12 months ago was inconceivable, namely a return to pre-2008 market dynamics, characterized by scarcity of supply, firm demand for tonnage, and steadily rising charter rates and asset values.

AUTO ADVANCE
First in a series of three car carriers with dual-fuel Liquified Natural Gas (LNG) battery hybrid propulsion and approximately 30,600 square meters on 10 decks, equivalent to approximately 3,600 CEU with 2 hoistable decks. Delivered in November 2021 by Jiangnan Shipyard in China for United European Car Carriers (UECC) and operated by UECC.

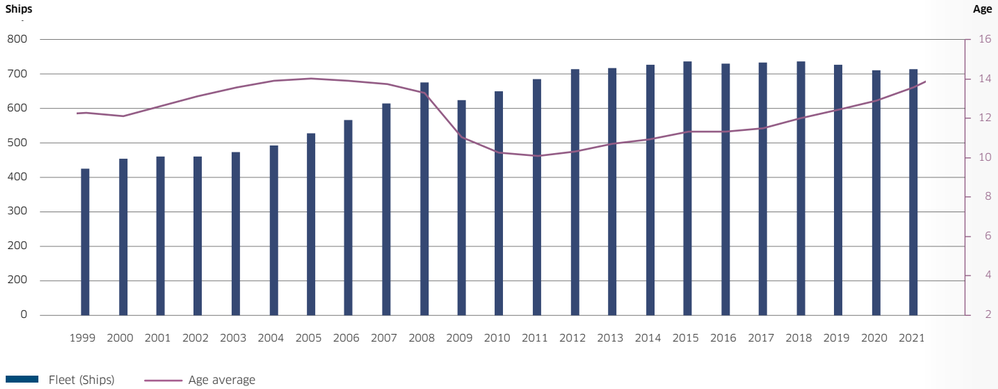
The sector, which for over a decade was under invested, marred by poor earnings and results, staged the greatest comeback in its history

CHARTERING ACTIVITY

At the end of the year, the time charter rate for a mid-size ship of 4,900 car equivalent units (CEU) had reached the mid-20s United States Dollars (USD) daily whereas that of a Panamax beam ship of 6,400 CEU was in the mid-30s USD daily. Naturally, these developments re-ignited investment appetite, first and foremost from a few of the sector's traditional tonnage providers [Eastern Pacific Shipping (EPS), Zodiac Maritime], but also from a few newcomers (SFL Corporation Ltd., H-Line Shipping), followed closely by a few of the leading operators (NYK, MOL, K Line). The sector, which for over a decade was under invested, marred by poor earnings and results, staged the greatest comeback in its history, literally rising from it's ashes like a phoenix.

Looking ahead, it is clear that – eventually – the logistical and supply chain disruptions will ease and return to normal. This should in turn release some pressure from the sector's current market dynamics, but not too much, since the bulk of the order book is scheduled for delivery in 2024 and until then the fleet is expected to shrink. In other words, space is due to remain tight for the next few years. During this time, the sector's next challenge on the road to sustainability is ensuring that the rise in charter rates is transferred to the shippers, namely the Original Equipment Manufacturers (OEMs), which for too long have dictated terms and benefited from rock bottom freight rates to transport their vehicles. On the demand side, downside triggers remain high with continued geopolitical tensions, inflationary pressures, recurring climate-related natural disasters, plus the possibility of another "black swan" event. With a bit of luck, however, this demand side volatility could be offset by the tight supply side.

Fleet and Average Age Evolutions



The Ongoing Anti-Trust Investigation

The sweeping investigation into the global car carrier price fixing scandal that has been ongoing since 2012 saw few developments last year. In February, Wallenius Wilhelmsen Ocean (WWO) was fined Australian Dollars (AUD) 24 million for criminal cartel conduct in Australia, a charge to which it had pleaded guilty a year earlier, marking an end to the investigation.

After nine years of penalties and convictions, we wonder whether we have seen the end of this unfortunate chapter.

It is clear that – eventually – the logistical and supply chain disruptions will ease and return to normal

Pictures: ***AN JI 32*** *,car carrier with approximately 19,500 square meters on 9 decks, including 1 hoistable, equivalent to approximately 2,300 CEU. Delivered in September 2021 by CSSC Qingdao Beihai Shipbuilding Heavy Industry Co. Ltd. in China and operated by Shanghai Ansheng Automotive Shipping.*

THE FLEET

A staggering 44 units, equivalent to approximately 98% of this orderbook, are endowed with dual fuel liquified natural gas (LNG) propulsion

Based on a capacity of 1,000 CEU and above, at the turn of the year, the fleet counted 713 vessels equal to just under 4.0 million CEU, with an average age of 14.2 years. It marks the second time in five years that the 4.0 million CEU threshold has not been breached – see graph *Fleet and Average Age Evolutions* (p142). Compared with 2020, the fleet eked out a rise of 0.6% year-on-year (Y-O-Y), capacity expanded by a mere 1.0% Y-O-Y, and the average age rose by approximately 13% Y-O-Y. This is the first annual growth over the past four years and only the second in the past five years, bringing the average over the past five years down by approximately -1.1% – see graph *Fleet Evolution* (p145). The overall orderbook ended the year at a whopping 45 units, representing approximately 6.3% of the current fleet, stretching out to 2025, and accounting for a total of approximately 309,000 CEU. The orderbook to fleet ratio almost trebled compared with 2020, attaining a level last seen in 2016 (6.8%). 42 units, or approximately 93% of this orderbook, are post-Panamax beam vessels, accounting for approximately 294,000 CEU, equivalent to approximately 95% of the CEU capacity on order. Most importantly, a staggering 44 units, equivalent to approximately 98% of this orderbook, are endowed with dual fuel liquified natural gas (LNG) propulsion, underlying the sector's embracing of this technology to cut greenhouse gas (GHG) emissions and to decarbonization. The single exception is the hull 514 (ex Siem Ashanti) from Uljanik Shipyard equipped with scrubbers, which was purchased by Neptune Lines, but was originally ordered by the Siem Group in 2014. Last but not least, 15 units are without committed employment upon delivery and are split between EPS with 9 units and Zodiac Maritime with 6 units.

A massive 41 new orders were placed during 2021, equivalent to approximately 274,000 CEU with an average intake of 7,000 CEU. This marks a 1,200% surge Y-O-Y. All 41 units are endowed with dual-fuel LNG propulsion. Spurred by a rapidly firming charter market, tonnage providers returned to shipyards around springtime and thereafter were quickly joined by operators. SFL, EPS, Wallenius Lines, MOL, K Line, H-Line Shipping, Shanghai Ansheng, Zodiac Maritime and NYK all placed orders respectively for four, nine, two, four, eight, two, two, six and two units. It marks an incredible turnaround from 12 months ago when speculative orders were a chimera. Of note is the order by Shanghai Ansheng, the first one by a Chinese operator for post-Panamax beam vessels.

Picture: ***GRANDE TEXAS****, car carrier with post-Panamax beam and with approximately 63,000 square meters on 13 decks equivalent to approximately 7,700 CEU with 4 hoistable decks. Delivered in January 2021 by Yangfan Shipyard in China to the Grimaldi Group and operated by Grimaldi Euromed.*

11 units were delivered during the year, accounting for approximately 61,000 CEU, with an average capacity of 5,500 CEU. While deliveries and CEU capacity increased by approximately 57% Y-O-Y and approximately 15% Y-O-Y, respectively, average capacity shrank by approximately 27% Y-O-Y because five units delivered were medium size capacity and two were small size capacity.

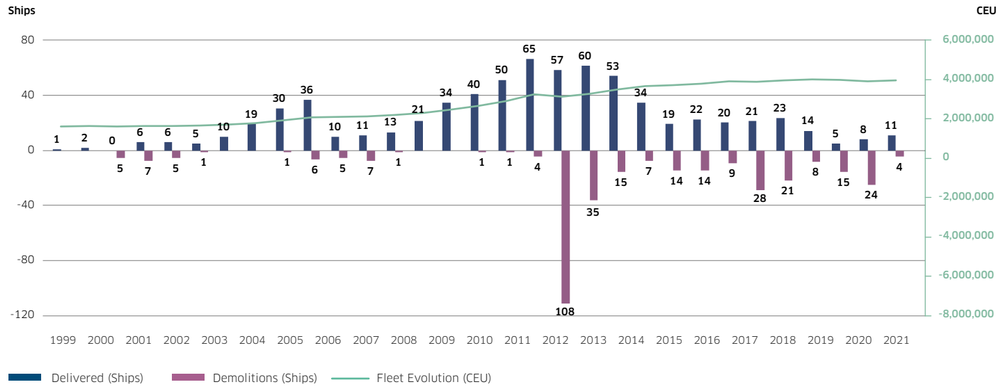
Two units saw their delivery dates deferred beyond 2021, accounting for approximately 7,200 CEU.

As the charter market reached pre-2008 levels and new orders exploded, demolition activity slumped with only 4 units plus 2 casualties, accounting for approximately 17,000 CEU. This was down approximately 75% Y-O-Y in terms of fleet and approximately 85% Y-O-Y in terms of capacity. The average age was approximately 21 years compared with last year's 23.

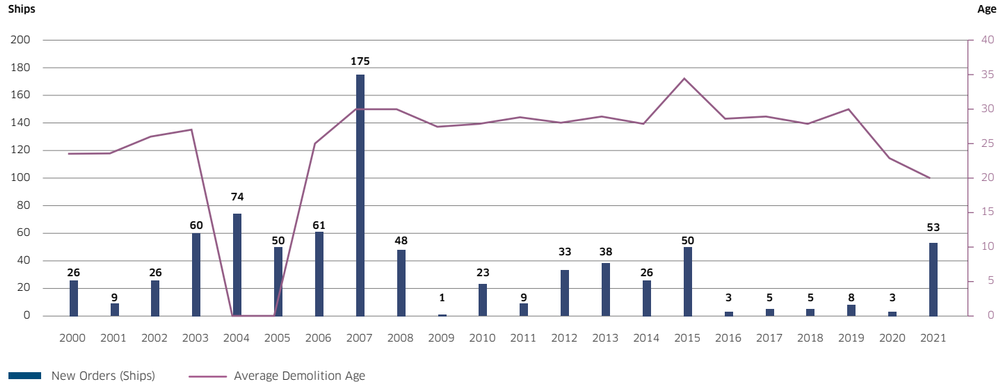
Looking ahead, 15 ships, or approximately 52,000 CEU, representing 2.1% of the current fleet, will be 28 years old and above in 2022. In 2023, 21 ships, or approximately 83,000 CEU, representing approximately 3.0% of the current fleet, will be 28 years old and above. If the prevailing market dynamics endure, it is likely that owners and operators will hold on to these vintage units as long as possible. However, the coming into effect on 1 January 2023 of the Energy Efficiency Existing Ships Index (EEXI) and Carbon Intensity Indicator (CII) could spoil such plans and force some owners and operators to opt for demolition rather than incur costly technical modification works as well as adopt painful operational changes to comply with these new regulations.

Sale & purchase activity surged for the second year in a row with 32 transactions, up 88% Y-O-Y. The average age was 14 years, and the average size was 4,800 CEU, for a total of approximately 152,000 CEU. The activity was dominated by arms' length sales, underlying a dramatic shift in investment appetite for the sector.

Fleet Evolution



New Orders vs. Average Demolition Age



Mercy Ships

Mercy Ships will soon operate a new hospital ship: the Global Mercy

Mercy Ships manages the world's largest civilian hospital ships, the Africa Mercy & Global Mercy and works with host nations to help fill gaps in healthcare systems, while serving the dire and immediate needs of their populations.

Mercy Ships has been providing medical care on ships for more than 40 years, visiting nearly 600 ports in more than 70 countries and helping more than 2.5 million people.

It stays up to 10 months in beneficiary countries, where it also helps build medical infrastructure by training local health professionals.

GLOBAL MERCY
37,000-gt Global Mercy has been delivered and will be commissioned for service soon in Africa.

MERCY SHIPS CARGO DAY

• Since 2016, the Shipping and Trading community has worked together to raise funds for **Mercy Ships** through the **Mercy Ships Cargo Day**, held once a year.

• Charterers are giving "Mercy" Cargoes to Shipbrokers who in their turn donate 50% of their commissions to **Mercy Ships**. Other participants such as Shipowners, Ship Agents and Marine Survey Companies can also make a donation.

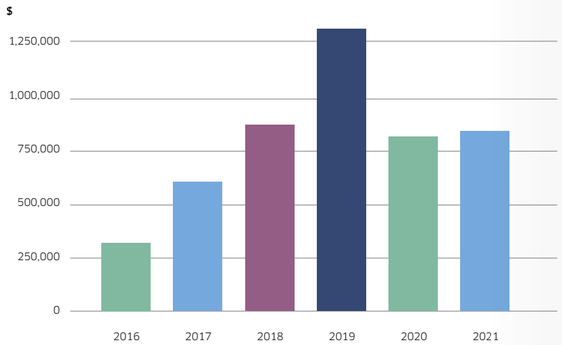
• Since its inception, the **Cargo Day** has raised almost $5 million for **Mercy Ships** with the help of more than 80 Shipping and Trading companies each year.

• In 2021, **Mercy Ships Cargo Day** managed to raise almost $800,000 that will help change the lives of thousands of people in Africa.

• Cargo Day 2022 will be held on November 9th, 2022. Please save the date!

Save the Date for the Next Cargo Day on November 9th, 2022.

Cargo Day Results



Year	Result ($)
2016	314,000
2017	673,000
2018	860,000
2019	1,300,000
2020	787,000
2021	793,000
Total amounts	**4,727,000**

Mercy Ships
CARGODAY2022

A NEW HOSPITAL SHIP: THE GLOBAL MERCY

• In 2013, with the assistance of **BRS** and many other partners, **Mercy Ships** signed contracts to build a state-of-the-art hospital ship at Tianjin Xingang Shipyard in China with Stena RoRo performing the supervision and inspection of the construction together with Mercy Ships.

• The new 37,000 GT ship, costing $200 million to build and equip, has been named ***Global Mercy*** and is the largest civilian hospital ship in the world.

• The ***Global Mercy*** made her maiden voyage to the Belgian Port of Antwerp where medical equipment will be installed and commissioned. The ***Global Mercy*** is now on course for its first mission – making our dream to bring even more hope and healing to the world a reality.

• With the addition of the ***Global Mercy***, the medical capacity of **Mercy Ships** to deliver free operations to people in African countries will more than double.

• The 174-metre-long ***Global Mercy*** will have six operating rooms and accommodate up to 950 volunteers, including surgeons, maritime crew, cooks, and teachers. It will be equipped with first-class training facilities, including equipment for virtual reality training and other care simulation.

16.9 million people die every year because they do not have access to medical care

TESTIMONIAL

Mercy Ships - Story of Houleye

Houleye was born with a strange mass on her neck. On many parts of the world, children suffer from conditions that are treatable. Children like Houleye are full of potential, but often they're limited by conditions outside of their control. **Mercy Ships** is committed to helping everyone overcome their shame and reach their full potential. On board the ***Africa Mercy***, Houleye received free surgery that **will change her life forever.**

More on:
https://mercyships.ch/en/action-africa/patients-stories/story-of-houleye/

Join us now on www.cargoday.org

*Picture: **HOULEYE** was born with a strange mass on her neck. She received surgery on the Africa Mercy.*

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