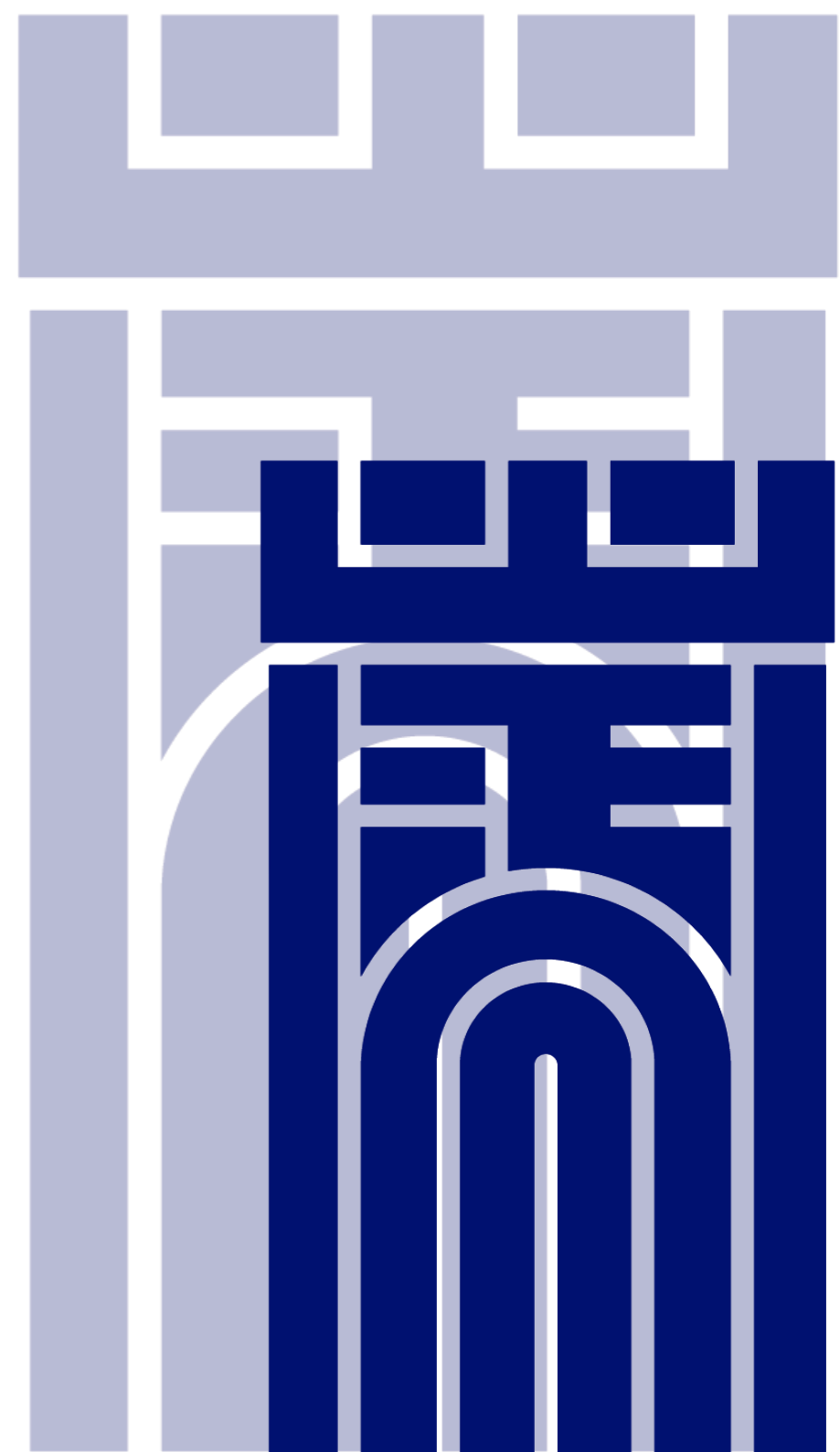


SHIPPING MARKET REVIEW – MAY 2022



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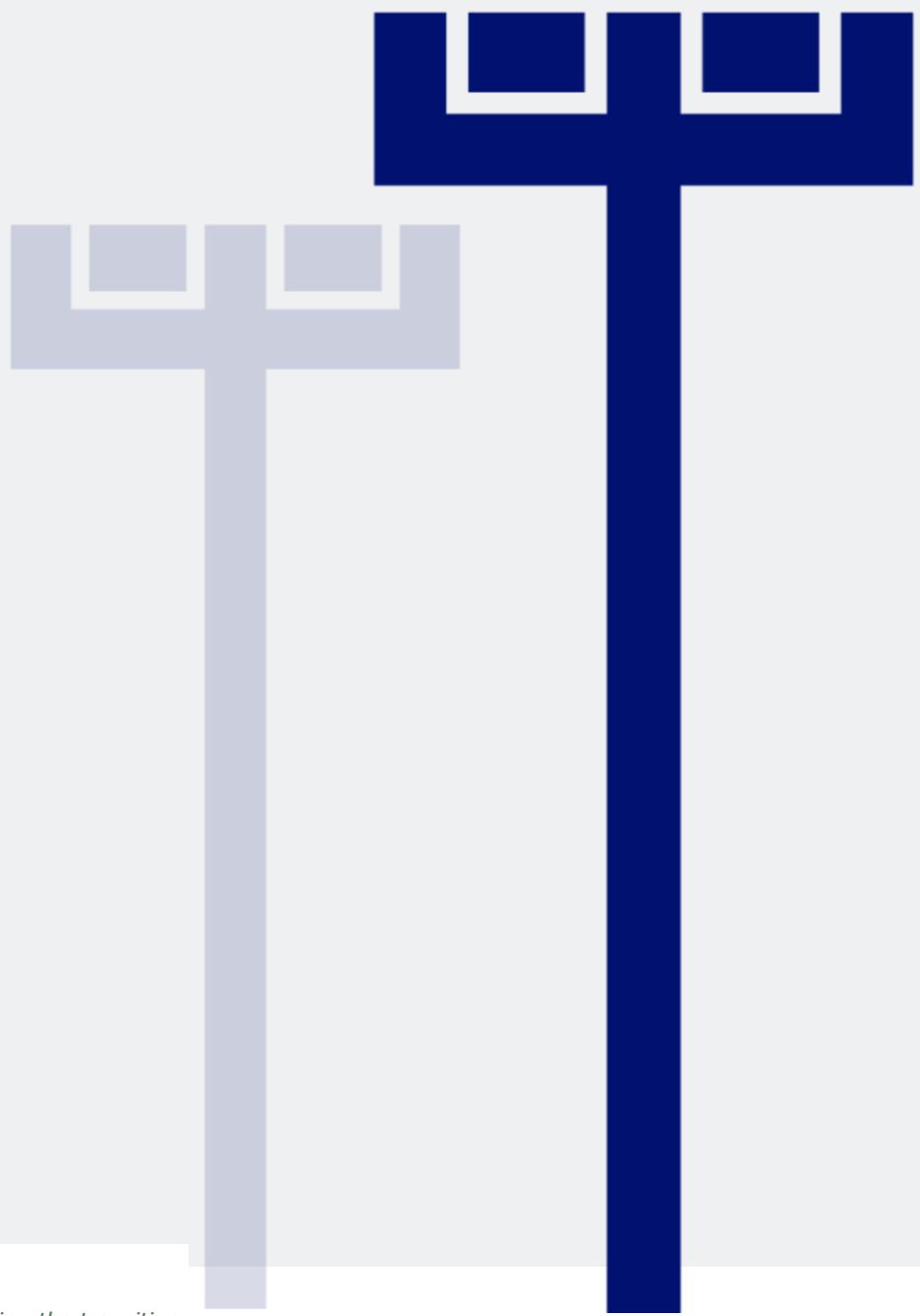


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TRANSFORMING BEYOND FUELS

Shifting the focus from asset play to cash flow yield



EXECUTIVE SUMMARY

Navigating decarbonisation: A new playbook for value creation in the shipping industry?

The shipping industry has not yet reached a point where demand for zero-carbon fuels is large enough for suppliers to make large investments tailored to the maritime sector alone. Alternative fuels currently cost two to five times as much as more conventional fuels, which means they are not commercially viable. A stepwise approach to decarbonisation will allow green corridors to emerge while shifting value creation from an asset game to long-term cash flow yield. It remains to be seen if new business models will begin to redefine the competitive landscape.

KEY TAKEAWAYS:

1. The global decarbonisation agenda is shaping sectors and industries: the economy is trending to become more circular, renewable and locally focused. Many seaborne trade volumes are likely to continue growing, but cargo volumes for large vessels transporting virgin materials or fossil fuels over long distances are set to peak within the next ten years. [\(p. 6\)](#)
2. The shipping industry is expecting to see increasing returns on invested capital in the short to medium term. If this plays out, we may see more investments going into new fuel commitments and new vessels. Green corridors are on the rise, but the fragmented ownership landscape increases the risk of hard-to-scale island solutions between few players. Many investments could end up being stranded during the early phases of the transition. [\(p. 7\)](#)
3. It will take time to upgrade fleets of vessels and build new fuel infrastructures. By the time this has been achieved, underlying demand may have changed radically. With players outside the shipping industry working hard to reduce all three emission scopes, seaborne trade patterns are likely to change. Some seaborne trade volumes will evaporate. Fleet profiles may change significantly when reporting of Scope 1, 2 and 3 emissions begins to define industry outlooks. [\(p. 8\)](#)
4. The next generation of vessels, ordered to trade in some version of a green corridor, may essentially turn into floating infrastructure that serves fixed cargo volumes and operates with fixed costs and fixed incomes. These vessels are likely to offer a very different value play to traditional vessel ownership. Vessels trading in green corridors will not be competing with existing fleets in freight markets, but they are likely to set the environmental benchmarks that impact existing vessels' earnings potential. [\(p. 10\)](#)
5. The ability to scale the concept of green corridors beyond the first-mover initiatives is largely a question of mobilising critical mass across various sectors and industries that share the same location and the ambition to decarbonise. Everyone is struggling to decarbonise. It is easy to demand green deep-sea shipping but difficult to deliver it. But by leveraging a cargo-first principle, while analysing cargo flows and bunkering infrastructure that can be matched to form a green corridor, it seems possible to de-risk and scale the initial learnings from first movers. [\(p. 11\)](#)
6. The introduction of green corridors presents new dynamics for value creation in the shipping industry. Long-term contracts with not only cargo owners but also fuel producers will allow long-term fleet efficiency optimisation at the expense of access to the asset game. This is a shift that will champion cash flow stability, economies of scale, standardisation and lower cost of capital. It remains to be seen if new business models will begin to redefine the competitive landscape. [\(p. 12\)](#)

GEARING UP FOR CHANGE

Seaborne demand is changing alongside decarbonisation of the global economy

The global decarbonisation agenda is shaping sectors and industries: The economy is trending to become more circular, renewable and locally focused. Many seaborne trade volumes are likely to continue growing, but cargo volumes for large vessels transporting virgin materials or fossil fuels over long distances are set to peak within the next ten years. Still, short-term dynamics seem largely supportive for freight rates and secondhand prices across segments, but the industry is heading for radical long-term changes to how value is created.

A large part of the global economy is working to reduce its reliance on fossil fuels. This reliance will not end within a couple of years, however. The transition will occur over a number of decades. Renewable energy cannot meet global energy demand alone. We need to maximise the use of existing low-emission sources, including nuclear power, to lower and eventually minimise the global use of fossil fuels.

The reliance on fossil fuels is causing geopolitical tensions, extreme weather and infrastructure disruptions that reverberate around the global economy. Global energy markets are struggling to control energy prices and keep supply shocks at bay. Risks seem to be on the rise – from the health and climate impacts of pollution to the migration flows driven by drought, flood, food shortages and war.

DECARBONISATION IS CHANGING SEABORNE DEMAND

The shipping industry often benefits from short-term disruptions, since more cargo needs to be transported over longer distances. Even so, the short-term benefits for the industry may easily be outweighed if the disruptions translate into fundamental demand changes playing out in the medium or long term.

Increased access to locally produced renewable energy can alleviate some of these risks, leading to greater energy independence and wider access to affordable energy sources. This is a system that is designed for the local community – taking advantage of local resources such as wind, sun, geothermal and hydropower while incorporating energy-efficiency measures across sectors and industries.

Seaborne trade volumes and cargo flows are simply mirroring the global economy's interconnected value and supply chains. When we begin to change the foundations of the global economy, we begin to recalibrate and reinvent value and supply chains across sectors and industries. Think along the lines of replacing fossil fuels with renewable energy and virgin materials with circular materials, while introducing highly automated local production and manufacturing. Innovative business models will be offering more customers access to more products and services, while using fewer resources.

SEABORNE TRADE VOLUMES MAY INCREASINGLY SHIFT TOWARDS SMALLER PARCEL SIZES

Many seaborne trade volumes may continue to increase alongside GDP growth, global population growth and urbanisation, but fewer vessel segments may benefit. The larger vessels transporting large quantities of virgin materials or fossil fuels over long distances are likely to see demand peak within the next ten to 15 years. Cargoes related to fossil fuels currently account for roughly 40% of annual seaborne trade volumes. Seaborne trade volumes may increasingly shift towards smaller Dry Bulk volumes, containerised goods and Ro-Ro cargo.

GREEN CORRIDORS

More players are expected to invest in the energy transition

The shipping industry is expecting to see increasing returns on invested capital in the short to medium term. If this plays out, we may see more investments going into new fuel commitments and new vessels. Green corridors are on the rise, but the fragmented ownership landscape increases the risk of hard-to-scale island solutions between few players. Many investments could end up being stranded during the early phases of the transition.

The shipping industry has not yet reached a point where demand for zero-carbon fuels is large enough for suppliers to make large investments tailored to the maritime sector alone. Alternative fuels currently cost two to five times as much as more conventional fuels, which means they are not commercially viable.

There is a great deal of uncertainty surrounding the fuel choice of the future. Large-scale supply investments to produce green alternative fuels through renewable energy sources will be essential for decarbonising not only the shipping industry but several of the other hard-to-abate industries.

FIRST WAVE OF DECARBONISATION: GREEN CORRIDORS

Green corridors constitute a realistic vehicle for introducing zero-carbon vessels and fuels across trade lane(s) once the necessary shoreside energy infrastructure has been established. Green corridors are essential to support first-mover viability. Policy support and route-specific collaboration across the value chain are aimed at ensuring that benefits to first movers outweigh the costs and risks they are incurring.

The stepwise approach to decarbonisation through green corridors is especially relevant if we accept that it is not realistic to expect a major energy transition to occur simultaneously and uniformly across the globe.

The industry's ability to decarbonise beyond green corridors requires the fuel price gap to narrow significantly. Standardisation and scale are necessary to bring costs down. The current multi-fuel landscape is keeping costs high, impeding an industry-wide shift

towards zero-carbon fuels, and increasing the risk of backing the wrong solution.

A FRAGMENTED ASSET SIDE IS STRUGGLING TO CHAIR THE TRANSITION

The fragmented industry structure complicates the articulation and development of an industry-wide strategy for zero-carbon fuels. Still, the industry is expecting to see increasing returns on invested capital in the short to medium term. If this plays out, we may see more investments going into new fuel commitments, new vessels or technology solutions working to extend the lifetimes of existing vessels by improving their fuel and energy efficiency. Ambitions are high and intentions are good, but the fragmented ownership landscape increases the risk of hard-to-scale island solutions between few players that end up generating significantly less value than a scaled solution would have done.

NEW OR EXISTING PLAYERS DEFINING THE FUTURE OF SHIP OWNING?

It is not always the best solution that ends up defining an industry outlook. Often, it is the solution that gains the most market traction. Many existing players are divesting their legacy fleets (i.e. becoming asset light), while expanding into becoming service providers (e.g. pool operators, data intelligence providers, etc.) for the industry. Some are only scaling down asset ownership but maintaining an asset play, while expanding into trading others' fleets. Somebody will need to own the fleet of the future, but few of the established players seem to be working to optimise ownership of vessels trading in green corridors.

REDEFINING GLOBAL TRADE

The ripples from decarbonisation are being felt beyond just fuels – entire sectors and industries are up for review

It will take time to upgrade fleets of vessels and build new fuel infrastructures. By the time this has been achieved, underlying demand may have changed radically. With players outside the shipping industry working hard to reduce all three emission scopes, seaborne trade patterns are likely to change. Some seaborne trade volumes will evaporate. Fleet profiles may change significantly when reporting of Scope 1, 2 and 3 emissions begins to define industry outlooks.

The shipping industry accounts for 3% of global CO₂ emissions. This clearly indicates that 97% of emissions are attributable to other industries. How will seaborne trade volumes and trading patterns develop when these industries begin to decarbonise?

Many companies have set ambitious targets for their climate footprints. Few seem to have the luxury of waiting for a perfect solution. Multiple industries are working simultaneously on several tracks, with the aim of delivering an immediate impact, while continuing to strive for long-term solutions. Carbon pricing could clearly speed up the process and thereby be part of the solution, together with measures to level the playing field such as additional policy and regulatory initiatives.

With or without carbon pricing or additional policy and regulatory initiatives, it will take time for the shipping industry to reduce CO₂ emissions and build new infrastructures. It may take at least five to ten years before a new generation of vessels, powered by zero-carbon fuels, defines more than pilot projects and early green corridors. By that time, many sectors and industries are likely to have shifted their attention beyond vessels' fuel emissions to minimising all three emission scopes simultaneously.

EFFICIENCY LOSSES REDUCED THROUGH DESIGN INNOVATION

These ambitions may take many forms. Some sectors or industries will aim to reinvent not only the amount of material used and transported, but also the choice of material, product designs, production processes, production locations, and product/material lifecycles (i.e. circularity and material yield loss).

The global call across all sectors and industries to reduce Scope 1, 2, and 3 emissions will

reshape the global economy. Seaborne trade volumes will reflect many of the emerging changes. Trade patterns are likely to change significantly towards the 2030s and 2040s. For some vessel segments, demand will increase, while others will see large parts of their markets disappear.

Take Product Tankers as an example. Product Tankers clearly face the risk of electric vehicles cannibalising global demand for diesel and gasoline. This transition is gaining pace and may soon – let's say between 2025 and 2030 – begin to reduce seaborne trade volumes. However, the pressure to minimise the environmental footprint from operating the vessels is likely to result in increased focus on minimising ballasting and waiting times. Increased stakeholder coordination and carbon accounting may allow more "just-in-time" planning. Just-in-time planning is often likely to reduce speeds and bunker consumption, while reducing fleet productivity. Reduced fleet productivity clearly encourages individual vessel segments to transit towards lower cargo volumes or supports freight rates in segments where cargo volumes continue to grow. This trend is likely to be seen across vessel segments.

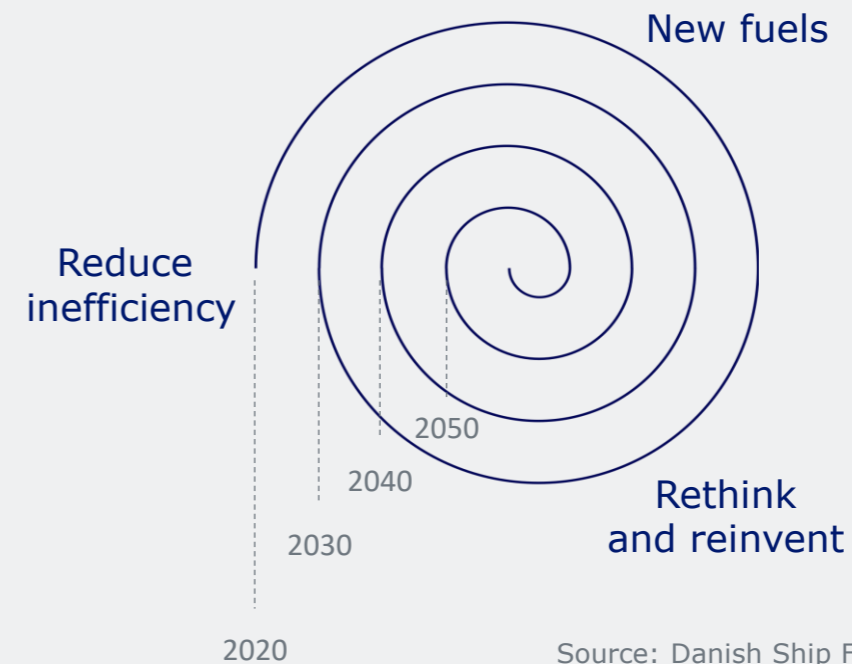
DECARBONISATION IS ABOUT MUCH MORE THAN JUST FUELS

The key message is that decarbonisation is about much more than just fuels. Global consumer preferences are set to change massively. Seaborne trade volumes are likely to change and fleet profiles may alter significantly when reporting of Scope 1, 2 and 3 emissions begins to define industry outlooks. Environmental performance is relative. The arrival of new high-performing vessels trading in green corridors will redefine the earnings potential for existing players that previously were forerunners.

Decarbonisation of the global economy requires massive changes beyond fuels. More circularity may reduce inefficiencies and give rise to novel solutions that allow more economic activity using fewer resources – and demand less transportation of virgin materials and fossil fuels.

GLOBAL DECARBONISATION

The introduction of Scope 1, 2 and 3 emission accounting will eventually reduce seaborne cargo flows and redefine the shipping industry



BUSINESS MODEL INNOVATION

Green corridors may spark significant business model innovation and an important shift in value creation

The next generation of vessels, ordered to trade in some version of a green corridor, may essentially turn into floating infrastructure that serves fixed cargo volumes and operates with fixed costs and fixed incomes. These vessels are likely to offer a very different value play to traditional vessel ownership. Vessels trading in green corridors will not be competing with existing fleets in freight markets, but they are likely to set the environmental benchmarks that impact existing vessels' earnings potential.

The next generation of vessels is likely to be tied to long-term employment contracts and purchase agreements for alternative fuels. These vessels are unlikely candidates to participate in future asset games. That is not to say that the potency of asset games is expected to weaken – quite the opposite in fact, as volatility tends to increase in tight markets with low availability – but the participating group of vessels is likely to shrink as the industry decarbonises.

Owning vessels that are basically floating infrastructure serving fixed cargo volumes and operating with fixed costs and fixed incomes is likely to be a very different value play than traditional vessel ownership.

A NEW PLATFORM PLAY FOR VALUE CREATION

The new generation of vessels could be owned by infrastructure funds that create value not only from standardisation and scale but also from cash flow stability, low maintenance costs and low capital costs. Fleets are likely to be designed for closed-loop circularity and powered by a low or zero-carbon fuel. To allow regular efficiency upgrades to be implemented without demanding additional capital injections from equity owners, it would be natural to consider a long-term servitisation model where OEMs sell guaranteed uptime at a fixed price while capitalising on efficiency gains delivered by upgrades.

The cash flow yield from traditional vessel ownership is weak outside occasional freight rate super cycles. Value is often created from selling existing vessels during times of extraordinary freight rates. The nature of the asset game disincentivises large-scale upgrades of existing vessels and prevents more innovative thinking, also for newbuilding

programmes. Investments with longer repayment periods are almost impossible to fully capitalise prematurely.

The infrastructure model is designed to optimise the cash flow yield from operating the vessels, while ending the asset game. This generation of vessels will be built for circularity and regular efficiency improvements whose costs can be paid back over long periods. Cost leadership will broaden when more vessels are added to the fleet and the potential for data monetisation increases with the size of the fleet. Analysis and leveraging of real-time data will enable increased fleet efficiency, as well as higher fuel efficiency and lower costs, including the use of predictive maintenance.

A SYSTEMIC IMPACT ON EXISTING VESSELS' POTENTIAL FOR VALUE CREATION

The new generation of vessels is unlikely to compete with existing vessels for cargo, but it will set the best-in-class environmental benchmark. Owners operating their own vessels will need to consider whether the earnings spread between CII ratings justifies the required upgrades.

Traditional owners that do not operate their own vessels may find it difficult to capitalise on the abatement potential until incentives among stakeholders become more aligned. In today's charter market, it is uncommon for the vessel owner to bear the burden of a vessel's inefficient fuel consumption, since it is the charterer that pays for the fuel. This could begin to change with the introduction of CII ratings, or the short-term charter model could lose competitiveness with owners that operate their own vessels.

HOW TO DE-RISK AND GET STARTED?

Mobilising critical mass among potential buyers of green fuels

The ability to scale the concept of green corridors beyond the first-mover initiatives is largely a question of mobilising critical mass across various sectors and industries that share the same location and the ambition to decarbonise. Everyone is struggling to decarbonise. It is easy to demand green deep-sea shipping but difficult to deliver it. But by leveraging a cargo-first principle, while analysing cargo flows and bunkering infrastructure that can be matched to form a green corridor, it seems possible to de-risk and scale the initial learnings from first movers.

The creation of green corridors will allow first movers to begin walking the talk. Still, the establishment of green corridors will require a lot of coordination and commitments from players willing to engage.

By bringing together potential consumers of green fuels across various sectors and industries sharing the same location, it may be possible to mobilise sufficient critical mass to justify large-scale local production, at the same time bringing down fuel prices and de-risking the investment.

DECARBONISATION BEYOND THE SHIPPING INDUSTRY

Few, if any, shipping players are large enough to do this on their own, but they can benefit from joining a group of players that collectively can guarantee a scaled and regular offtake.

Many of the early green corridors have built on LNG as a fuel to leverage on existing distribution networks. Moving towards zero-carbon fuels will require the establishment of new production and distribution networks alongside securing the offtake.

The risks associated with the establishment of green corridors are not easy to ignore for any shipowner. A firm commitment from cargo owners in tandem with a fuel offtake agreement will allow vessel owners to reduce risk, but this model may not be equally accessible across vessel segments and trading routes. Not every step taken will be for the purpose of introducing zero-carbon fuels; increased use of drop-in fuels or LNG/LPG will also be targeted.

In much of today's green corridor discussions, the focus is on identifying shipowners willing to move first. We may need to broaden the perspective, however, to include a cargo-first approach. When analysing cargo flows and bunkering infrastructure that can be matched to form a green corridor, it may be more accessible to work with the cargo owners and structure an employment profile before targeting a vessel and an ownership model.

SUPERCHARGED BY LARGE CORPORATES FROM VARIOUS SECTORS AND INDUSTRIES

The cargo-first structure could work along similar lines to the large corporate brands that aim to reduce their emissions across all three scopes. Exporters of nickel, cobalt or lithium may not necessarily be the first to push for green corridors, but they could be when car manufacturers step up their push towards climate neutrality. We are already seeing some of the largest car manufacturers introducing circularity in their production lines. Many are aiming for closed-loop cycles targeting very low yield losses across most components, including batteries for electric vehicles. It seems natural to assume that their imports of raw materials will be based on similar climate ambitions.

The new green vessels could be owned by existing vessel owners or by infrastructure funds. In either structure, they are likely to share the characteristics of fixed income and cost structures with balanced maturities to manage risks. For the individual owners, this model may allow them to decarbonise gradually, while maintaining larger parts of their existing operations.

PERSPECTIVES AND KEY TAKEAWAYS

Long-term optimisation of fleet efficiency may replace the asset game

The introduction of alternative fuels for vessels trading in green corridors presents new dynamics for value creation in the shipping industry. Long-term contracts with not only cargo owners but also fuel producers will allow long-term fleet efficiency optimisation at the expense of access to the asset game. This is a shift that will champion cash flow stability, economies of scale, standardisation and lower cost of capital. It remains to be seen if new business models will begin to redefine the competitive landscape.

The call to decarbonise the global economy across sectors and industries demands radical thinking on how to reinvent many of the basic elements of everyday life. We all know that there are more ways to save materials of concern than to increase their supply. But it is less obvious how to seize the opportunity and turn it into a scalable and profitable business.

Some of the most transformative effects may come not from actual upgrades to the material or product of concern but from more productive use through new business models, digitalisation (think virtual mobility, for example) and better system designs. These changes are likely to accelerate the pace of efficiency gains across sectors and industries significantly, beyond anything we have seen before.

THE CHALLENGE IS STRATEGIC RATHER THAN OPERATIONAL

In the shipping industry, the call to decarbonise is quickly becoming operational, with discussions on fuel mix, fuel production, distribution networks, green corridors and safety issues. It is clear that there is no silver bullet for tackling these operational challenges.

Shifting to new fuels will not, in isolation, form a clear pathway to the future – the ability to yield a return on invested capital will not improve just because the fuel mix changes. The forces at play are more fundamental: demand patterns are likely to change; more cargoes are likely to be moved on long-term contracts at fixed prices; and some seaborne trade volumes are likely to shrink, while others are set for strong growth in demand.

The prospective EEXI and CII ratings are expected to cause fragmentation in the market,

with the lowest performers likely to find it increasingly difficult to secure employment, and the introduction of new vessels trading in green corridors is likely to define the best-in-class environmental benchmark. Owners operating their own vessels will have to consider whether the earnings spread between CII ratings justifies the required upgrades to compete on certain trades, while some tonnage providers may find it increasingly difficult to compete.

Spot cargo volumes are set to shrink with the advent of green corridors. Green corridors are likely to be “A”-rated trades. The ability to trade a vessel to a higher CII rating will become more and more difficult if the good routes are increasingly employed by newer green vessels trading on long-term cargo contracts.

VALUE WILL BE CREATED FROM OPERATING THE VESSEL RATHER THAN SELLING IT

Drivers of value creation may slowly change. The asset game may still prevail, but the number of vessels participating in the sport may decline over time. The industry will begin to see more value created by cash flow yields from operating the vessel. This is a shift that will reward cash flow stability, economies of scale, standardisation and lower cost of capital.

The competitive landscape is likely to change in favour of owners that apply long-term planning to the operation of their fleets. The impact is likely to show as early as within the next two to four years. It remains to be seen if the stable volume part of individual markets will consolidate towards an infrastructure fund model that favours a low but stable return on invested capital. •

SHIPPING MARKETS AT A GLANCE



SHIPPING MARKETS AT A GLANCE

High earnings and infrastructural bottlenecks

The shipping industry has entered a period of extraordinarily high earnings across multiple vessel segments. Secondhand prices and newbuilding prices are elevated. In 2021, transaction volumes in the sale and purchase market surpassed the previous peak from 2007, with assets worth USD 50 billion traded. A massive USD 110 billion was invested in new vessels last year. Almost 40% of vessels on order are planned to have some kind of alternative fuel capability. We expect to see more players participating in the industry's transition towards zero carbon in the years to come. An increasing number of vessels will be ordered to trade in green corridors, where employment profiles are likely to be matched by fuel offtake agreements.

CLARKSEA INDEX AND SECONDHAND PRICES

Shipping markets have continued to perform strongly in 2022, underpinned by a recovery in trade volumes, widespread supply chain inefficiencies and modest fleet growth. The ClarkSea Index doubled from USD 14,900 per day in 2020 to USD 28,700 per day in 2021, rising further to USD 40,600 per day in April 2022. The massive influx of cash has translated into record-high S&P activity and the highest newbuilding volumes since 2014.

The average secondhand price doubled between January 2021 and January 2022, only to increase by an additional 5% during the first quarter of 2022. Prices for older vessels (ten years plus) appreciated more than younger vessels.

The high freight income supported an active sale and purchase market during 2021, with more than 2,500 vessels (representing USD 50 billion) transacted. The high activity has continued into 2022, with 557 vessels (USD 13 billion) sold during the first three months of 2022.

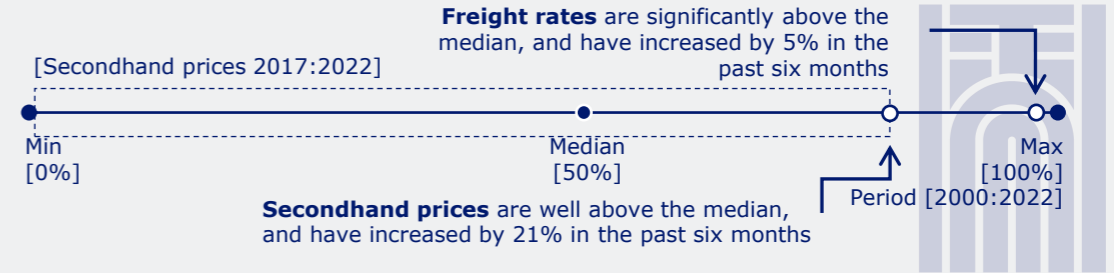
There was also strong contracting activity. More than 1,800 vessels (representing USD 110 billion) were ordered in 2021 and an additional 300 vessels (USD 25 billion) were contracted during the first quarter of 2022.

Newbuilding prices increased by 21% in 2021 and by a further 2% during the first quarter of 2022.

The high market activity was largely concentrated to the Container, Dry Bulk and Gas Carrier segments.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – MAY 2022



Distance-adjusted seaborne demand grew by 3.2% in 2021, with global demand up by 3.3% and slightly reduced distances subtracting 0.1 percentage point. The world fleet has expanded by 2.9%, while speeds have remained fairly constant. Infrastructural bottlenecks have reduced fleet productivity, especially for Container and Dry Bulk vessels. Freight rates and secondhand prices have been supported by an improvement in fleet utilisation.

Deliveries: The annual inflow of new vessels remains stable at around 1,100 vessels. Few of the larger Dry Bulk vessels have been delivered, which has reduced the dwt level.

Scrapping remained stable at 24 million dwt in 2021, but Tankers have taken over from Dry Bulk and Containers as the vessel type with the most demolitions.

Contracting almost doubled between 2020 and 2021 but was skewed towards Container, Dry Bulk and Gas Carriers. High activity is expected for 2022.

The **orderbook** represents almost 10% of the fleet, of which 72% is scheduled for delivery by year-end 2023.

Seaborne trade volumes increased by 3.3% during 2021 and are expected to expand by 3.5% in 2022.

Distance-adjusted demand: Travel distances were largely unchanged during 2021 but are expected to increase somewhat during 2022.

Speeds have remained largely unchanged during 2021 and 2022 relative to 2020.

HEALTHY MARKET SENTIMENT AND REDUCED FLEET PRODUCTIVITY

It is taking time for supply chain disruption to ease

The world fleet expanded by approximately 2.9% in 2021 and is expected to add new capacity corresponding to 3.6% of the fleet during 2022 (before scrapping). The orderbook represents 10% of the fleet but is heavily skewed towards Container, LNG and LPG Carriers.

Global seaborne trade volumes are estimated to have returned to 2019 “pre-Covid” levels in 2021. However, demand trends have varied significantly by sector and commodity.

Seaborne demand volumes of crude and refined oil products, cars and coal remain below 2019 levels, while the other main seaborne categories have surpassed their

2019 levels and employed the incoming capacity, supporting freight rates and secondhand prices.

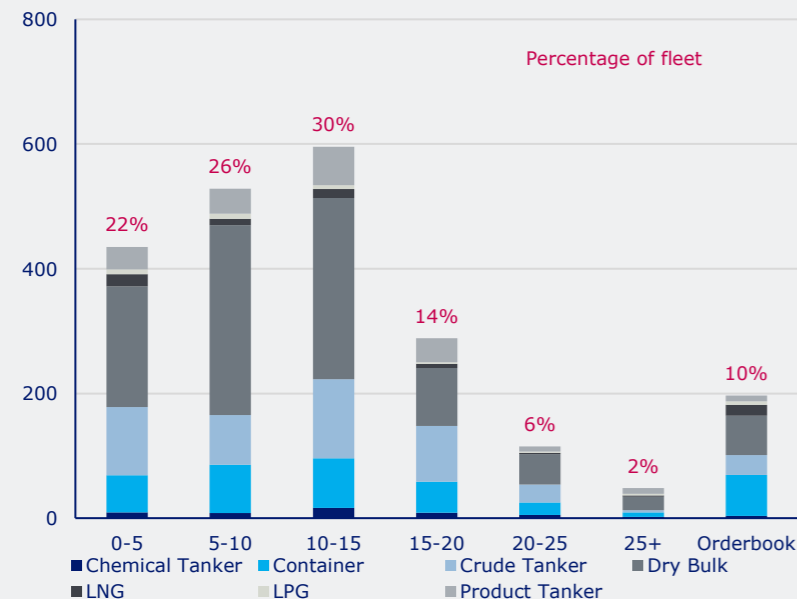
However, the increase in Container volumes is not of a magnitude that can absorb the incoming capacity suggested by the current orderbook. The cargo-carrying capacity of the Container fleet has been significantly constrained by supply chain bottlenecks and port lockdowns. We see an elevated risk of surplus capacity, lower freight rates and declining secondhand prices from 2023, when a large number of new vessels are scheduled to enter the fleet.

The IMO’s EEXI and CII regulations come into force from

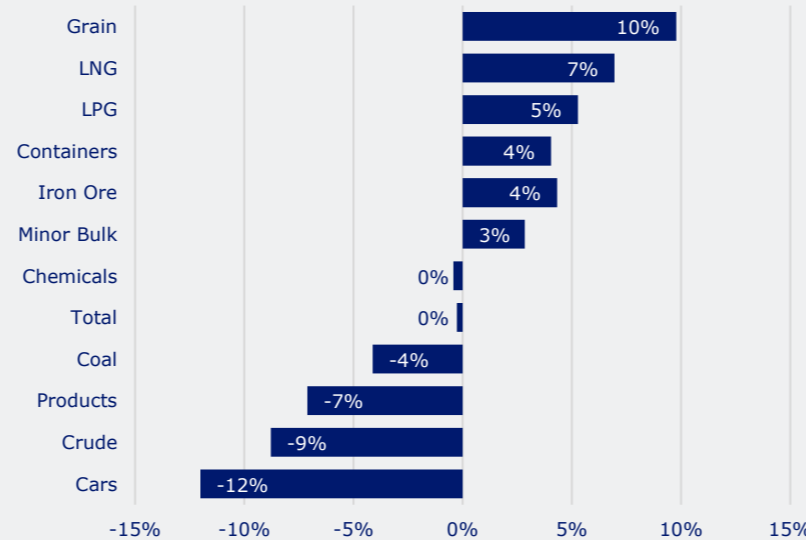
January 2023. These are designed to reduce vessel supply and incentivise fleet renewal by requiring older or less efficient vessels to reduce speeds or implement retrofitting to stay compliant. Non-compliant vessels are expected to be prohibited from trading.

CII implementation is thus expected to reduce vessel supply across segments, including Containers. But it is unlikely to absorb surplus vessel capacity – through slow steaming or scrapping – as early as 2023 or 2024. Increased earnings volatility is likely in 2023 and 2024.

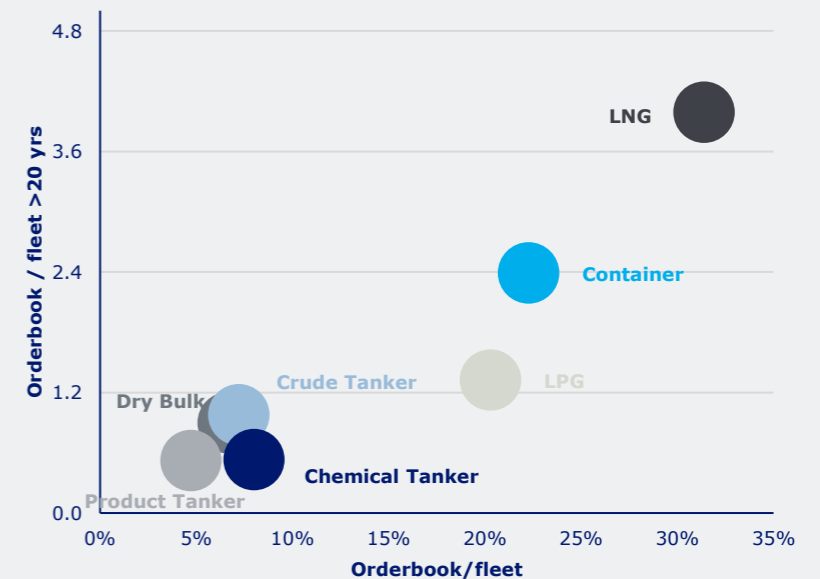
AGE DISTRIBUTION (MILLION DWT)



GLOBAL SEABORNE TRADE (2021 VS 2019, TONNES)



FLEET RENEWAL POTENTIAL (DWT)



Source: Clarksons, Drewry, Danish Ship Finance

WHAT TO EXPECT FOR 2022 AND 2023?

Risks to the global baseline are tilted to the downside, but shipping markets are likely to stay generally positive

Replacement costs for existing vessels have risen sharply since the start of 2021, because newbuilding prices have increased by 24%. The increase in newbuilding prices has been driven by higher steel prices and component costs, more advanced vessels being ordered and lower availability at the first-tier yards that have secured new orders.

The high freight rate environment combined with increasing replacement costs has propelled secondhand prices upwards.

We are seeing a trend where prices of vessels older than ten years are increasing more strongly than prices for their younger counterparts, even though the incoming environmental regulations are expected to impact older vessels the most.

This could indicate that the market is more optimistic in the short to medium term, while the longer-term outlook is somewhat clouded by risks related to demand outlooks and fuel configurations.

Market dynamics seem largely supportive of freight rates and secondhand prices staying high in 2022. Supply chain disruptions continue to keep fleet productivity low, and the incoming vessel capacity is likely to be absorbed by demand growth and longer travel distances.

The IMF predicts that global economic growth will moderate from 6.1% in 2021 to 3.6% in 2022 and 2023. This largely reflects lower growth

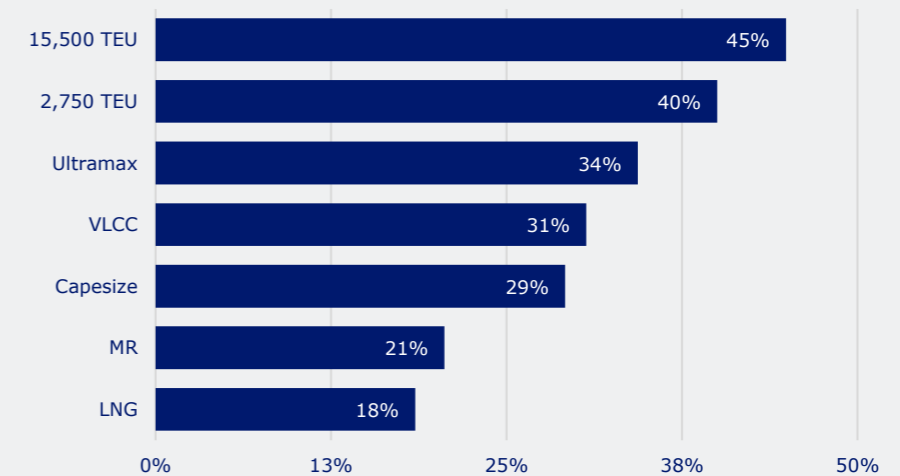
expectations for the US, China and the EU.

Risks to the global baseline are skewed to the downside. The IMF's projections are contingent on the economic impacts of Russia's invasion of Ukraine, adverse Covid-related health outcomes and the increased risk of debt crises in emerging economies following monetary tightening, especially in the US.

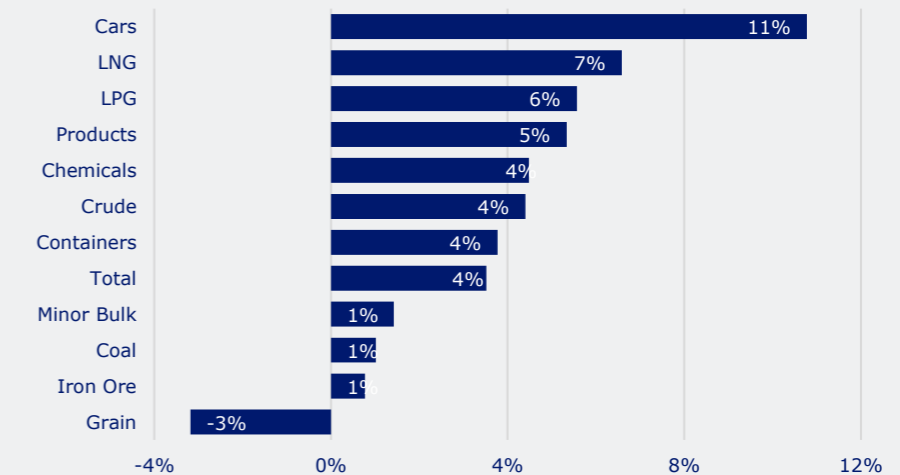
Elevated inflation is expected to persist, with ongoing supply chain disruptions and high energy prices continuing in 2022. Assuming inflation expectations stay well anchored, inflation should gradually decrease as supply-demand imbalances wane in 2022 and monetary policy in major economies responds.

The 2023 outlook for the main shipping segments varies. Dry Bulk markets remain generally strong, while the larger vessel segments should be monitored more closely. Crude and Product Tankers seem on track for healthy recoveries as long as cargo supply grows to meet demand. Container and LPG Carriers are scheduled to take delivery of a massive number of new large vessels in 2023, which is likely to pressure earnings and secondhand prices. The LNG segment seems positioned for strong demand growth.

NEWBUILD PRICE CHANGE SINCE THE START OF 2021



GLOBAL SEABORNE TRADE (2022 VS 2021, TONNES)



Source: Clarksons, Danish Ship Finance

NAVIGATING THE FUTURE FUEL LANDSCAPE

Large investments in new vessels and new fuel strategies are expected in the coming years

Shipping markets are experiencing their most profitable period for over a decade. Some owners are aiming to maximise their returns on invested capital without investing much in the industry's green transition, while others see the transition as a great business opportunity.

Russia's invasion of Ukraine has fuelled a massive surge in energy prices. Vessels not fitted with scrubbers (approximately 75% of the world fleet in GT) are facing historically high bunker prices, since the price of very low sulphur fuel oil (VLSFO) is approaching USD 900 per tonne.

Owners that have invested in scrubbers are saving USD 250 per tonne bunker, as the price of high sulphur fuel oil (HSO) is trading close to USD 640 per tonne.

Energy-saving technologies are reducing costs across all markets, but pursuing the wrong fuel strategy could turn out to be very costly.

A growing number of players are investing in upgrades to existing vessels, and many are also investing in new vessels that are somehow prepared for an unclear but greener future.

In January 2023, the IMO's new environmental regulations (EEXI and CII) come into force. The aim of the regulations is clearly to support the transition by forcing less efficient vessels to lower speeds, be upgraded or ultimately be scrapped if the required upgrades to be compliant are considered too costly.

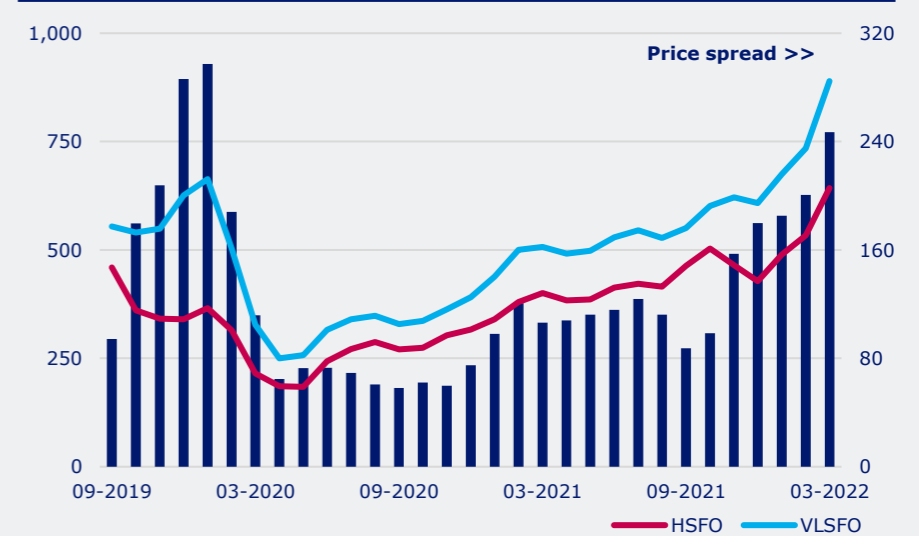
Increased "fuel optionality" is becoming popular when ordering new vessels. Almost 40% of the orderbook is for vessels capable of running on alternative fuels. LNG is currently the preferred choice, but LPG, methanol and "ammonia ready" have also gained traction.

Fuel optionality is clearly a long-term strategy aimed at hedging against alternative fuel outlooks. Increased optionality is certain to increase construction costs, while its payoff is less predictable. Some investments may prove valuable, others may only be temporary, and some may not create any value at all. Assets may not be stranded, but the cost of retrofitting vessels may turn out to be significantly higher than initially expected.

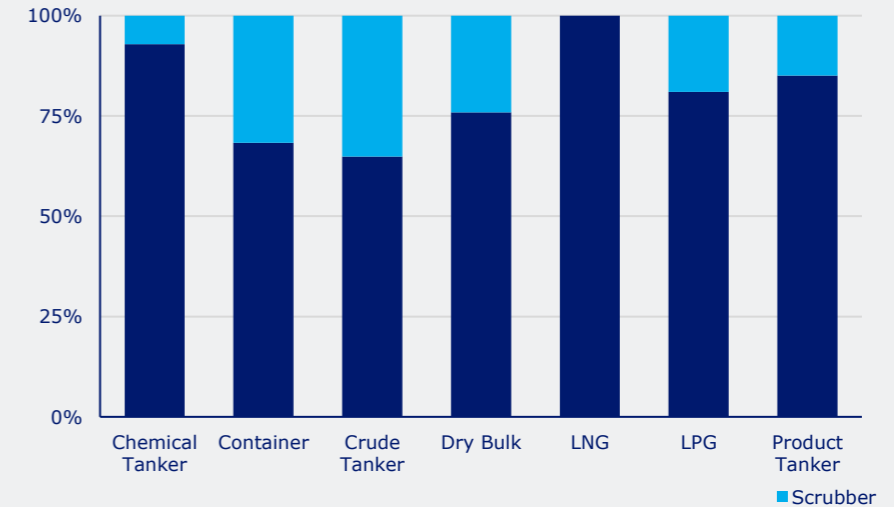
In today's market, with energy prices soaring, few seem to be taking advantage of their LNG dual-fuel option, since LNG fuel prices are currently more than double the price of VLSFO (on an energy equivalent basis).

We expect to see significant investments in new vessels with fuel optionality in the coming years. Some will be earmarked for green corridors, where employment profiles and fuel offtake agreements are matched to manage risk, while others will enter a market characterised by great uncertainty.

MONTHLY BUNKER PRICES (USD PER TONNE)



SHARE OF SCRUBBER FITTED VESSELS (DWT)



Source: Clarksons, Danish Ship Finance

SHIPBUILDING



SHIPBUILDING UPDATE

Strong market consolidation towards first-tier yards

The shipbuilding industry has benefited from strong contracting activity in 2021 and 2022. Container and Gas Carriers have filled orderbooks at top-tier yards in South Korea and China. Newbuilding prices are now at their highest level since 2009. A group of 71 first-tier yards, representing 56% of global yard capacity and 85% of the orderbook, are performing more strongly than the 212 second-tier yards. Yard capacity has kept fairly stable at 57 million cgt since 2019, but 115 second-tier yards (14% of yard capacity) are running out of orders in 2022, while an additional 69 yards (16% of yard capacity) are due to deliver their last orders in 2023. Contracting seems to be consolidating around the group of first-tier yards.

CONTRACTING AND NEWBUILDING PRICES

Strong contracting activity, rising component costs (including steel prices) and more advanced vessels have increased the average newbuilding price by 24% since January 2021. Still, newbuilding orders have been settled between 141 yards, although a group of only 64 first-tier yards have secured 89% of the ordered capacity. The remaining 78 second-tier yards only secured 11% of the ordered capacity during 2021.

Dry Bulk: Contracting levels in the Dry Bulk segment were high in 2021, with 4% of the fleet (508 vessels) contracted. The orderbook is scattered between 133 yards. First-tier yards are building 68% of the orders, corresponding to 11 million cgt.

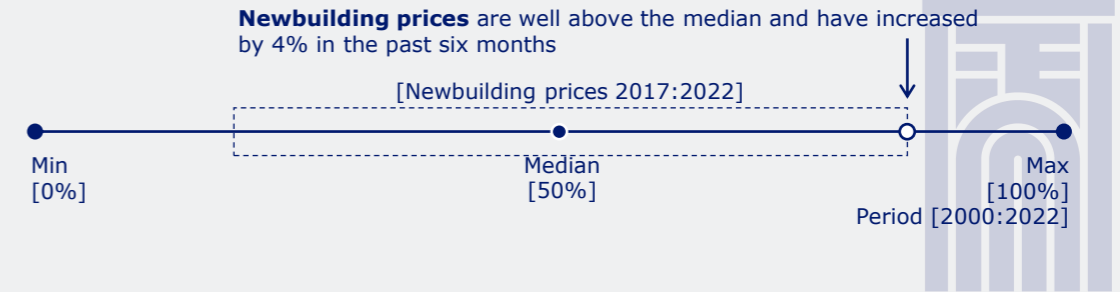
Container Carriers have seen a surge in orders, with around 10% of the fleet (580 vessels) contracted in 2021. Orders are concentrated at 58 yards, mainly in China and South Korea. First-tier yards account for around 88% of orders, corresponding to 26 million cgt.

Tankers: Contracting activity was low in 2021, with only 2% of the fleet (276 vessels) contracted. Vessels have primarily been ordered in China and South Korea, with first-tier yards accounting for 84% of all orders.

Gas Carriers saw higher contracting for both LNG and LPG Carriers in 2021 (191 vessels). Only 26 yards are building the orders, with first-tier yards accounting for 97%. Contracting of LNG Carriers has increased significantly in 2022, equivalent to 45% (cgt) of the 2021 level.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – May 2022



A group of 266 yards delivered 32 million cgt in 2021 (up 11% compared to 2020), while new orders corresponding to 47 million cgt were placed among 143 yards. A group of 58 first-tier yards delivered 22 million cgt (69% of 2021 deliveries) while 64 first-tier yards attracted 42 million cgt (89% of new orders) in 2021. The market currently seems to be consolidating towards the group of first-tier yards. A total of 208 second-tier yards delivered 10 million cgt in 2021 but 79 of them were only able to restock 5 million cgt.

Yard capacity has remained stable at approximately 57 million cgt since 2019, whereas the number of active yards has declined by 55 to 283 yards. 71 first-tier yards account for 32 million cgt (56%) of global capacity. This group has expanded by nine yards since 2019: six in China and three in South Korea. The number of second-tier yards has declined by 64 yards, representing a combined capacity of 3.5 million cgt, since 2019.

Yard utilisation: Average yard utilisation in 2021 was 51%, with

first-tier yards maintaining utilisation of 70%. Chinese and South Korean first-tier yards performed the best. Second-tier yards struggled to utilise capacity, managing only 28% during 2021.

Contracting: First-tier yards managed to restock 131% of their annual capacity during 2021 and the first quarter of 2022, while second-tier yards only restocked 22%. Orderbooks are now considered full at most first-tier yards until 2025 before any capacity expansion.

CONTAINER



CONTAINER

The strong market is starting to wane and the long-term risk is rising

The Container market is still very strong, but cracks are beginning to emerge. Low fleet growth, port congestion and restocking of retail inventories have taken freight rates and secondhand prices to new heights. However, it seems that the top has been reached. Demand volumes are growing modestly and port congestion has stabilised. As a result, box rates came down in the spring. This trend could continue throughout 2022 as the fleet expands and macroeconomic drivers put a lid on consumption of containerised goods. In 2023 and 2024, the risk of surplus capacity has risen markedly. The fleet is set to expand massively, driven by an inflow of 12,000+ teu vessels, while we expect demand growth to level off. If the current high contracting activity continues, we fear that oversupply will impact the Container market for a long time.

FREIGHT RATES AND SECONDHAND PRICES

Since our last report in November, both box rates and timecharter rates have continued to grow, although some weaknesses are starting to show. The high employment of Container vessels has been supported by a rebuilding of inventories, manageable fleet growth and a decrease in available capacity due to severe port congestion. Growth in secondhand prices has calmed and prices have only increased by 4% in 2022.

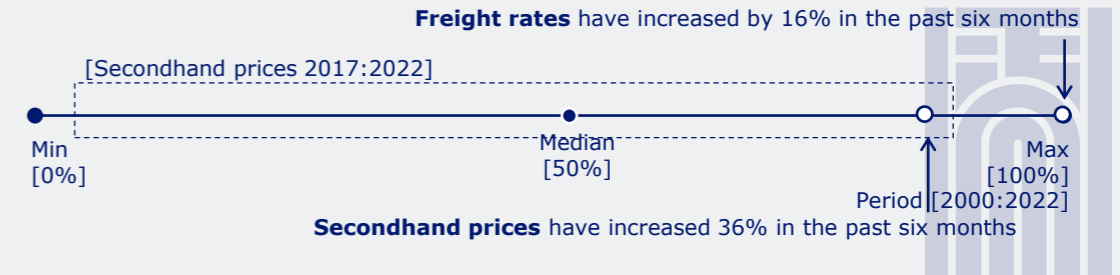
8,000+ teu vessels: In 2022, lower demand growth has caused the sky-rocketing box rate curve to bend. Thus, the box rate only increased by 2% in the first four months of the year. The three-year timecharter rate has followed the same trajectory and increased by 8%, reaching USD 96,000 per day for a 9,000 teu vessel in April. The average timecharter length is now two to three years. The five-year-old secondhand price for a 11,000 teu vessel rose 12% in the first quarter of 2022, from USD 160 million to USD 180 million.

3-7,999 teu vessels: Regional trade continues to benefit from the redirection of trade caused by supply chain disruptions. As of April, the three-year timecharter rate stood at USD 79,400 per day, while the five-year-old secondhand price for a 6,800 teu vessel reached USD 163 million.

Feeder vessels: In April 2022, the three-year timecharter rate was USD 46,000 per day, while the five-year-old secondhand price for a 2,150 teu vessel stood at USD 48 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – May 2022



Strong US retail consumption at the expense of leisure spending was the main driver of a 5.6% increase in global Container volumes in 2021 compared to 2020. Travel distances were relatively stable. In the same period, fleet utilisation strengthened, as the Container fleet expansion was limited to 3%, while available capacity was further reduced by port congestion caused by landside bottlenecks and supply chain disruptions. In 2022, growth in demand volumes seems to be levelling off, while the degree of port congestion appears stable.

Deliveries have increased, with 1.1 million teu added to the fleet (4.4% of the fleet) in 2021 compared to 0.9 million teu in 2020 (3.5%).

Scrapping is close to non-existent. Only 12,000 teu (all Feeders) were scrapped (16 vessels) in 2021 compared to 190,000 teu in 2020 (79 vessels). So far in 2022, no vessels have been scrapped.

Contracting activity has sky-rocketed, with 4 million teu (16% of the fleet) contracted in 2021 compared to 1 million teu (4%) in

2020. The high contracting level seems to be continuing, as 1 million teu (4%) was contracted in the first quarter of 2022.

Orderbook: The orderbook doubled in 2021 compared to 2020. The orderbook is currently 6.6 million teu and represents 26.4% of the current fleet.

Demand: Seaborne Container volumes increased by 5.6% in 2021 compared to 2020, driven by strong US retail consumption. Volume growth has been more subdued in 2022.

MARKET DYNAMICS IN THE LAST SIX MONTHS

The beginning of the end of the ever-increasing box rate?

Growing demand for containerised goods and port congestion have caused a prolonged surge in Container earnings. Now, underlying drivers are stabilising, and this is visible in the box rate.

RESTOCKING OF RETAIL GOODS IS DRIVING DEMAND

The last 18 months of excessive growth in Container freight rates have largely been powered by high consumption of containerised goods in the US. However, the lifting of Covid-19 restrictions in the US has shifted spending back towards services (instead of goods). In the first quarter of 2022, US goods spending was up by only 1% compared to the fourth quarter of last year. Meanwhile, the rapid growth in US retail inventories indicates that the current US Container demand push is

mainly being driven by rebuilding of stocks. Global Container throughput declined by around 1% in the first quarter of 2022.

A STEADY NUMBER OF VESSELS IN PORT CONGESTION

A persistent increase in port congestion is another cause of the extremely firm Container market, but this seems to be changing, with vessels at port having stabilised at around 35% of the fleet over the last six months. In addition, the average fleet speed has been fairly steady. The inflow of new vessels has increased Container capacity by around 1% during 2022.

STAGNATION IN BOX RATES

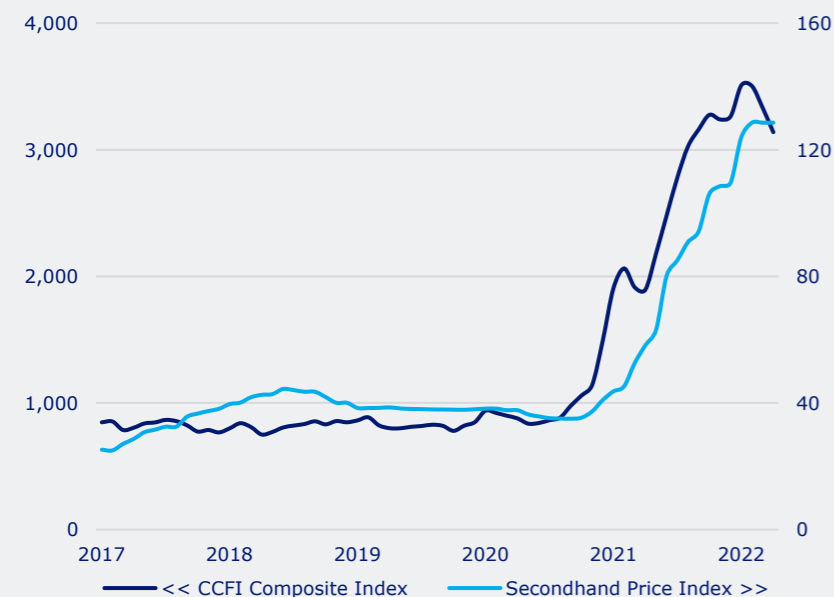
The stagnation in the underlying drivers has led to a

flattening of the box rate curve – although both drivers and rates remain at record-high levels. Since our last report, the CCFI has stayed between index 3,200 and 3,500. While the effect is not yet visible in timecharter rates, secondhand prices are showing the same trend.

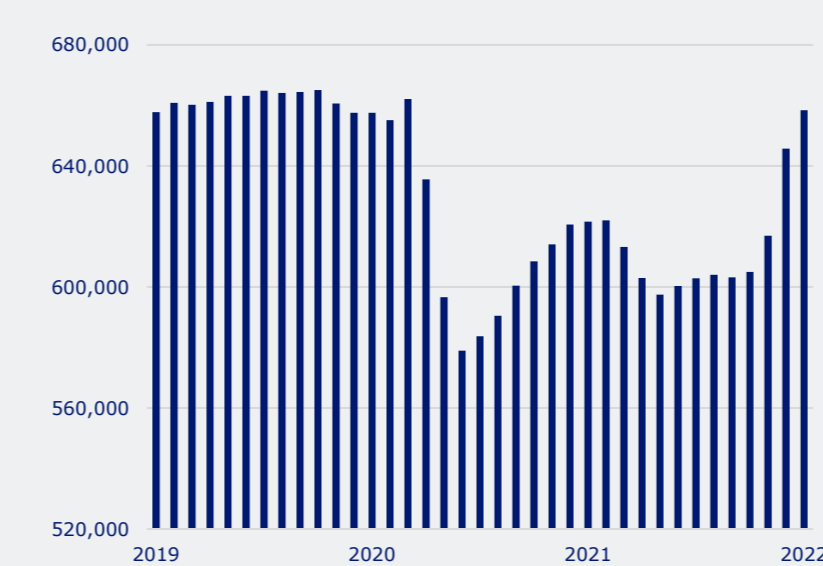
CONTRACTING CONTINUES RELENTLESSLY

Although the excessive surge in box rates has come to a halt, market optimism appears undimmed. Contracting activity was up 256% in the first quarter of 2022 compared to the previous three months. Vessels of all sizes have been ordered, but new contracts for 12-16,999 teu vessels have been the main driver of the surge – adding to the marked capacity expansion expected on the transpacific and China-Europe trades in the mid-2020s.

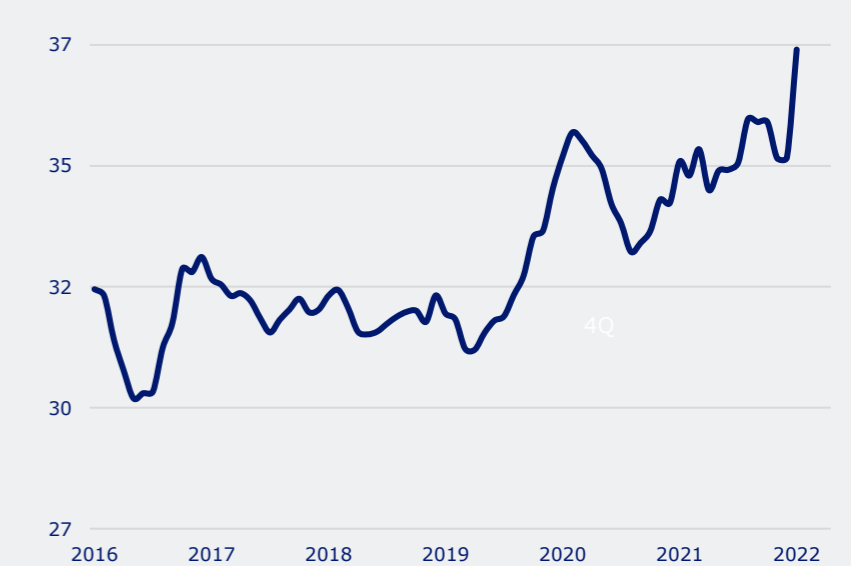
BOX RATES AND SECONDHAND PRICES (INDEX)



US RETAIL INVENTORIES (USD MILLION)



CONTAINERSHIPS IN PORT, 3M AVERAGE (% OF FLEET)



Source: AXS Marine, Bureau of Economic Analysis, Clarksons, Danish Ship Finance

SUMMARY: CONTAINER MARKET OUTLOOK

The strong market is set to come to an end, as the demand picture is deteriorating. A large inflow of new vessels is set to enter the fleet

From a short-term perspective, a blurred demand picture and growth in available capacity are likely to put pressure on freight rates and secondhand prices. The market deterioration is set to accelerate in the long term with a massive inflow of 12,000+ teu vessels and a weak demand outlook. This is likely to put significant pressure on most of the Container market, in particular raising the re-employment risk for tonnage providers.

Market fundamentals indicate that earnings and secondhand prices will decrease during the rest of 2022. We expect the underlying drivers to deteriorate gradually over the coming 18 months before embarking on a possibly severe downturn in 2024.

MAJOR EXPANSION OF THE 12,000 TEU FLEET WITHOUT ANY DEMAND GROWTH DRIVERS

In the coming 12 months, we expect the capacity expansion on the trades from China to North America and Europe to run slightly ahead of demand. The inflow of 12,000 teu+ vessels is large, but liner operators can mitigate the capacity expansion by manoeuvring capacity onto smaller trades. However, an easing of port congestion will increase the number of available vessels and macroeconomic pressure is likely to result in lower growth in consumption of containerised goods. Consequently, box rates are expected to continue their downward trend for the rest of the year, with timecharter rates and secondhand prices following suit. We believe the decline will accelerate in 2023 with the influx of especially 15,000 teu+ vessels, while we see no indications of the demand picture changing radically. With no demolition potential, owners of 12,000 teu+ vessels are likely to accept a marked reduction in asset prices going into 2024.

THE FLEET OF 6-11,999 TEU VESSELS CAN BE SQUEEZED

The 6-11,999 teu fleet is set to expand after a few quiet years. As the fleet mainly operates on transpacific routes, many vessels will face fierce competition from the fast-growing fleet of 12-14,999 teu vessels. Smaller and older vessels will have to seek employment on minor trades, but a sluggish demand outlook limits their growth prospects. We expect demolition activity for vessels older than 20 years to take off.

THE SMALLEST VESSELS ARE BEST POSITIONED

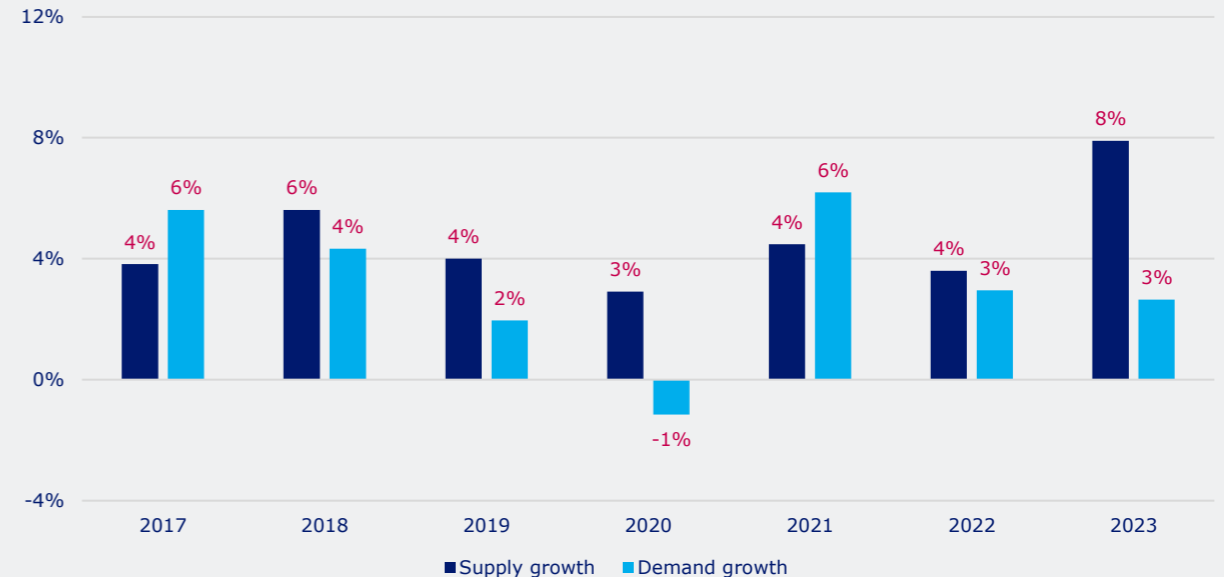
In the Feeder and 3-5,999 teu segments, the inflow of new vessels seems manageable, while the outlook for intra-regional trade provides some tailwind. We expect earnings and

vessel prices to normalise as the scale of logistical disruptions and port congestion decreases. In our view, these fleets seem to be best positioned to handle the impending shift in market dynamics that will soon hit the Container market.

CHANGING SUPPLY CHAINS COULD CHANGE THE SERVICES DEMANDED FROM LINER OPERATORS

In a long-term perspective, Container vessels are likely to serve a much more digitalised and automated supply chain than today. Liner operators could capitalise on the demand for a more intelligent supply chain if they manage to engage in long-term partnerships with importers and embrace the growing call for digital data.

SUPPLY AND DEMAND BALANCE (TEU)



Source: Clarksons, Danish Ship Finance

CONTAINER FLEET OUTLOOK

Huge capacity expansion lies ahead

Fleet growth will continue to be moderate in 2022, but an enormous inflow of very large Container vessels changes the picture for next year.

INFLOW OF NEW VESSELS

During the rest of 2022, a moderate 174 new vessels will join the fleet, which corresponds to gross fleet growth of 4%. In 2023 and 2024, a massive 319 and 263 new vessels will be delivered, propelling fleet growth before scrapping to 8% and 6% measured in teu, respectively.

ULTRA LARGE VESSELS CONTINUE TO DRIVE GROWTH...

The fleet of vessels larger than 12,000 teu continues to drive the capacity expansion. More than 70% of the orderbook consists of these vessels. This will lead to the

12,000 teu+ fleet expanding by an astonishing 56% by the end of 2024. This will put tremendous pressure on the trades from China to Europe and North America. With no obvious scrapping potential to recalibrate the fleet such that capacity is back in sync with demand growth, the only option for operators is to cascade capacity onto smaller vessels' routes or scrap prematurely.

...BUT SMALL VESSELS IN THE FLEET ARE CONTRIBUTING TOO

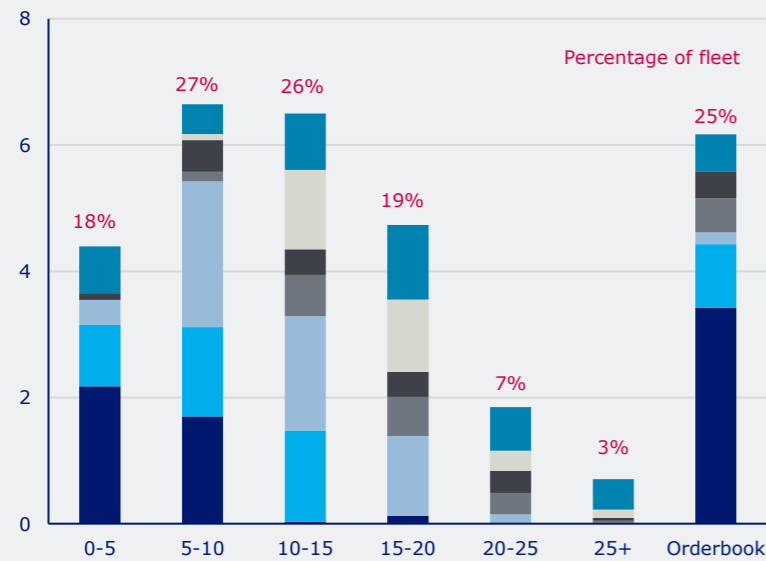
Unlike the last decade, the 3-7,999 teu fleet is set to grow markedly in the coming years. Some 960,000 teu is expected to be delivered in 2023 and 2024. Furthermore, in the Feeder segment the orderbook represents 13% of the fleet. For both fleets, scrapping of older vessels could limit the net growth in capacity, but we also anticipate

significant growth in the small and mid-sized vessel fleets. This complicates operators' move to cascade capacity, which increases the likelihood of capacity accumulating on most lanes and inevitably raises the re-employment risk for tonnage providers.

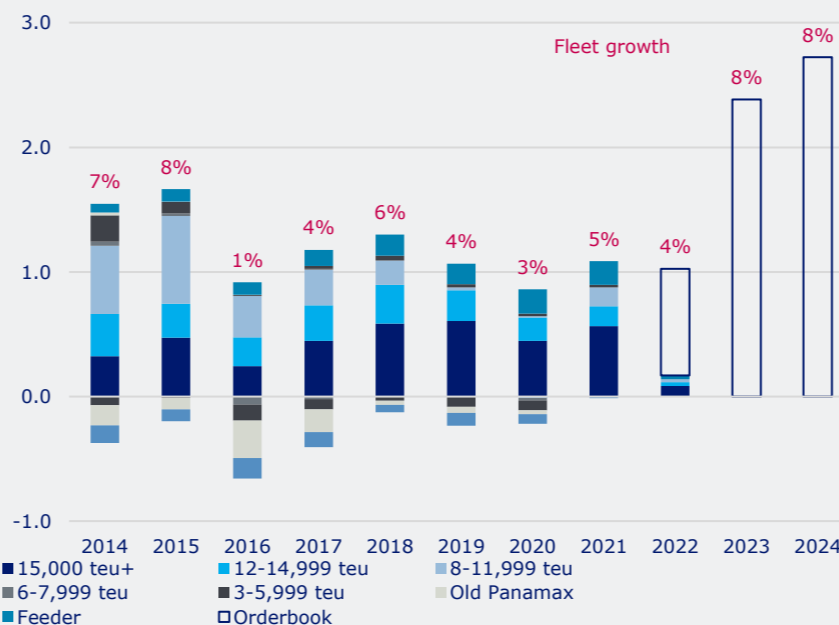
LESS PORT CONGESTION OFFSETS SLOWER SPEEDS

Some of the massive fleet growth in 2023 and 2024 may be counterbalanced by slower average speeds, as the EEXI and CII rules come into force in the same period. However, port congestion is expected to ease markedly over the coming year, releasing around 3-4% of the fleet corresponding to almost all new deliveries in 2022. We do not expect much help from external factors to reduce the effect of the huge capacity expansion in 2023 and 2024.

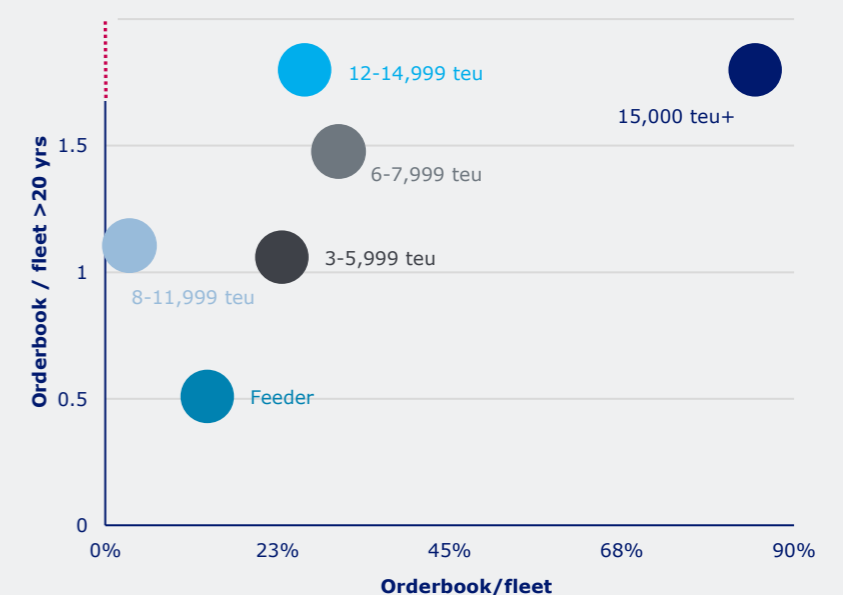
AGE DISTRIBUTION (MILLION TEU)



FLEET DEVELOPMENT (MILLION TEU)



FLEET RENEWAL POTENTIAL (TEU)



Source: AXS Marine, Clarksons, Danish Ship Finance

CONTAINER DEMAND OUTLOOK

Macroeconomic drivers are challenging the Container market

The large Container vessels face a challenging demand picture due to negative outlooks for several macro drivers. Smaller vessels face less headwind.

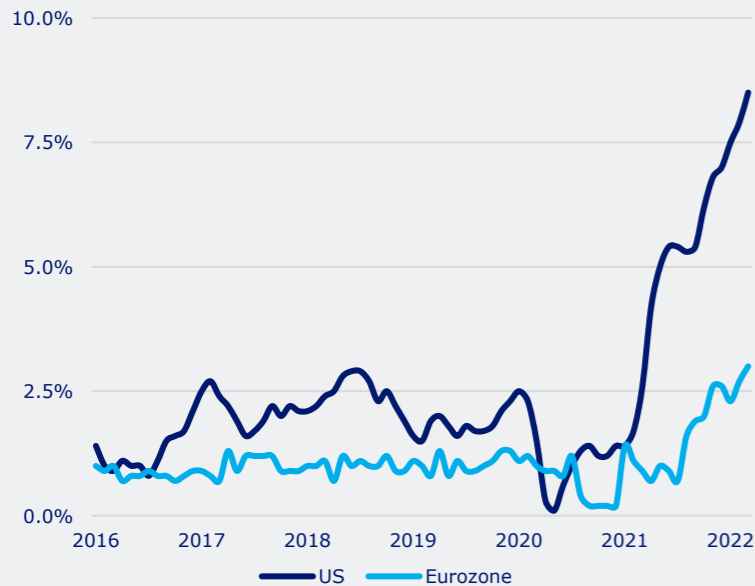
A CHALLENGING DEMAND OUTLOOK

The demand outlook for 2022 and 2023 is subject to significant risk, as inflation rates are surging, and energy shortages and Covid-19 outbreaks are closing Chinese ports and factories. We expect demand volumes to grow by around 1-2% annually in 2022 and 2023 – well below the 2021 level.

EROSION OF PURCHASING POWER IN THE US AND EUROPE

Around 90-95% of vessels larger than 7,999 teu are directly dependent on consumption of containerised goods in North America and Europe. In these regions, growth in

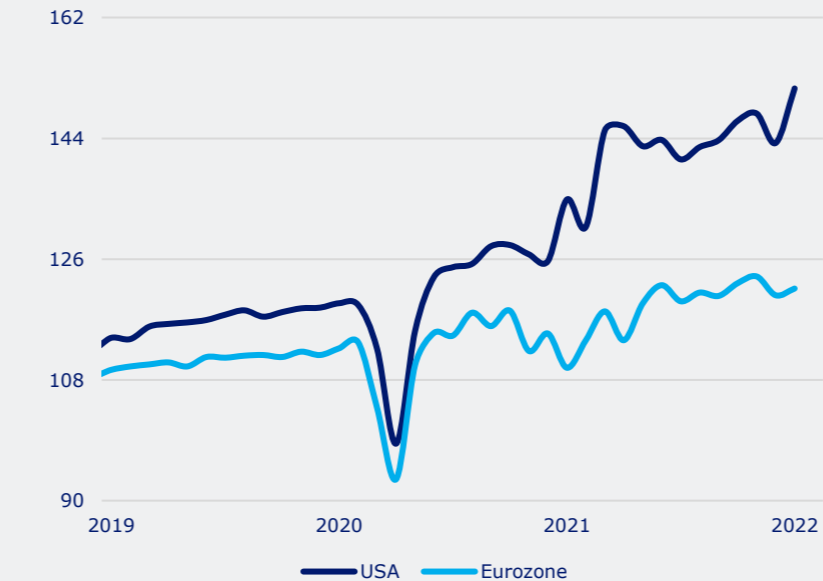
CONSUMER PRICE INDEX (ANNUALLY CHANGE)



consumption of containerised goods is set to slow markedly in 2022. We expect purchasing power to be hampered by the rapid increase in energy and food prices. In order to cope with the high inflation level, central banks are likely to raise interest rates further, which could dampen economic growth and limit the US and Europe's thirst for containerised goods further. Demand for medium and large Container vessels is only expected to grow by around 1% in 2022 and 2023.

EUROPEAN OUTLOOK HIGHLY UNCERTAIN

Europe sources a large share of its energy from Russia and thus long-term sanctions on imports of Russian energy commodities could inflict great damage on many European industries, which is likely to lead to higher unemployment rates and put additional pressure on consumer purchasing

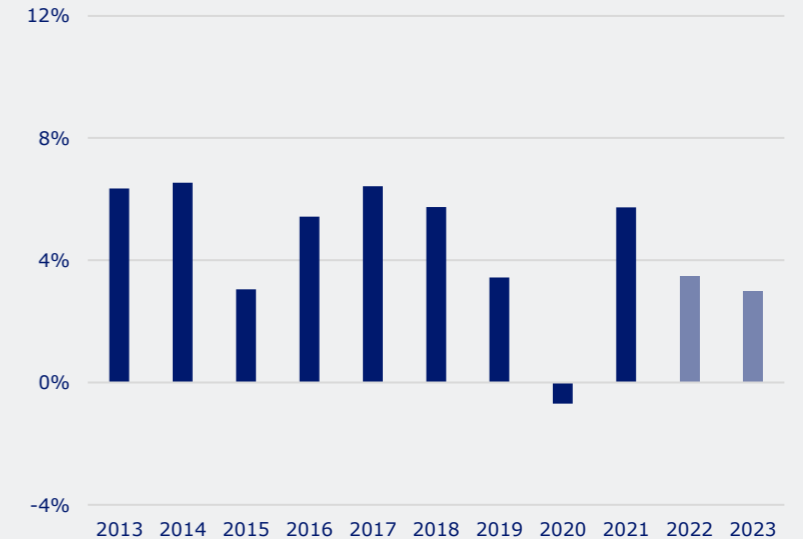


power. This adds to the risk for the European outlook and could even cause a stagnation in imports of containerised goods in the coming years if the war in Ukraine is prolonged and until alternative energy sources are found.

SEVERAL POSITIVE DRIVERS FOR INTRA-REGIONAL TRADE

In the coming years, we expect intra-regional trade to grow to the tune of 3-4% annually. The Chinese zero-tolerance policy on Covid-19 is likely to continue to result in lockdowns and cause Container trade to be diverted, boosting regional trade in Asia. In the long term, several new policies in the US and the EU aim to strengthen regional autonomy within strategic industries, which paves the way for solid growth in intra-regional Container trade. Besides the Feeder vessels, 85-90% of the 3-7,999 teu fleet operates on intra-regional trades.

INTRA-REGIONAL CONTAINER TRADE (TEU)



Source: AXS Marine, Bureau of Economic Analysis, Clarksons, Eurostat, IMF, Danish Ship Finance

DEMAND DEEP DIVE: THE FUTURE OF SUPPLY CHAINS

Short- and long-term changes in supply chains will determine demand for Container vessels

Supply chain disruptions have been the main reason for the explosion in box rates in the Container market over the last couple of years. Supply chains are now starting to be restored. What comes next could reshape the liner industry.

HIGH FREIGHT RATES DRIVEN BY SUPPLY CHAIN DISRUPTIONS

Modern supply chains are a large driver for Container demand, as intermediate goods are often moved multiple times in intra-industry trade before being made into final consumer goods. This adds to the complexity of global Container trade and increases the segment's exposure to external shocks such as a pandemic. Thus, trade of intermediate goods plummeted as Covid-19 spread across the world. Now, global intra-industry volumes have hit index 110 compared to the pre-Covid level, indicating that supply chains have recovered from the initial shock caused by the pandemic.

INTRA-INDUSTRY FLOWS ARE BEING RESTORED

There are multiple drivers behind the recovery of supply chains. Globally, new cases of Covid-19 are decreasing, and the virus has turned into the milder Omicron variant. As a result, most restrictions on physical movement have been lifted, leading to a more stable workforce, in turn supporting production and movement of goods. Another reason the pressure on supply chains has eased is that the improved public health situation has shifted some consumption from containerised goods back to services, while the high inflation rates in the US and Europe are cutting into real wages and constraining consumer spending offsetting closed Chinese ports. We expect this to lead to higher scheduled reliability and lower box rates in the Container market during 2022.

CHANGING SUPPLY CHAINS...

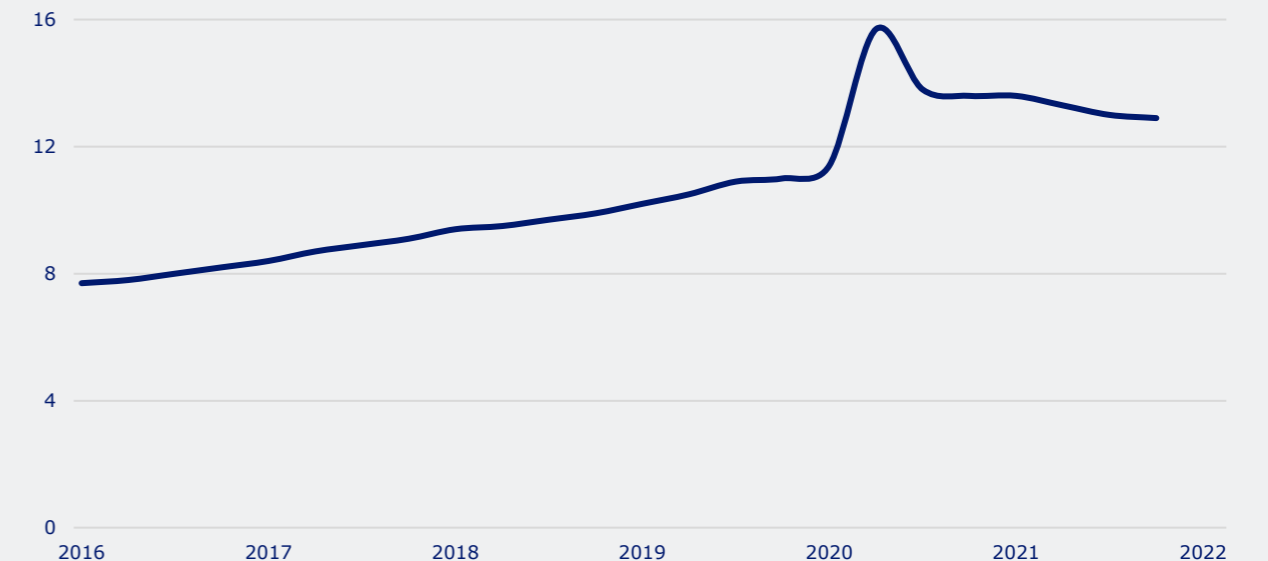
Even though intra-industry trade seems to have been largely re-established, the logistics of containerised goods still face structural challenges. A lack of truck drivers, storage workers and warehouse facilities in the US and Europe continues to cause build-ups of containers in ports, increasing port congestion and preventing a smooth and efficient flow of goods. We believe this will force retail companies to review their logistics and adjust their operations in order to cope with these long-term strategic challenges. During the pandemic, e-commerce retail sales as a percentage of total retail sales in the US grew from 11% to 16% and several drivers indicate that this trend could continue. The fast-

growing e-commerce trade provides opportunities to deal with the structural challenges. As e-commerce grows, we expect retailers to step up investments in automatisation and digitisation, in order to harvest the benefits fully. An increasing degree of autonomy could address the workforce supply/demand gap, while intelligent digital forecasts will improve supply chain visibility and efficiency, leading to higher warehouse utilisation.

...MEAN THAT DIFFERENT SERVICES WILL BE REQUIRED FROM LINER OPERATORS

From a long-term perspective, liner operators will have to adapt to the new requirements of intra-industry trade. For retail companies to increase the amount of digital data they can access, long-term partnerships with liner operators seem necessary. Liner operators that manage to engage actively in the transformation of supply chains will be able to capitalise on this and increase the value proposition for their customers. Those who fail to do so are likely to become less significant in the eyes of customers and could experience pressure on earnings. The growing visibility of liner operations is likely to curtail the immediate demand for vessels. If this materialises, it could become a long-term structural challenge for tonnage providers.

US E-COMMERCE AS A PERCENTAGE OF TOTAL RETAIL SALES (USD)



Source: AXS Marine, Bureau of Economic Analysis, U.S. Census Bureau, Citi GPS, IMF, WTO and Danish Ship Finance

DRY BULK



DRY BULK

The market fundamentals continue to strengthen

The Dry Bulk market continues to follow a positive trajectory on both the demand and supply side. A low inflow of new vessels and strong demand for most Dry Bulk commodities are keeping freight rates high across segments. The secondhand market continues to fly high, highlighting the market optimism. While the optimism is widespread, there is cause for concern in the Capesize segment. Underlying demand drivers are weakening, while the fleet's ability to rebalance seems minimal. On the other hand, for the small and mid-sized vessels future fleet growth seems manageable, while changing trade patterns and investments in renewable technologies represent demand growth potential. An acceleration of the expected decline in coal volumes could cause trouble for the mid-sized vessels from a long-term perspective.

FREIGHT RATES AND SECONDHAND PRICES

Since our last report in November 2021, seasonal factors have driven spot rates down, while timecharter rates have stayed fairly level. The market seems firm across segments, where the mid-sized and small vessels have performed the best. Low fleet growth and reasonable underlying demand drivers are keeping employment high. Secondhand prices have followed suit and have increased by 43% in 12 months.

Capesize: Relatively mild weather in Brazil and Australia has prevented the usual seasonal dive and kept the one-year timecharter rate steady at around USD 26,000 per day in 2022. The five-year-old secondhand price has also remained unchanged in 2022 at USD 47 million.

Panamax: Strong fundamentals have increased freight rates by 7%, while secondhand prices have risen by 8%. In April 2022, the one-year timecharter rate and the five-year-old secondhand price stood at USD 28,000 per day and USD 36

million, respectively.

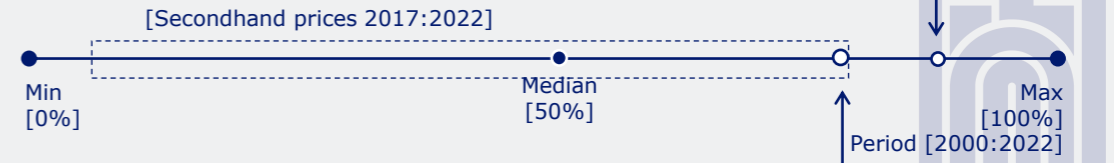
Handymax: Strong demand for minor bulk commodities is supporting high prices and freight rates in the segment. As of April 2022, the one-year timecharter rate stood at USD 25,000 per day, while the five-year-old secondhand price reached USD 34 million.

Handysize: In April 2022, the one-year timecharter rate was USD 26,000 per day, while the five-year-old secondhand price stood at USD 28 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – May 2022

Freight rates are well above the median and have increased by 15% in the past six months



Secondhand prices are well above the median and have increased 7% in the past six months

Growing coal demand, strong grain trade and financial stimulus packages caused global seaborne demand for Dry Bulk commodities to increase by 4% in 2021, while travel distances added 1.5% to demand growth. The Dry Bulk fleet expansion was limited to 4% in 2021, while increased port congestion and vessel speeds decreased the active fleet by 3%. In 2022, the strong fundamentals have kept the market firm throughout the weak season.

Deliveries have slowed, with 5.8 million dwt added to the fleet (0.6% of the fleet) in the first quarter of 2022 compared to 10 million dwt in the first quarter of 2021.

Scrapping declined from 16 million dwt in 2020 to 5 million dwt in 2021. The low scrapping level seems to be continuing, as 1 million dwt was scrapped in the first quarter of 2022.

Contracting increased by 78% from 23 million dwt in 2020 to 41 million dwt in 2021. So far in 2022, 2 million dwt has been contracted.

Orderbook: The drop in the orderbook in 2021 has softened due to the rise in contracting. The orderbook is currently 64 million dwt (7% of the fleet).

Demand: Seaborne trade volumes increased by 4% in 2021, driven by a rebound in coal and minor bulk commodities. In the first three months of 2022, volumes were up by 1% compared to the same period in 2021.

Travel distances increased by 1.5% in 2021. Distances seem to be increasing in 2022, owing to changing trade flows.

MARKET DYNAMICS IN THE LAST SIX MONTHS

Forces of nature create Dry Bulk seasonality

The first and last few months of the year usually cause trouble for the Dry Bulk market. This time, conditions have been quite favourable in a seasonal perspective.

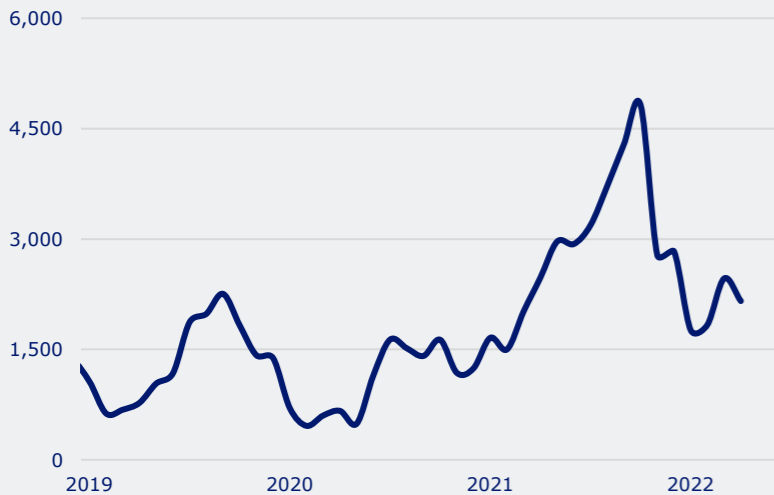
SPOT RATES DECLINED MARKEDLY DURING THE WINTER

From the end of October 2021 to the end of April 2022, spot rates declined by approximately 50%. In particular, Capesize vessels faced employment challenges. The drastic change in income could indicate a deterioration in fundamentals but this is far from the truth.

MULTIPLE NATURAL CHALLENGES

Despite the large drop in spot rates, the market has followed the typical seasonal path. Historically, in the first and last few months of the year, cold weather in the northern hemisphere hampers grain production accounting

BALTIC EXCHANGE DRY INDEX (INDEX)



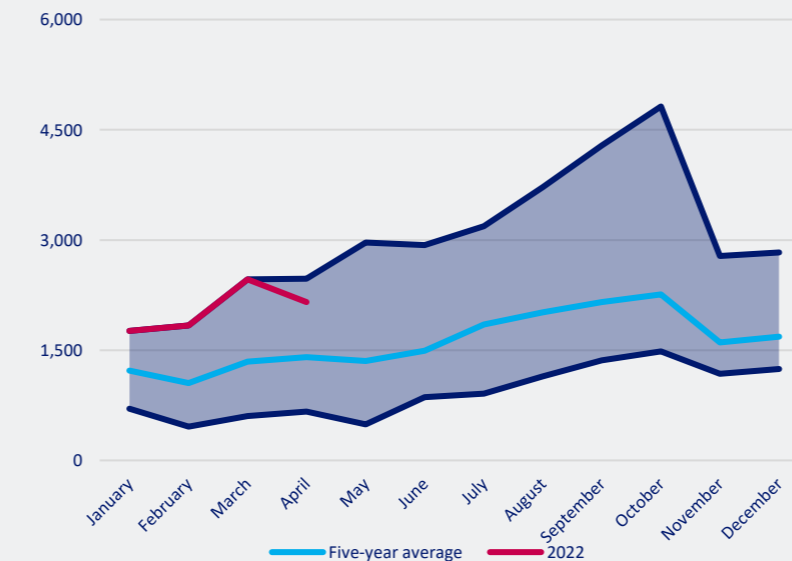
for about 7% of Dry Bulk trade. In the southern hemisphere, heavy rain in Brazil and the cyclone season in Australia usually challenge commodity exports corresponding to around 40% of Dry Bulk trade.

THE SOUTHERN HEMISPHERE WEATHER CREATES SEASONALITY

While temperatures never reach levels conducive to grain growth in the winter months in the northern hemisphere, precipitation and the number of cyclones vary considerably and affect Dry Bulk volumes markedly. In the last five years, when precipitation and the number of cyclones have been above the seasonal average, the spot rate has dropped to levels below the historical seasonal mean.

BETTER WEATHER...

Precipitation and cyclones have brought only few

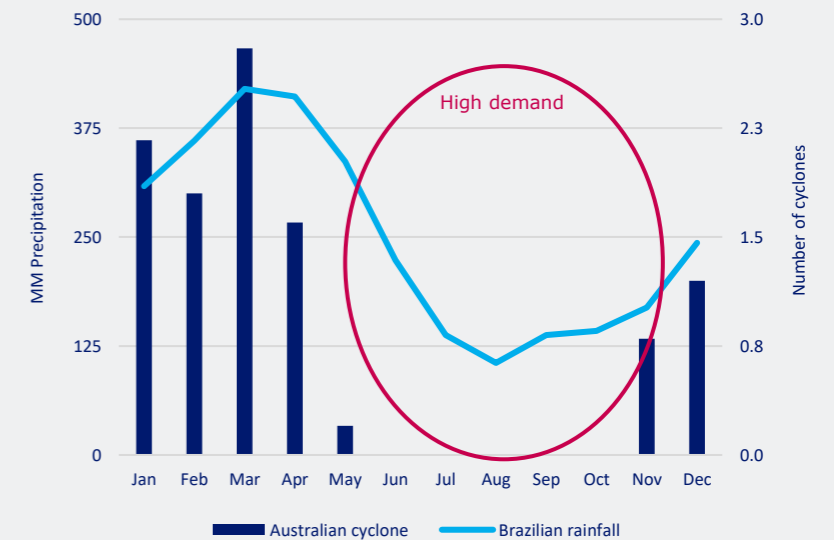


challenges this year. In the first quarter of the year, Dry Bulk volumes were up 1% compared to the first quarter of last year and up 4% compared to the first quarter of 2020. The high volumes kept the spot market high for the season. Thus, the Baltic Dry Index dropped only to around index 1,800 – the highest seasonal level in 11 years.

...HAS SUPPORTED SEASONALLY HIGH SPOT RATES

The strong spot performance has mainly been driven by the Handymax, Handysize and Panamax segments. Besides the favourable nature conditions, these segments are enjoying a growing market recovery. In contrast, the Capesize segment is still suffering from oversupply. Thus, despite the tailwind from natural forces, easing of port congestion has increased the active supply and kept spot rates below the seasonal average.

UNDERLYING DEMAND DRIVERS (2017-2022)



Source: Australian Bureau of Meteorology, Bloomberg, Clarksons, Danish Ship Finance

SUMMARY: DRY BULK MARKET OUTLOOK

Trade flow disruptions create growth possibilities for small and mid-sized vessels

For the majority of Dry Bulk vessels, the demand picture looks promising, while fleet growth seems manageable in the coming years. Yet, the Capesize segment are likely be challenged by very low growth in volumes. In a flat market, we are seeing Capesize owners are increasing investments in LNG-fuelled vessels, but this path will not necessarily improve the underlying dynamics in the long term.

In the immediate future, the war in Ukraine is likely to increase demand volumes for some vessels, while lengthening voyage distances for others. The low fleet growth means the segment is well placed to benefit from this.

REDIRECTING OF HANDYSIZE VESSELS IS RESULTING IN LONGER DISTANCES

The Baltic coal and fertiliser trade is a main source of employment for Handysize vessels. Now, though, the Russian invasion of Ukraine is directly affecting these trade flows due to imports of Russian commodities coming to a widespread halt. From a short-term perspective, volumes are expected to remain stable but to be sourced from elsewhere, which will benefit the segment. Longer term, the Handysize segment could experience increased competition from larger vessels if volumes fail to grow and voyage distances continue to be longer. Yet, the fleet is well positioned to recalibrate capacity in order to meet demand, as scrapping mature vessels will outnumber deliveries of new vessels.

PROMISING OUTLOOK FOR MID-SIZED VESSELS

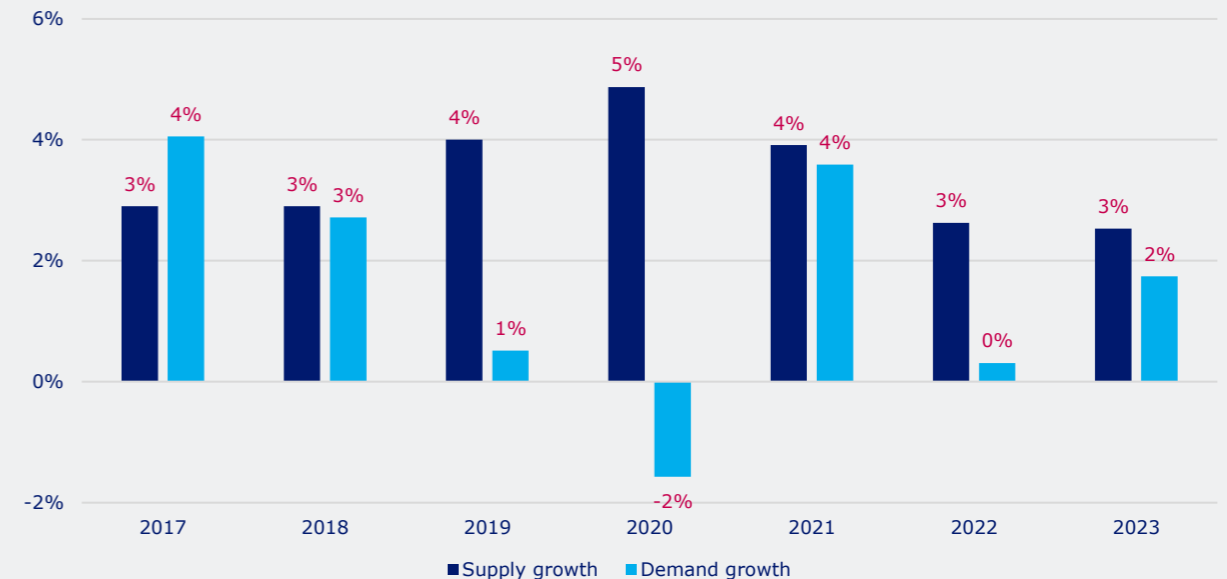
For the Handymax and Panamax segments, the war in Ukraine is likely to result in higher demand as well. Coal volumes could rise due to European energy shortages, while North African and Middle East grain sourcing is likely to shift from the Black Sea to South America, which would increase voyage distances. In the long term, the Russian invasion could have a negative impact on demand, as the decrease in coal volumes is likely to accelerate. In addition, a growing orderbook could cause trouble, if contracting activity keeps accelerating. Nevertheless, we believe both risks are counterbalanced by large demolition potential and a promising demand picture for minor bulk commodities.

CAPE-SIZE VESSELS CONTINUE TO FACE CHALLENGES

A fragile Chinese real estate sector is keeping a lid on the steel-making industry's thirst for iron ore and thereby hampering demand growth for Capesize vessels. Thus, we expect

very little growth in demand for Capesize vessels in the coming years. In contrast, the Capesize fleet is expected to expand in this period, which will cause the demand and supply balance to deteriorate further and potentially put pressure on earnings. Some Capesize owners are tackling this situation by investing in LNG-fuelled vessels and engaging in long-term contracts with cargo owners and fuel suppliers for fixed cargo and fuel amounts. In an ESG perspective, this adds value for cargo owners in a world where the majority of vessels are fuelled by conventional fuel oil. However, at some point in time, when a large share of the fleet is propelled by LNG or other alternative fuels, the strategy will no longer create value for shipowners.

SUPPLY AND DEMAND BALANCE (DWT AND TONNES)



Source: Clarksons, Danish Ship Finance

DRY BULK FLEET OUTLOOK

A small orderbook dominated by popular ship designs

The Dry Bulk fleet is set to grow at a low rate in the coming years, but some vessel types are being favoured for either their versatility or their lower carbon footprint.

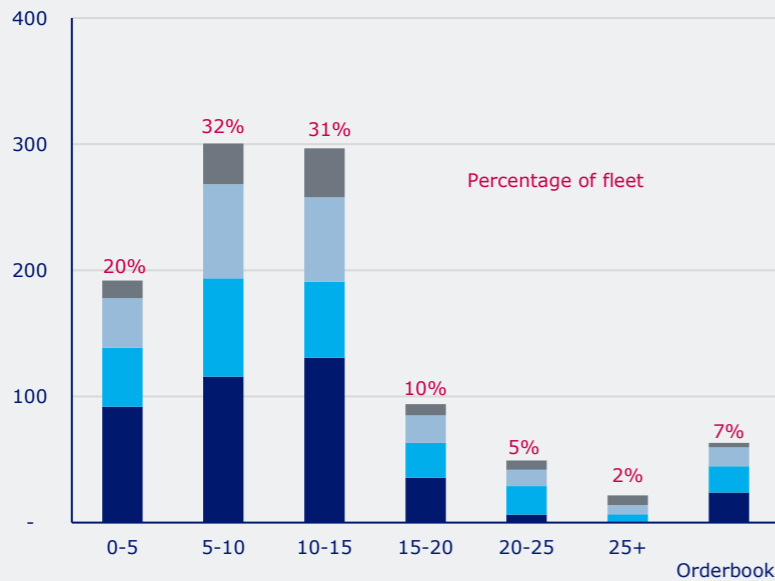
THE LOW FLEET GROWTH CONTINUES

The orderbook remains low, which will keep fleet growth at manageable levels in the coming years. Thus, we expect the Dry Bulk fleet to expand to the tune of 3% annually in 2022 and 2023 before scrapping.

A MARKED UPTICK IN UPPER MID-SIZED CAPACITY

In the coming years, fleet expansion will be driven by the Ultramax and Panamax segments (60-100,000 dwt). Around half of the orderbook consists of vessels in these segments in terms of capacity. These vessels are versatile, with the ability to carry a wide range of commodities and

AGE DISTRIBUTION OF FLEET (MILLION DWT)

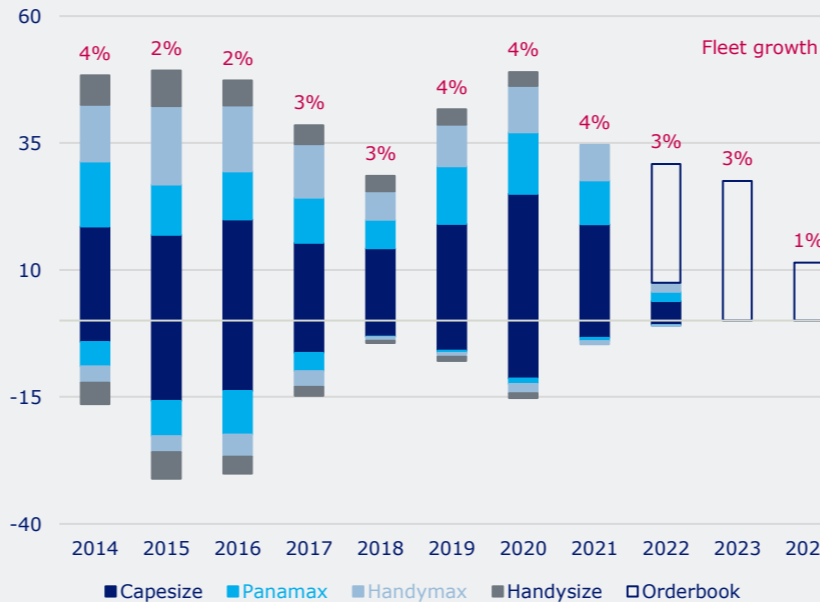


enter most ports, which partly explains their popularity. By the end of 2023, this fleet of upper mid-sized vessels will have experienced gross fleet growth of around 8%, accounting for 85% of vessel orders. Importantly, if demand fails to follow suit, realisation of the scrapping potential could keep net fleet growth to a minimum.

LARGE GROWTH IN LNG-FUELLED NEWCASTLEMAX VESSELS...

Capesize vessels account for almost the whole of the rest of the orderbook. Around 10 million dwt in new Capesize capacity will hit the water annually in 2022 and 2023, corresponding to gross fleet growth of 3% each year. The Newcastlemax design dominates the Capesize orderbook, with 116 out of 129 vessels, which corresponds to 6% of the current Newcastlemax fleet. Many of these vessels

FLEET DEVELOPMENT (MILLION DWT)

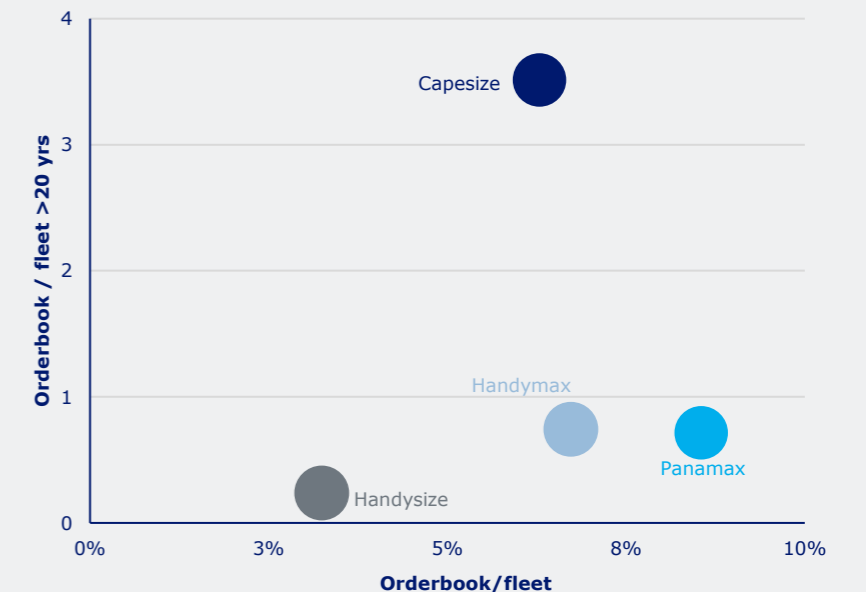


(around 35%) are fitted with LNG-compliant engines built in response to mining companies' calls for lower-emission transport.

...WILL CHALLENGE OLDER CAPE-SIZE VESSELS

Despite the lowest ever orderbook-to-fleet ratio for the Capesize fleet, we still expect notable net fleet growth due to extremely low scrapping potential. Only 53 vessels are older than 19 years, corresponding to 37% of the orderbook. The lack of older vessels has pushed the average scrapping age of Capesize vessels below 25 years. With tough competition from an upcoming series of LNG-fuelled vessel, we see an increased risk of a further reduction in the economic lifetimes of Capesize vessels older than 15 years.

FLEET RENEWAL POTENTIAL (DWT)



Source: Clarksons, Danish Ship Finance

FLEET DEEP DIVE: GROWTH IN LNG-DRIVEN NEWCASTLEMAXES

LNG as a fuel could temporarily change the Capesize segment

Investments in LNG-fuelled Newcastlemaxes could provide some strategic solutions in an otherwise deadlocked Capesize market.

GROWTH IN LNG-FUELLED NEWCASTLEMAXES

Of the current orderbook of Newcastlemax vessels, around 35% (40 vessels) are LNG-ready, while two vessels in the current fleet already run on LNG. After delivery of the current orderbook, around 5% of the Newcastlemax fleet will be fuelled by LNG.

FIRST LNG-DRIVEN NEWCASTLEMAX CHARTERED IN

In February this year, the Australian mining company BHP chartered in the world's first (dual) LNG-fuelled Newcastlemax on a long-term contract with a fixed bunker supplier. Consequently, BHP will reduce its carbon footprint by 30% for each voyage by the new Newcastlemax vessel.

VERSATILE VESSELS DESPITE THEIR SIZE

LNG-driven Newcastlemaxes are ideal for the transportation of iron ore from Australia to Asia with the opportunity to bunker in Singapore. The iron ore trade between Australia and Asia (mainly China) employs around half of the Newcastlemax fleet. The Newcastlemax design (maximum beam of 50m and length of 300m) ensures possible load and discharge in multiple ports in an otherwise linear lane between Australia and Asia.

A MEANS TO GROW IN A LOW MARKET

We expect iron ore volumes to expand very little in the coming years, which limits the volume growth

potential. Thus, for newcomers, and small and mid-sized shipowners, strategic partnerships with cargo owners and suppliers of fuel with lower carbon content could provide an opportunity to differentiate themselves from large shipowners and create a market stronghold. Eventually, already established players may follow suit in order to remain attractive to cargo owners.

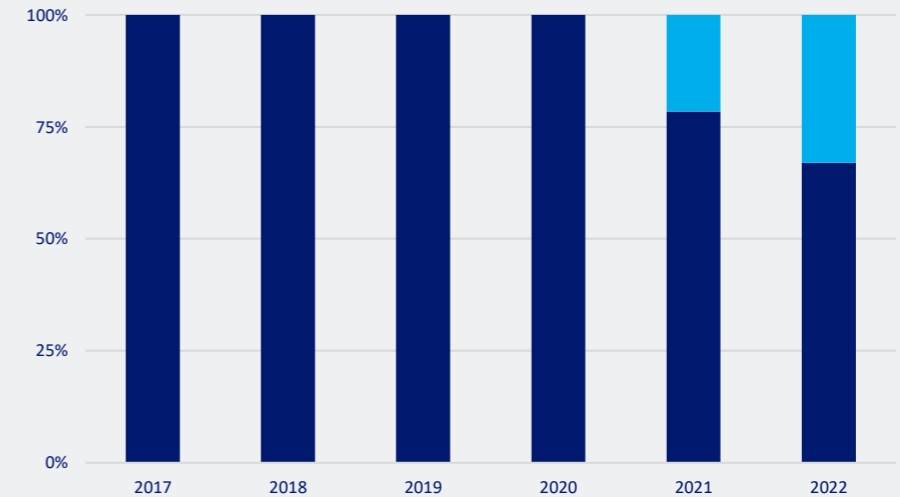
A SCALABLE SOLUTION

From a long-term perspective, the lower carbon footprint of voyages could raise the entry barriers for certain trades, while fixed fuel and cargo freight contracts reduce the technological risk. Since load and discharge ports are often the same, such agreements are applicable to most Capesize routes. This could spark further investments in LNG-driven vessels. With a sluggish demand outlook, older vessels not already on long-term contracts could be forced to operate at earnings discounts or see their economic lifetimes shorten.

BUT NOT VALUE ADDING IN THE LONG TERM

Two factors could limit LNG investments. First, eventually zero-carbon fuel will emerge, raising the entry barriers further. Second, shipowners investing in a fuel containing less carbon is unlikely to result in value creation once others start to follow suit. Thus, from a long-term perspective, LNG-driven Newcastlemaxes may not increase the value added for their owners, although in the immediate future they could change the dynamics in the Capesize market.

FUEL MIX OF THE NEWCASTLEMAX ORDERBOOK (DWT)



SHARE OF LINE OPERATION* IN THE CAPE SIZE SEGMENT



*70% of all voyage activity on one route.

Source: BHP, Clarkson's, Danish Ship Finance

DRY BULK DEMAND OUTLOOK

The demand picture varies considerably across vessel sizes

The largest vessels are facing a challenging demand outlook as the Chinese steel industry weakens. Future demand for sub-Capesize vessels seems fairly firm.

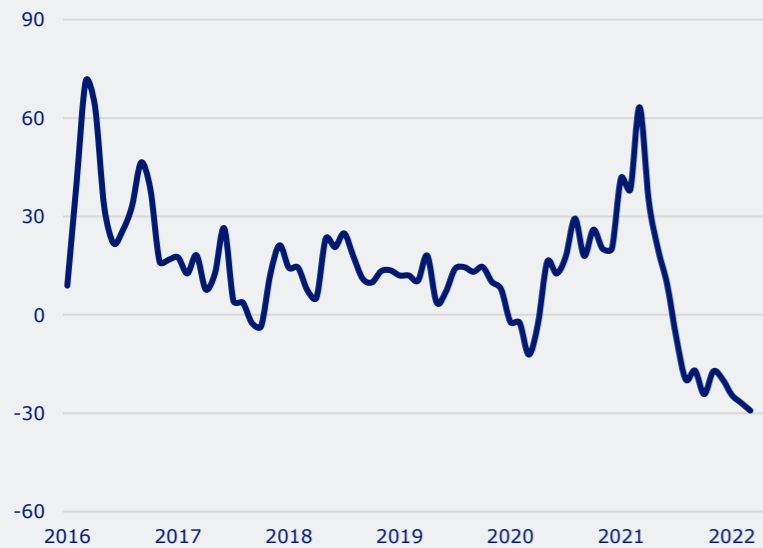
SLOW BUT STEADY GROWTH

We expect Dry Bulk demand to grow at a CAGR of 1-2% in 2022 and 2023 – in line with pre-pandemic growth levels. Little or no expansion in iron ore volumes constrains the growth potential in the Dry Bulk market.

A WEAK CHINESE PROPERTY SECTOR IS CAUSING TROUBLE

The Chinese real estate industry is struggling with debt-laden property owners and declining growth rates for residential house sales. This is having a large impact on Chinese demand for construction steel and thereby iron

GROWTH IN CHINESE RESIDENTIAL HOUSE SALES (Y/Y)

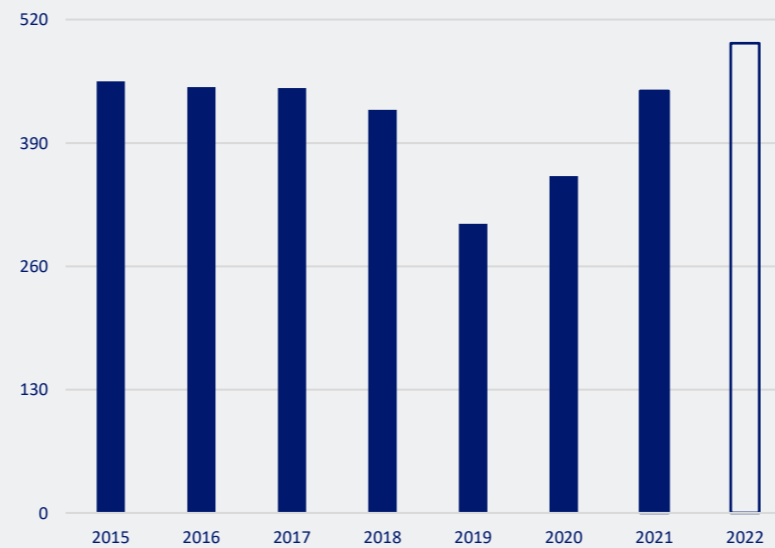


ore imports to China. We expect this to create headwinds for the Capesize segment in the coming years. The Capesize segment relies heavily on Chinese steel production, with 70% of all vessel demand derived from iron ore transport to China. Thus, we expect demand for Capesize vessels to grow by only 0-1% in 2022 and 2023.

GRAIN TRADE CONTINUES TO GROW

We believe that yet another strong year for grain trade will provide a boost to the mid-sized and small vessels (15% of sub-Capesize vessel volumes are derived from grain). We anticipate an increase in North and South American grain exports to North Africa and the Middle East, as the war in Ukraine is limiting Black Sea grain voyages. Consequently, tonne-mile demand will grow, although volumes may

CHINESE PIG HOARD (PIGS MM)

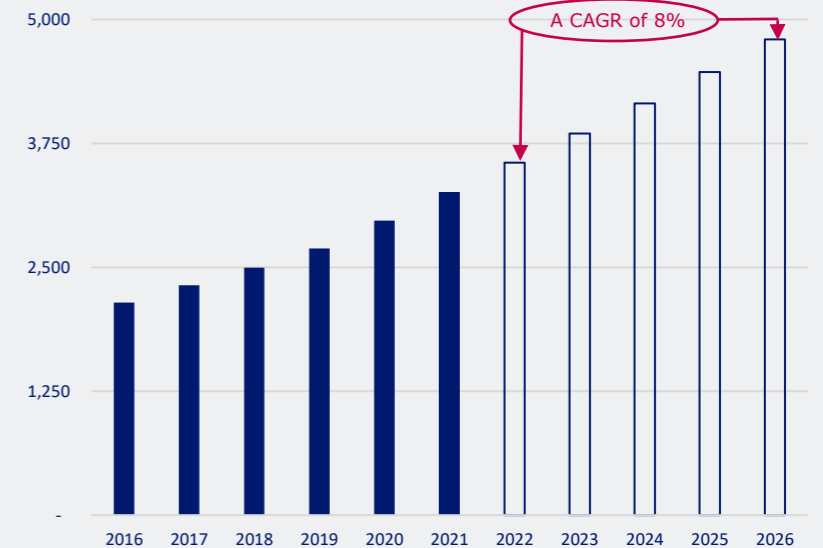


decline due to higher freight costs. In addition, we expect the rebuilding of the China pig hoard to continue, which will keep demand for grain for animal feed growing. Thus, we expect tonne-miles demand for grain trade to grow by some 5% in 2022 and 3% in 2023.

ELECTRIFICATION REMAINS THE MAIN GROWTH DRIVER

The coal and minor bulk trade drive approximately 65% of demand for Handymax and Panamax vessels. The trade limitations and bans on Russian gas and oil are likely to increase coal demand in the coming years, while global investments in renewable electricity capacity will rise, boosting demand for minor bulk metals. Consequently, demand volumes for Handymax and Panamax vessels could increase by 3% in 2022 and 2023.

TOTAL RENEWABLE ELECTRICITY CAPACITY (GW)



Source: AXS Marine, Clarksons, World Steel Organisation, National Bureau of Statistics of China, Danish Ship Finance

DEMAND DEEP DIVE: A NEW DAWN FOR COAL TRADE?

Coal trade is set to grow as the gas price explodes, but an increased focus on energy autonomy could accelerate the decline in coal volumes longer term

The Russian invasion of Ukraine has changed the energy market. Gas and oil prices are sky-rocketing, while countries are calling for greater energy autonomy. Coal volumes are set to rise in the coming months, but coal could become a niche market in the long term.

RUSSIA'S INVASION OF UKRAINE HAS CHANGED THE ENERGY PICTURE

In the wake of the Russian invasion of Ukraine, energy supply has become a geopolitical issue and many European countries are being forced to rethink their power grids and energy sources. The European Union is confident that increased energy efficiency will lower its dependence on Russian gas in the short term, while a surge in renewable investments is aimed at creating long-term energy autonomy in Europe. Before the investments in alternative energy sources materialise, thermal coal once again appears to be the solution to Europe's sourcing issues when energy efficiency proves insufficient

COAL VOLUMES RISE AS THE GAS PRICE EXPLODES

The energy situation in Europe could boost Dry Bulk demand over the coming 12-18 months. Coal trade accounts for around a quarter of all Dry Bulk demand. The effort to reduce imports of Russian gas in Western countries has caused a surge in the gas price, which is up 900% compared to February last year. Coal prices have only risen by 230% in the same period. In Europe, at current gas price levels (EUR 300 per megawatt hours), coal is a cheaper energy source for power plants even including the cost of carbon permits. The growing price spread between coal and gas led to European coal demand rising by 18% in 2021. It seems likely that coal burning will continue to increase as gas prices soar, boosting Dry Bulk demand in volume terms in the short to medium term.

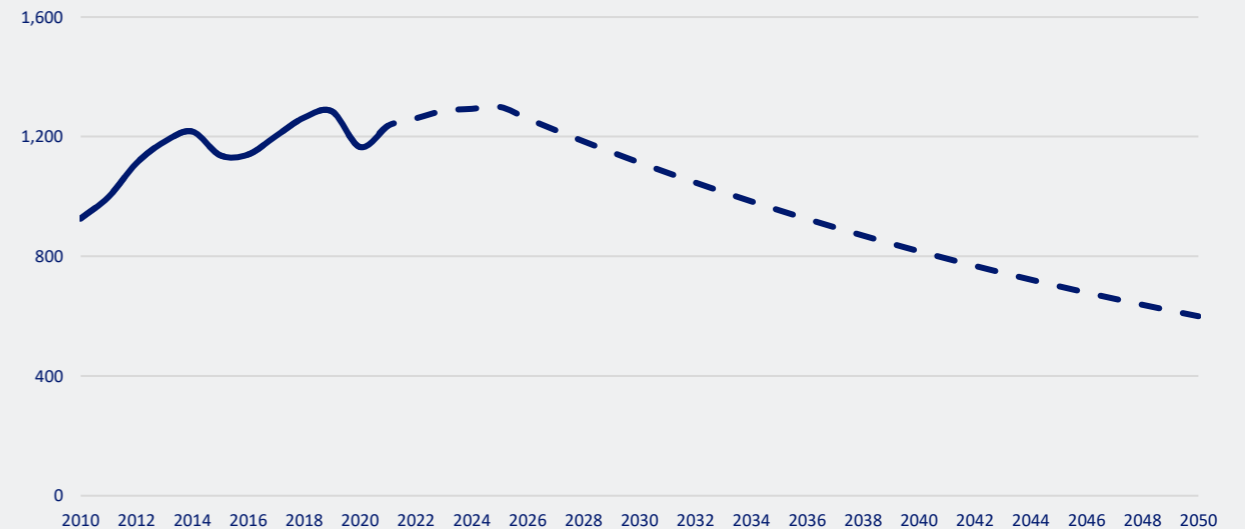
CHANGE IN COAL SOURCING INCREASES DISTANCES

Longer travel distances are amplifying the demand boost even further. Russia is by far the largest supplier of coal to Europe – in 2021, it accounted for about 30% of European seaborne coal imports. The Handysize vessels, in particular, are benefiting from short-haul Baltic trade. Following Russia's invasion of Ukraine, European countries will seek alternative coal sources. The US, Colombia and Australia seem to be obvious choices. In all these cases, voyage distances will increase markedly. In turn, this will lift earnings across segments, although Handysize vessels could find it more difficult to compete on the longer routes.

ACCELERATION OF THE ENERGY TRANSITION BRINGS STRUCTURAL CHALLENGES

While the current challenges associated with European energy sourcing are benefiting Dry Bulk owners, there could be a negative tonne-mile effect in the long term. As part of the EU's Fit for 55 plan, European countries have pledged to double the energy generated from solar cells and wind turbines by 2025 and treble it by 2030. These same countries will now accelerate this trend in order to achieve energy autonomy. Some Southeast Asian countries may follow suit. Therefore, we believe that by the mid-2020s coal volumes will begin to decrease, and at a faster pace than previously expected. Coal trade is set to persist long into the future but will increasingly be centred on Chinese imports and Brazilian and South African exports and in much smaller volumes from a global perspective. This leaves Capesize vessels the natural choice for coal voyages, while small and mid-sized vessels will have to find employment elsewhere. Thus, in the long run coal trade will be a niche market for the largest vessels.

SEABORNE COAL VOLUMES (MILLION TONNES)



Source: AXS, Marine, Bloomberg, the European Commission, Wood Mackenzie, Danish Ship Finance

CRUDE TANKER



CRUDE TANKER

The tanker market is positioning itself for a gain in the short term

The Covid-19 pandemic reduced global oil demand significantly, while the Russia-Ukraine war has challenged global oil supply. Oil demand has gradually rebounded from Covid, but Crude Tanker demand has been low, as oil supply has struggled to meet the growing demand. However, cargo supply is expected to pick up in the short term, which will boost seaborne demand volumes. Geopolitical risks will likely change how crude oil is traded today, as Western countries will look to substitute Russian oil with oil from other parts of the world, boosting tonne-mile demand in the short to medium term. These uncertainties are encouraging owners to buy older secondhand vessels as they position themselves for higher freight rates, while avoiding long-term exposure to peak oil demand.

FREIGHT RATES AND SECONDHAND PRICES

VLCC earnings plummeted to a negative territory in April 2022, while Suezmax and Aframax earnings have risen significantly, although they remain at low levels. Current oil prices have increased the appetite for eco and scrubber-fitted vessels, which has resulted in a higher earnings premium for these types of vessels. Secondhand prices have also appreciated, reflecting expectations of higher future earnings.

VLCC: Low fleet utilisation has prevented freight rates from increasing, despite 3% volume growth during the first two months of 2022 (compared to the same period last year). In the past six months, the one-year timecharter rate has lost 10%, reaching USD 15,750 per day by April. This level is the lowest registered since 2000. Nonetheless, the price of a five-year-old VLCC has increased by 3% to USD 74 million.

Suezmax: Demand for Suezmax vessels declined in the first two months of 2022 as

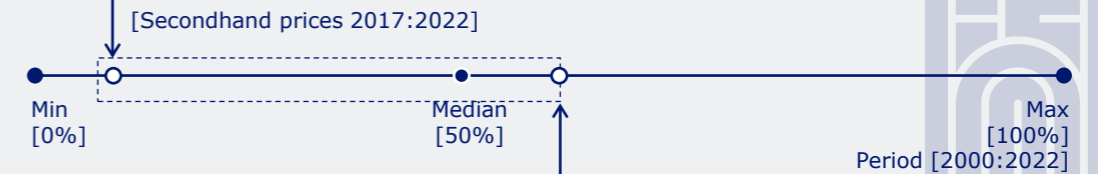
both volumes and distances pulled tonne-mile demand down. Despite this, the one-year timecharter rate has risen by 17% in the last six months, while the price of a five-year-old vessel has increased by 4% to USD 50 million.

Aframax: Volumes for Aframax vessels have been increasing in the past six months, which has also lifted the one-year timecharter rate 14% higher. The price of a five-year-old vessel has increased by 13% to USD 45 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – May 2022

Freight rates are well below the median and have declined by 1.4% in the past six months



Secondhand prices are above the median and have increased 5% in the past six months

Tonne-mile demand for seaborne crude oil dropped by 1.2% in 2021. This was primarily explained by a 1% reduction in long-haul trade. Fleet utilisation weakened during the year, as the fleet expanded by 1.4%. Slow steaming in 2021 improved fleet utilisation slightly but failed to absorb the lost volumes. Utilisation improved slightly towards the end of the year in anticipation of winter, but volumes remained well below 2019 levels.

Deliveries have slowed, with 5 million dwt added to the fleet (1.2% of the fleet) in the first quarter of 2022 compared to 6 million dwt in the first quarter of 2021.

Scrapping increased from 2.2 million dwt in 2020 to 10.7 million dwt in 2021. The scrapping level have continued, with 1.1 million dwt demolished in the first quarter of 2022.

Contracting remained stable in 2021, with 15.2 million dwt contracted (primarily in the first six months) compared to 15.5 million dwt in 2020. As of 2022, no vessels have been contracted.

Orderbook: 30 million dwt is currently on order, a 15% decline since the start of the year. This represents 7% of the fleet, with 61% due to be delivered in 2022.

Demand: Seaborne trade volumes declined by 1% in 2021 compared to 2020, driven by a 6% drop in Asian demand. In the first three months of 2022, volumes were up by 3% compared to the same period in 2021 but were still below 2019 levels.

Travel distances: Long-haul trades suffered greatly in the second and third quarters of 2021 due to OPEC cuts. This meant that distances were 1% lower than in 2020.

MARKET DYNAMICS IN THE LAST SIX MONTHS

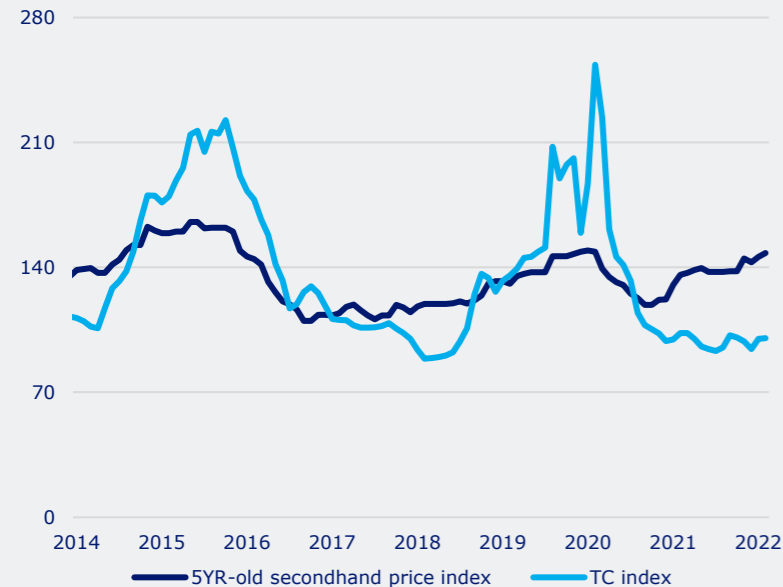
The Crude Tanker market is set for vast changes in light of recent developments

The crude oil market has seen some considerable developments in the past six months, with both geopolitical issues and supply-demand imbalances.

CONTINUED DIVERGENCE BETWEEN RATES AND VALUES

Freight rates and vessel prices have continued to diverge. The current rates reflect the low demand Crude Tankers have been facing due to low cargo supply from oil-producing countries. Secondhand prices have remained high, as tanker owners are anticipating higher future earnings on the back of an improved supply-demand balance in the oil market. The high newbuilding prices have discouraged owners from contracting new vessels; they have been buying vessels in the secondhand market instead.

SECONDHAND PRICE AND TC INDEX (2000=100)



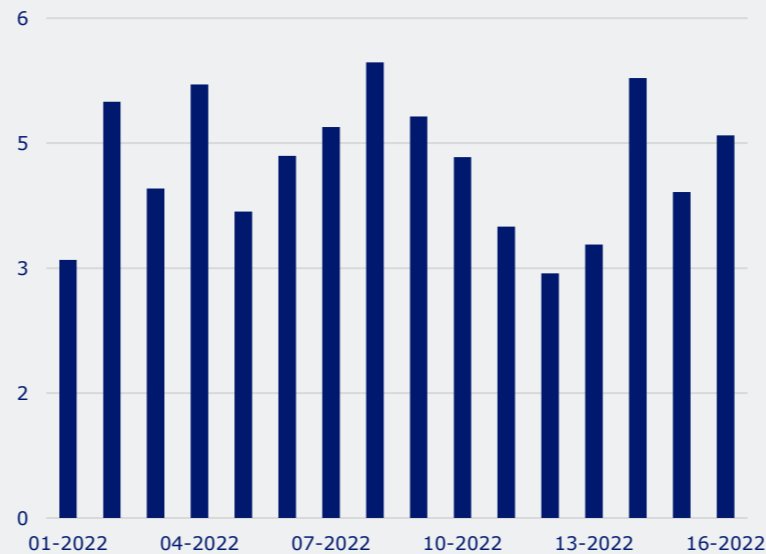
THE IMPACT OF THE SANCTIONS IS NOT VISIBLE YET

Russia's economy has been hit by widespread sanctions, which also have an impact on Russian exports of crude oil to Europe in the near term. However, much of the current European imports of Russian crude were contracted before the invasion started. As such, European-bound seaborne crude shipments have not yet experienced any significant declines. Neither has the number of Aframax vessels trading from the Baltics and Black Sea dropped yet (April 2022).

OPEC+ HAS BEEN STRUGGLING TO MEET PRODUCTION TARGETS

While global oil demand has gradually been increasing, up by 1.3 mbpd in the past six months, oil supply has

WEEKLY CRUDE LOADINGS FROM RUSSIA (MILLION MT)

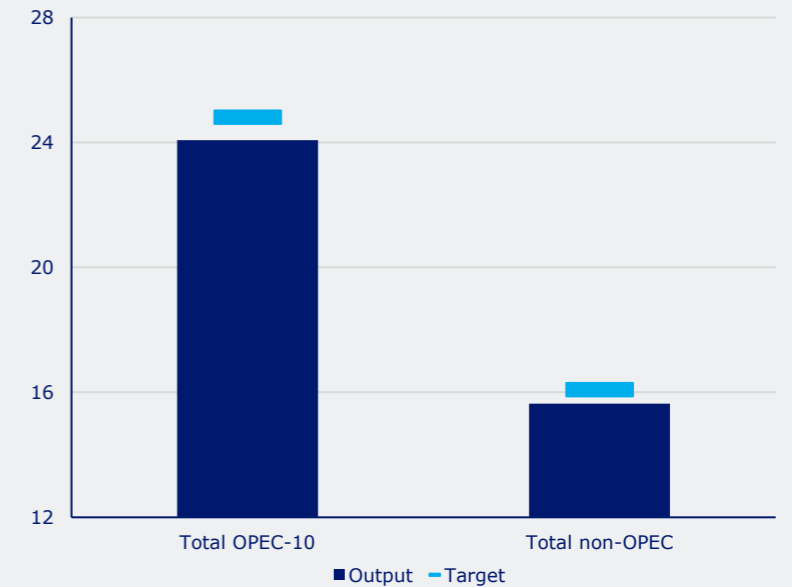


struggled to follow. The main reason is that OPEC+ has not been able to meet its production target of increasing oil output by 0.4 mbpd per month. African OPEC countries have been struggling to comply with the target, as both upstream and downstream investments have been kept low in the past few years. In February alone, OPEC+ production fell 1.2 mbpd short.

OIL PRICES HAVE SURPASSED USD 100 PER BARREL

Oil prices have been gradually increasing since bottoming out in April 2020, as oil demand recovered ahead of supply. However, the recent geopolitical tensions have pushed oil prices above USD 100 for the first time since 2014, while the Russian Urals price has plummeted and is now trading at almost a USD 30 discount to Brent.

OPEC+ PRODUCTION VS TARGET FOR FEBRUARY (MBPD)



Source: Clarksons, Alphatanker, IEA, Danish Ship Finance

SUMMARY: CRUDE TANKER MARKET OUTLOOK

Global inefficiencies will boost demand for Crude Tankers in the short to medium term

Crude oil demand is expected to rebound, but global oil supply is struggling to follow suit. Global supply chain inefficiencies, due to Russia’s invasion of Ukraine, will likely boost tonne-mile demand in the short term. The fleet is set for a modest growth, as uncertainty about the oil tanker market is discouraging owners from contracting new vessels. Freight rates are currently at an all-time low, while vessel prices have remained high, reflecting expectations of higher future earnings.

SEABORNE VOLUMES ARE EXPECTED TO PICK UP LATER IN 2022

Low oil production from OPEC+ has kept demand for Crude Tankers – especially VLCCs and Suezmaxes – low. However, the nature of the oil price currently is such that it is encouraging more investment in upstream activities and thereby production of oil. As such, we will see oil supply increasing steadily, driven by Saudi Arabia and the US. This will most likely boost demand for Crude Tankers.

LONGER DISTANCES DUE TO INEFFICIENCIES WILL BOOST SHORT-TERM TONNE-MILE DEMAND

Tonne-mile demand is expected to increase by 7.5% in 2022 and 3.3% in 2023 as the Russia-Ukraine war alters the trade flows of crude oil. The Aframax segment is the most exposed, as around 10% of the fleet has its majority trade between Russia and Europe/North America. If China and India opt to increase their oil sourcing from Russia, swayed by large price discounts, this might absorb a large number of the exposed Aframax vessels. The US and Europe may similarly start sourcing their imports from the Middle East, especially if sanctions on Iran are lifted. In general, inefficiencies in crude trade flows will drive up voyage distances, ultimately resulting in higher tonne-mile demand for larger vessels.

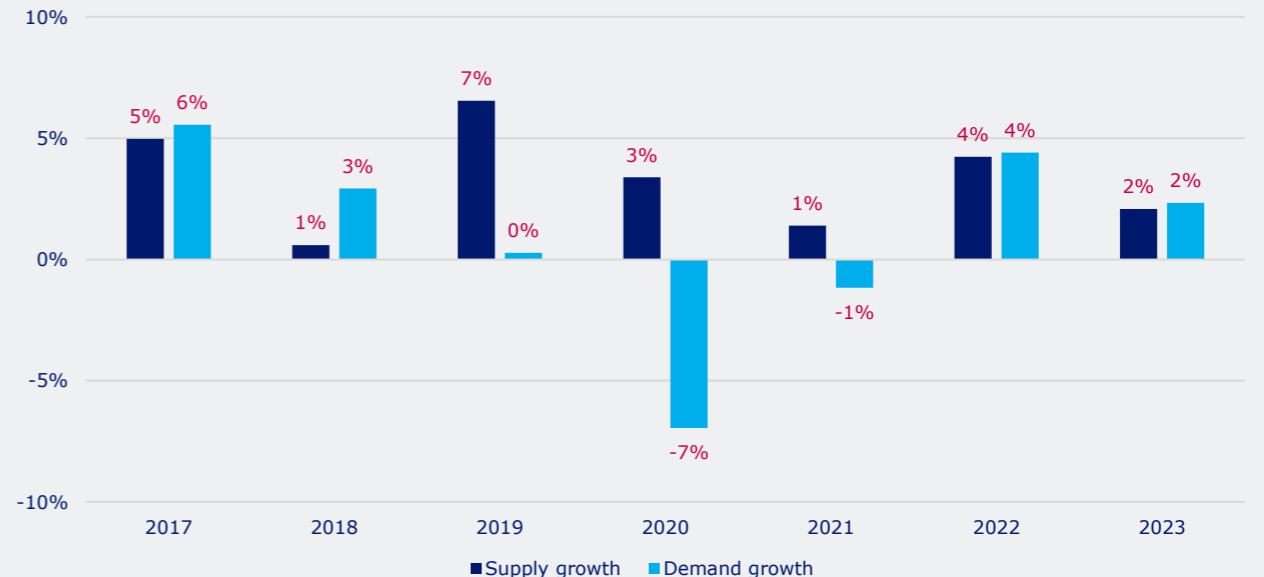
LIMITED GROWTH IN THE FLEET IS EXPECTED IN THE SHORT TO MEDIUM TERM

Vessel prices have remained high reflecting expectations of higher future earnings. This narrative stems from the fact that the orderbook is currently at a historical low, resulting in only a modest increase in fleet capacity in the medium term. Moreover, limited yard availability, elevated newbuilding prices and uncertainty about the future have discouraged owners from contracting new vessels, while demand is on the rise. Shipowners have been flocking to the secondhand market as they position themselves for higher rates and vessel prices in the near term.

ENERGY SECURITY MAY SPEED UP THE TRANSITION AWAY FROM FOSSIL FUELS

The geopolitical situation has prompted many OECD countries to commit large sums to investments in renewable energy, not only to meet climate alignment targets, but also to secure energy independence and hedge against geopolitical risks. The last time oil prices went above USD 100 per barrel, global investments in renewable energy doubled. If this development repeats itself, we may see global oil demand peak sooner than expected (previous estimates expected oil demand to peak around 2030).

SUPPLY AND DEMAND BALANCE (DWT AND TONNE-MILE)



Sources: Clarksons, Alphatanker, Danish Ship Finance

CRUDE TANKER FLEET OUTLOOK

Uncertainty about the oil tanker market is discouraging shipowners from contracting new vessels

The fleet is set for modest growth in the short to medium term. However, uncertainty about the future is discouraging owners from contracting vessels. The market is therefore positioned for increasing rates and values.

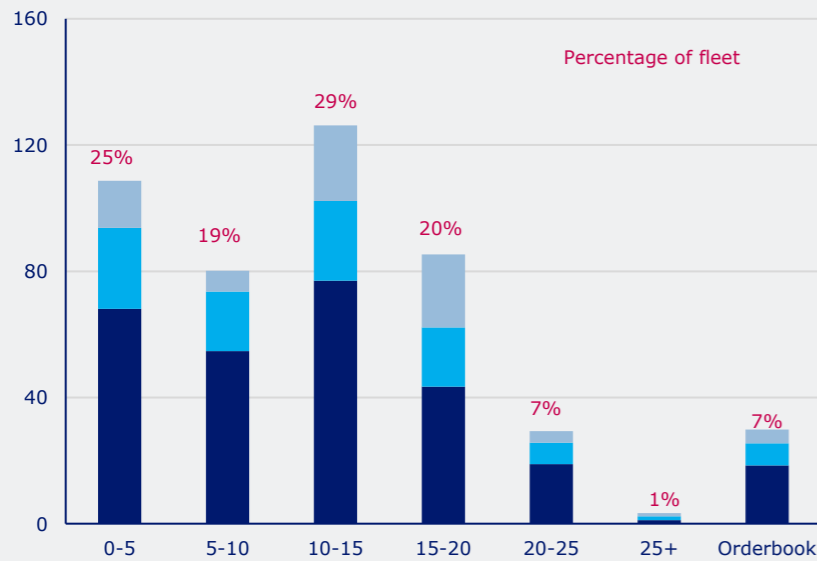
A MODEST INCREASE IN THE FLEET IN THE SHORT TERM

The orderbook is at a historical low, around 8% of the fleet – a level not seen since 1997. With the current orderbook, the fleet is set to expand by 5.2% in 2022, 2.4% in 2023 and 0.1% in 2024 before scrapping. Fleet growth may be slightly offset by vessels going for hull surveys and scrubber retrofits (just over 1 percentage point per year).

CONTRACTING ACTIVITY IS EXPECTED TO REMAIN LOW

Contracting activity experienced a steep fall of 86% in the second half of 2021. A combination of low yard capacity

AGE DISTRIBUTION (MILLION DWT)

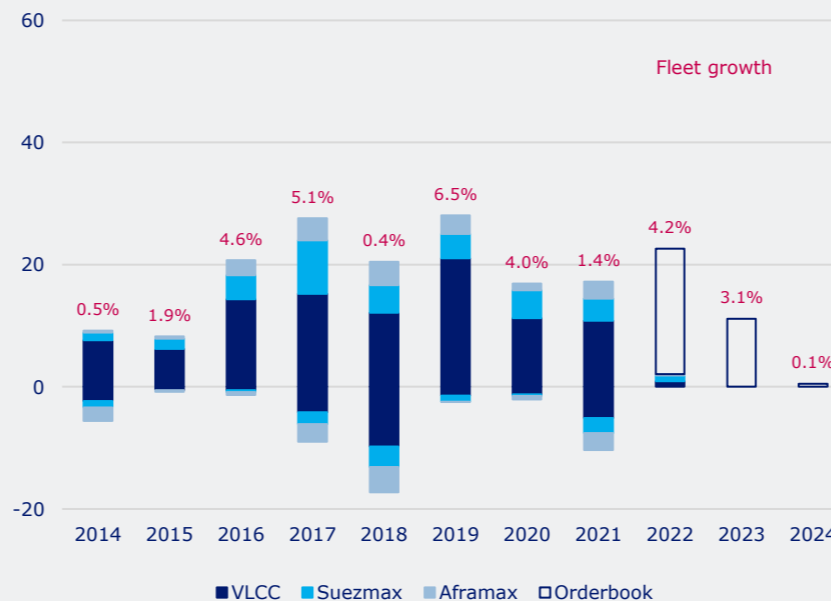


and uncertainty about future fuels has deterred shipowners from contracting new vessels, including those with dual-fuel (LNG) engines. These vessels did seem to be a temporary way forward. However, with LNG spot prices having soared by around 70% in the past six months, shipowners may be reluctant to contract new, more expensive dual-fuel vessels for now.

2% OF THE CURRENT FLEET IS RUSSIAN OWNED

Russian oil exports and Russian-owned vessels have been sanctioned in various forms by some countries. Russian-owned vessels account for 2% of the Crude Tanker fleet – 7.5% of the Aframax segment. Europe accounted for 56% of all trade for these vessels in 2021, while North America accounted for 6%. Thus, depending on the extent and

FLEET DEVELOPMENT (MILLION DWT)

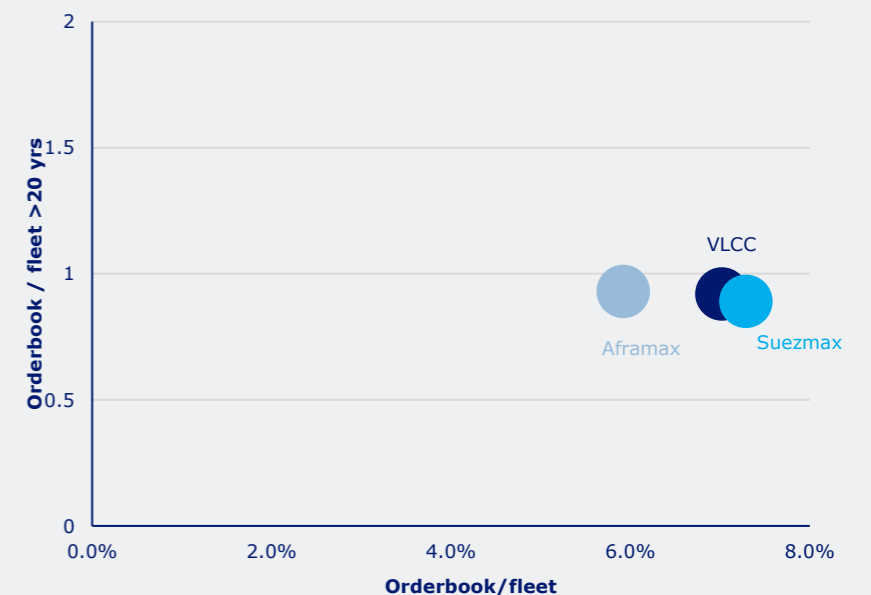


length of the sanctions, the active fleet trading in the west could be reduced by 1.2%. However, these vessels will most likely be reemployed with trades to the Far East. Additionally, 18 vessels in the orderbook (0.7% of the fleet) have either been contracted by Russian owners or are being built at Russian yards; these orders will most likely be postponed for an indefinite period.

TANKERS ARE EXPECTED TO RETURN FROM FLOATING STORAGE

In the past six months, 16 vessels have returned from floating storage (1.2% of the fleet). Current price futures indicate that prices will remain above USD 90 per barrel in 2022, which may lead to more drawdowns of global inventories, starting with more expensive seaborne storage. This will lead to further inflow of active tonnage.

FLEET RENEWAL POTENTIAL (DWT)



Source: Clarksons, Danish Ship Finance

FLEET DEEP DIVE: A BOOMING SECONDHAND MARKET

The secondhand market seems the obvious choice in uncertain times

Shipowners have been flocking to the secondhand market as they position themselves for higher freight rates and vessel prices in the near term.

TURNOVER RATIO INCREASED TO OVER 10% IN 2021

The turnover ratio for Crude Tankers reached 10.6% in 2021, compared to the historical average of 6.7%. Shipowners invested a total of approximately USD 7.8 billion in Crude Tankers in the secondhand market, a level not seen since 2014. The increase in S&P activity was attributable in particular to Greek owners buying VLCC and Aframax vessels, while few Suezmax vessels were transacted. The high activity level pushed secondhand prices up by 12% in 2021.

SECONDHAND MARKET THE ONLY AVAILABLE OPTION

Orderbooks at the top ten preferred yards (which have built 85% of the Crude fleet) show that capacity is fully booked with orders for Container and LNG vessels up to 2024. This, coupled with high steel prices, has pushed newbuilding prices up to a 13-year high. Shipowners are therefore reluctant to order new vessels. Hence, uncertainty about future fuels and LNG bunker prices soaring have discouraged owners from contracting LNG-powered vessels.

OVER 40% OF SALES IN 2021 WERE OLDER VESSELS

Digging deeper into sales in 2021 reveals that primarily older vessels were sold. Over 40% of total sales in 2021 were of vessels between 15 and 20 years of age. In contrast, the historical average for

this age group has been 19%. This may indicate that buyers are expecting a better market soon, while sellers are taking advantage of current vessel prices. Current freight rates are sufficient to pay the value of an extra five years of earnings with a 15-year-old vessel. This may imply that there is more incentive for purchasing older vessels amid the current market conditions. On the seller side, there is a reluctance to demolish vessels, even though the price gap between a 15-year-old VLCC and the average scrap price is USD 9m (USD 12.4m historically). This is still not enough to persuade owners to demolish tankers.

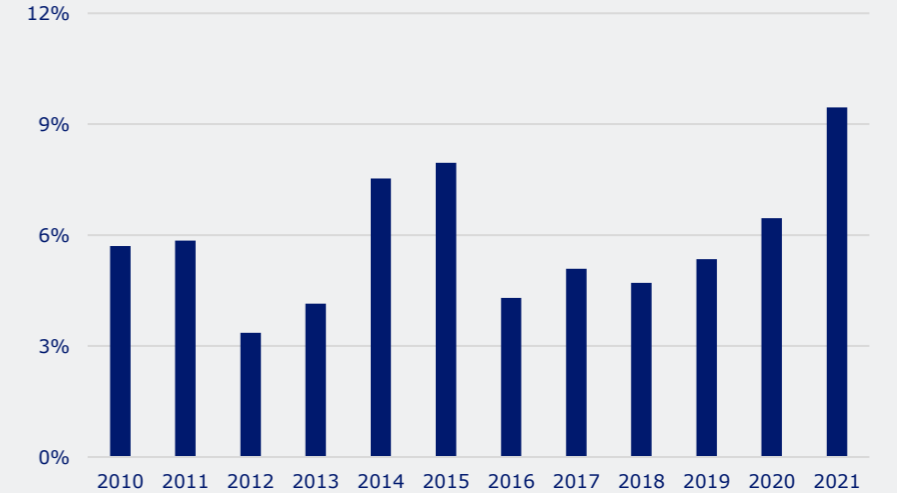
OWNERS LOOKING TO ADJUST ASSET RISK

60% of the vessels sold in 2021 were bought by owners who do not already have large Crude Tanker fleets (more than five vessels). This may suggest that new players in the market are speculating on short-term gains by acquiring relatively old vessels. On the seller side, we are seeing established owners offloading their older vessels. There are also cases where established owners are taking advantage of current rates and prices to engage in sale-leaseback transactions in order to reduce asset risk.

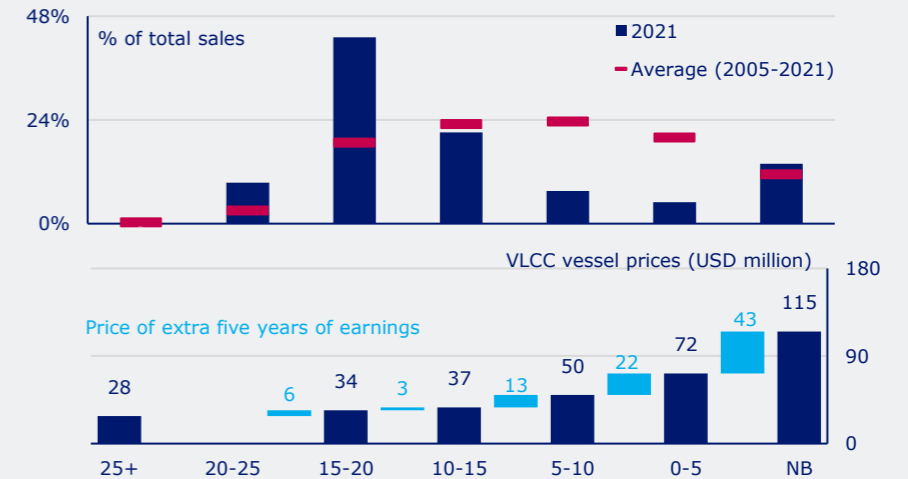
SECONDHAND MARKET WILL CONTINUE TO BE ACTIVE

The current nature of the Crude Tanker market suggests that the high level of activity in the secondhand market will prevail for some time until there is more clarity about the long-term outlook.

CRUDE TANKER TURNOVER RATIO BY YEAR (% OF FLEET)



SALES BY AGE GROUP AND VLCC VESSEL PRICES



Source: Clarksons, Danish Ship Finance

CRUDE TANKER DEMAND OUTLOOK

Better prospects for larger vessels in the short to medium term

Demand for large Crude Tankers is set to increase in the short to medium term driven by global inefficiencies. But peak oil demand may have been brought forward by the Russia-Ukraine war.

OIL SUPPLY PROJECTED TO INCREASE BY 4.2 MBPD IN 2022

Current forecasts indicate that oil demand will increase by 2.2% and return to pre-COVID levels by the end of 2022, partly driven by the rebound in jet fuel demand in OECD and Asian countries. The forecasts have been revised down by 1.1 mbpd, as the Russia-Ukraine war has weighed on global GDP. Oil supply is projected to increase by 4.2 mbpd and will most likely surpass demand at the end of 2022. Seaborne demand is set to increase by 7.5% in 2022 and 3.3% in 2023, as longer travel distances will

boost tonne-mile demand in the short to medium term.

SHALE COULD BOOST US SEABORNE EXPORTS BY AROUND 40%

Expectations of continued high oil prices and a tight market balance are slowly driving investments in the US shale industry up. The number of new oil rigs in the US has increased by 30% in the past six months. This could lead to growth in crude oil production of 2 mbpd in 2023 and boost US seaborne crude exports by 1 mbpd. Seaborne US crude exports were primarily discharged at Western European ports or Asia in 2021 and were driven by VLCCs and Aframaxes.

DEPLETED OIL INVENTORIES WILL HAVE TO BE BUILT BACK UP

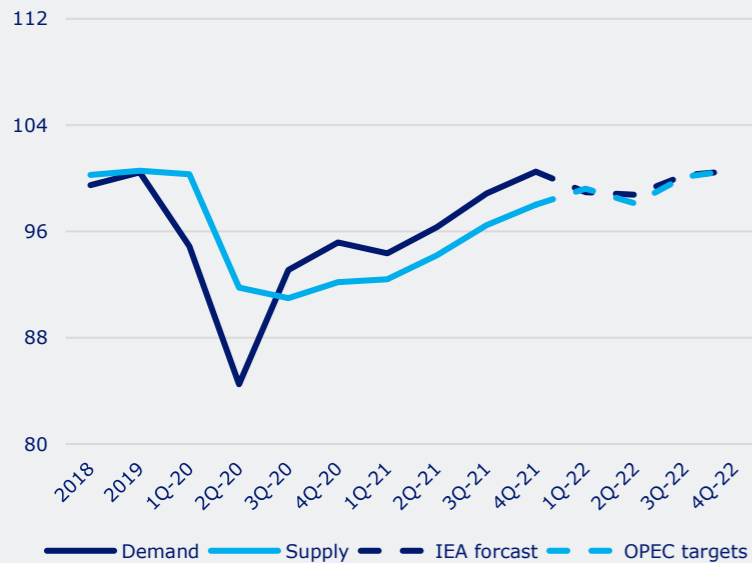
Rising oil demand, coupled with inadequate supply growth,

has depleted global oil inventories significantly. Crude oil inventories in OECD countries decreased by 12% in 2021 to 2.6 billion barrels. OECD inventories are expected to remain at a minimum in the coming months before being slowly built up again ahead of the winter period.

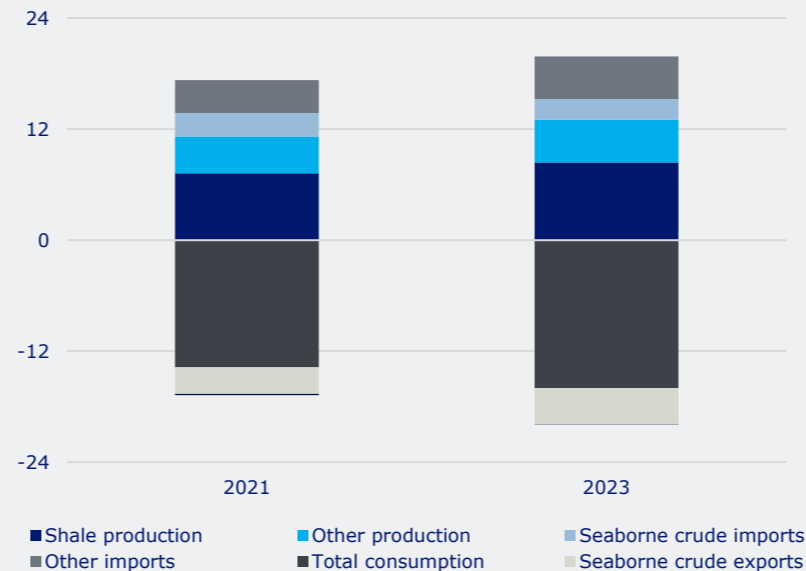
SHORT-TERM GAIN BUT LONG-TERM PAIN

Seaborne demand for crude oil will increase in the short to medium term, c.f. demand deep dive. However, the current nature of oil prices and energy security will most likely accelerate the transition away from fossil fuels in the long term. Many OECD countries have already committed to investing large sums in renewables in order to reduce their dependence on Russian oil and gas. Thus, global oil demand could peak sooner than expected.

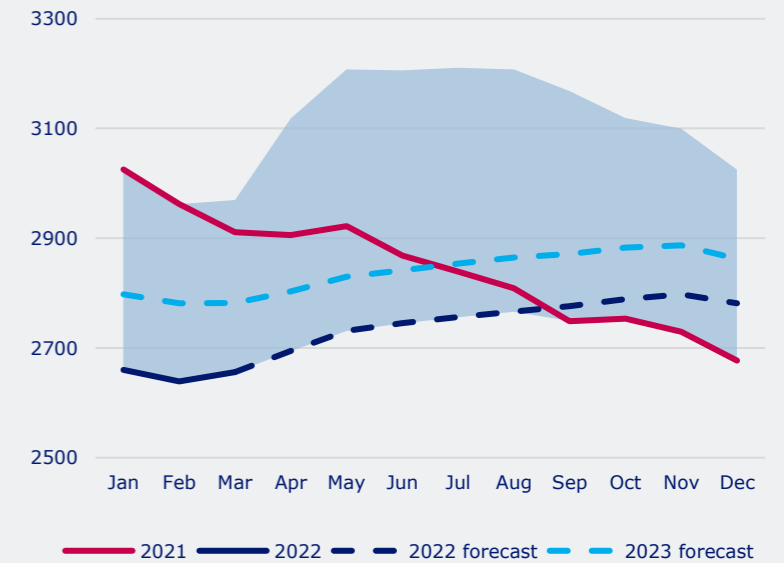
OIL SUPPLY AND DEMAND FORECAST (MILLION BPD)



US OIL SUPPLY AND DEMAND FORECAST (MILLION BPD)



OECD CRUDE OIL INVENTORIES (MILLION BARRELS)



Source: Clarksons, IEA, Alphatanker, EIA, Danish Ship Finance

DEMAND DEEP DIVE: A RADICAL CHANGE IN CRUDE TRADE FLOWS?

A shift in global crude trade flows is expected, which might benefit larger vessels but will leave smaller vessels behind

The Russian invasion of Ukraine will most likely change how crude oil is traded today. This may have a negative impact on the Aframax segment, while the Suezmax and VLCC segments might benefit.

10% OF THE AFRAMAX FLEET COULD BE AT RISK OF RUNNING OUT OF EMPLOYMENT

In 2021, Russia supplied a quarter of Europe's seaborne crude oil imports, while it accounted for only 2% of North American crude imports. In other words, European refineries (especially in Poland, Germany and the Netherlands) are highly dependent on oil from the Urals. The EU has proposed a plan to cut Russian fossil fuels significantly by the end of this year and be fully independent by the end of the decade. To date, Russian crude loadings to Europe have not seen any significant decline, as many of the current loadings are running on contracts that date from before the invasion. However, we have still identified around 10% of the Aframax fleet that could be at risk of running out of employment in the short run, as their Russia to Europe/North America trade makes up over 50% of their total trade. Of this 10%, only 0.1-0.5 percentage points are older than 20 years and thus at risk of demolition.

CHINESE DEMAND COULD COME TO THE RESCUE FOR AFRAMAX VESSELS AT RISK

Apart from Europe, China is one of the main destinations for Russian seaborne crude exports, accounting for over 13% of total Russian exports in 2021. Around 80% of that trade is covered by the Aframax segment transporting crude oil from the far east of Siberia (Port of Vladivostok) to various ports around China. China's oil demand is currently expected to increase by 0.4 mbpd in 2022. Should this increase be sourced from seaborne Russian imports from the far east of Siberia, it would only require around 13 Aframax vessels (2% of the Aframax fleet). Alternatively, should the crude oil be shipped from the Baltics, then this could absorb 6% of the Aframax fleet.

US AND EUROPE ARE LOOKING FOR OTHER SOURCES OF OIL IMPORTS

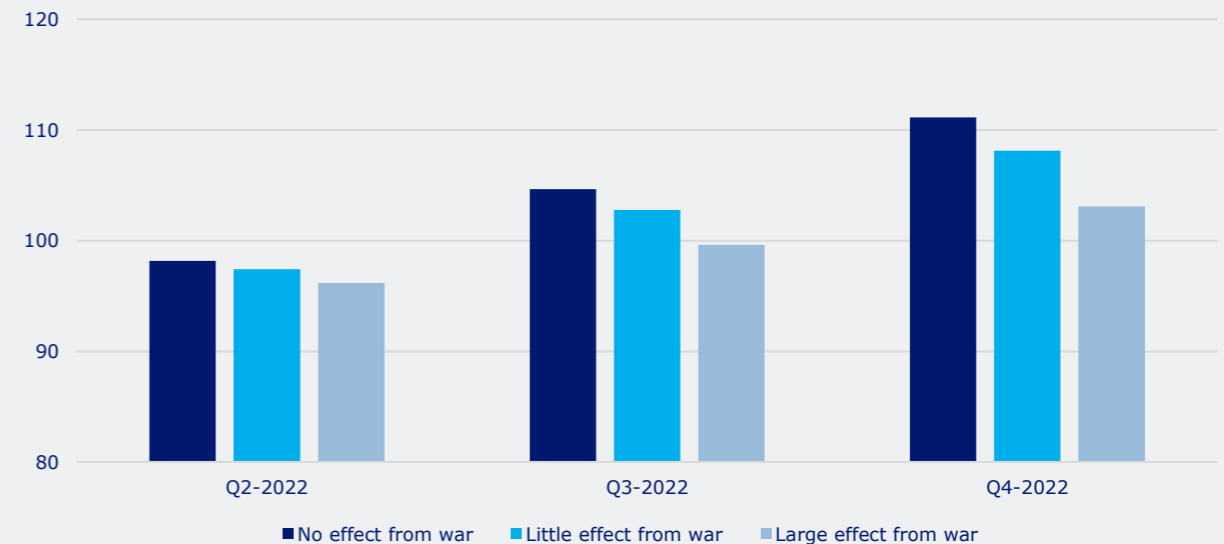
In an effort to reduce their dependence on Russian oil and gas, the US and Europe have been looking for other places from which to source crude oil. Iran and Venezuela are natural options, as the crude oil grade is similar to that from the Urals. Last time sanctions on Iran were lifted, it produced around 3.8 mbpd of crude oil, of which 2 mbpd were exported by sea. If the current sanctions were lifted, the IEA estimates that

production could reach its full capacity in six months. Venezuela has been struggling with sluggish investments in its oil production facilities due to tight sanctions. As such, if sanctions were lifted, the IEA estimates it would be able to ramp up its production to 1 mbpd, compared to 2.4 mbpd before sanctions were introduced.

TONNE-MILE DEMAND IS EXPECTED TO INCREASE IN THE SHORT TO MEDIUM TERM

Historically, loadings from Iran and Venezuela have primarily been shipped by Suezmax and VLCC vessels. China and India have been the main buyers of oil from these countries, while the US has historically weighed in on the trade from Venezuela. Should sanctions be lifted, we may see the US and Europe start sourcing their crude imports from these countries, increasing demand for Suezmax and VLCC vessels in the medium term. At the same time, it is more likely that Russia's crude loadings on Aframaxes bound for Asia will continue to be shipped from the Baltics/Black Sea, as the infrastructure to transport the crude oil to the far east of Siberia is not sufficient. Thus, global geopolitical issues are expected to boost tonne-mile demand, as inefficiencies in trade flows will increase.

TONNE-MILE FORECAST FOR ACTIVE AFRAMAX FLEET (Q1-2019=100)



Source: Clarksons, IEA, Alphatanker, EIA, Danish Ship Finance

PRODUCT TANKER



PRODUCT TANKER

Low orderbook and rebound in demand is a good mix for Product Tankers

Global inefficiencies have resulted in longer distances for Product Tankers, but seaborne volumes are still below pre-Covid levels. Low net fleet growth due to higher scrapping has translated into higher freight rates across all segments – although MR Tankers have benefited the most. The short-term supply outlook is supportive, as shipowners have stayed away from the newbuilding market. Furthermore, upcoming regulations and sanctions against Russia could further lower the fleet growth. Demand is also expected to increase, but uncertainty over high inflation rates and inadequate crude supply to refineries persists. Freight rates are, for now, expected to increase on the back of higher tonne-mile demand and low fleet growth.

FREIGHT RATES AND SECONDHAND PRICES

Product Tanker earnings have more than tripled, going from USD 6,400 per day in September 2021 to over USD 26,000 per day in April 2022. The increase has been partly supported by a spike in spot rates for vessels trading in the Baltics and Black Sea (around 10% of the total port calls in 2021). Secondhand prices have also appreciated and remain well above their median level, reflecting expectations of higher earnings.

LR2: Despite fleet utilisation for LR2 Tankers weakening in the first four months of 2022, the one-year timecharter rate has managed to increase by 21% in the past six months, reaching USD 19,750 per day in April 2022. The price of a five-year-old LR2 Tanker has increased by 13% in the same period to USD 47.5 million.

LR1: Demand for LR1 Tankers declined in the first few months of 2022, as limited cargo supplies left LR1 Tankers without work on long-haul routes. Nevertheless,

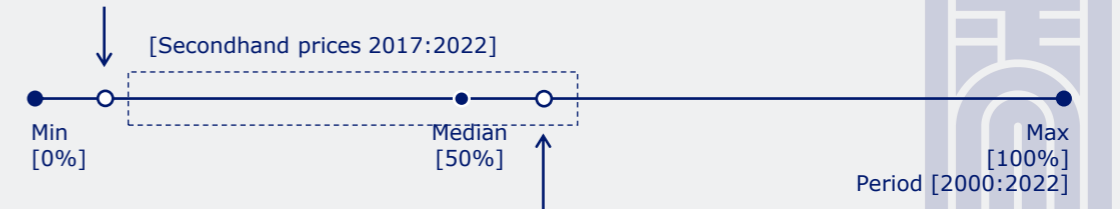
the one-year timecharter rate has improved by 16% in the past six months, to reach USD 15,700 per day in April 2022. The price of a five-year-old vessel has also increased 13% to USD 35 million.

MR: Both cargo volumes and distances have increased, as high market sentiment boosted demand for MR Tankers. The one-year timecharter rate has surged by 22% in the past six months to USD 15,125 per day, while the price of a five-year-old vessel has risen by 4% to USD 29 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – May 2022

Freight rates are low but have increased by 10% in the past six months



Secondhand prices are above the median and have increased 15% in the past six months

Global seaborne demand increased by 5% in 2021. Volumes were up by 2%, while travel distances added 3% to demand growth. Average speeds of Product Tankers saw a marginal decrease as volumes are still not at pre-Covid levels. The fleet expanded by 2%. Surplus vessel capacity in the Crude Tanker market has pushed more Crude Tanker vessels into the Product Tanker market and thereby reduced fleet utilisation.

Deliveries increased from 5 million dwt in 2020 (2.8% of the fleet) to 7.4 million dwt in 2021 (4.1%). So far in 2022, 1.5 million dwt has been delivered.

Scrapping reached the highest level seen in nine years in 2021, with 4 million dwt demolished. The high scrapping level seems to have continued, as 0.8 million dwt was scrapped in the first quarter of 2022.

Contracting remained low and stable in 2021, with 5.3 million dwt contracted compared to 5 million dwt in 2020. So far in 2022, 150,000 dwt has been contracted.

Orderbook: 9 million dwt is currently on order, a 13% drop since the start of the year. This represents just 4.7% of the fleet, with 48% expected to be delivered by the second half of 2022.

Demand: Volumes increased by 2% in 2021 compared to 2020, as oil demand has returned in many regions. In the first quarter of 2022, volumes remained stable compared to the same period in 2021.

Travel distances increased by 3% in 2021 compared to 2020, as demand for CPP returned in many regions, increasing long-haul trade especially for MR Tankers.

MARKET DYNAMICS IN THE LAST SIX MONTHS

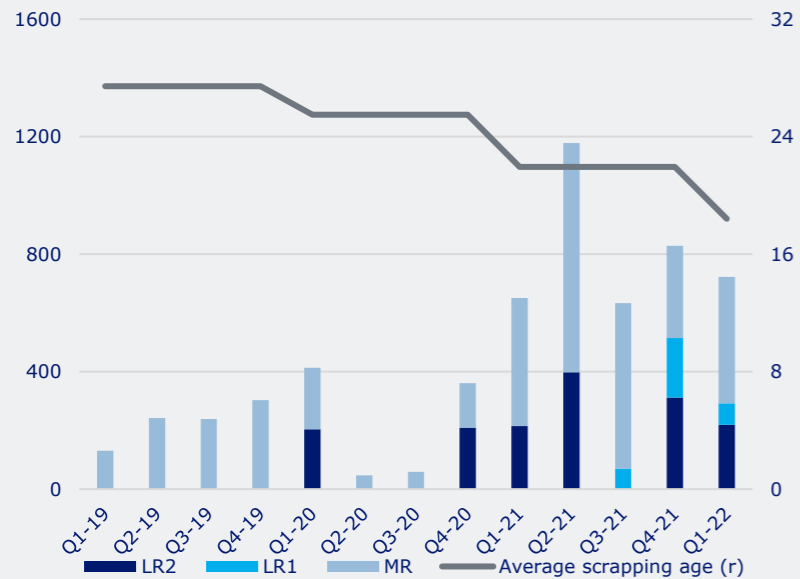
The volatile period seems to be continuing with factors other than market forces affecting demand for Product Tankers

Market sentiment improved for the smaller segments, but low cargo supply and high fuel prices has kept demand flat for larger vessels. The release of barrels from the Strategic Petroleum Reserves has not been felt by Product Tankers.

INCREASED VOYAGE INTAKE FOR MR TANKERS IN Q1 2022

Market sentiment improved for MR Tankers in the first quarter of 2022, with voyage intake increasing by 3.5% compared to the same quarter last year. This was supported by a growing CPP trade from the US to South America. Compared to 2019 levels, voyage intake was up by around 2%. Conversely, voyage intake for LR2 Tankers declined, as product trade from the Middle East to Europe decreased. Instead, Asian buyers upped their intake from the Middle East by approximately 6%.

DEMOLITION (THOUSAND DWT) AND AVERAGE SCRAPPING AGE



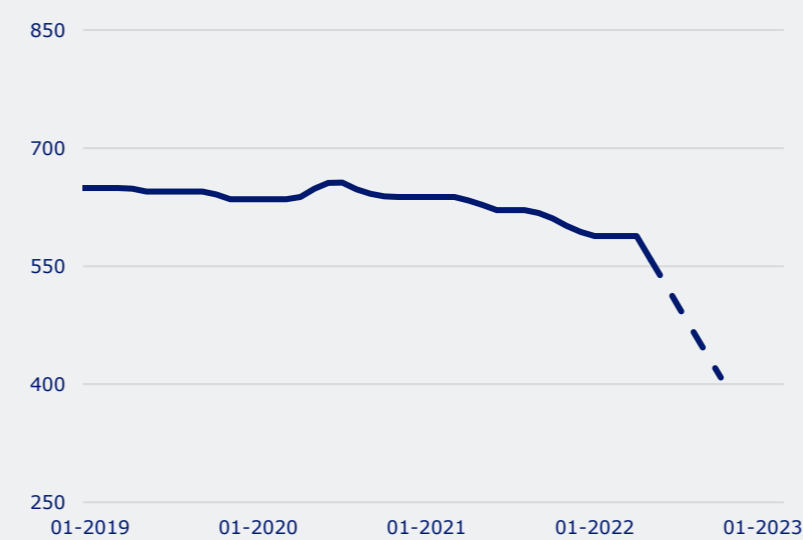
CONTINUED DEMOLITION ACTIVITY FOR MR TANKERS

Demolition activity was high in 2021, with 79 vessels scrapped (around 2% of the fleet). Of the 79 vessels, 84% were MR Tankers, while LR2 Tankers accounted for around 11%. This activity continued in the first three months of 2022, with 13 vessels scrapped (ten of them MR Tankers). The low demand for Product Tankers has also caused the average scrapping age to decline to 18-19 years in 2022. However, there are still many older MR Tankers in the fleet who are still trading.

1 MBPD RELEASED FROM STRATEGIC PETROLEUM RESERVES

In the wake of rising oil prices and OPEC's reluctance to increase output more than already planned, the US has decided to release 180 million barrels from its Strategic Petroleum Reserves (MILLION BARRELS)

STRATEGIC PETROLEUM RESERVES (MILLION BARRELS)

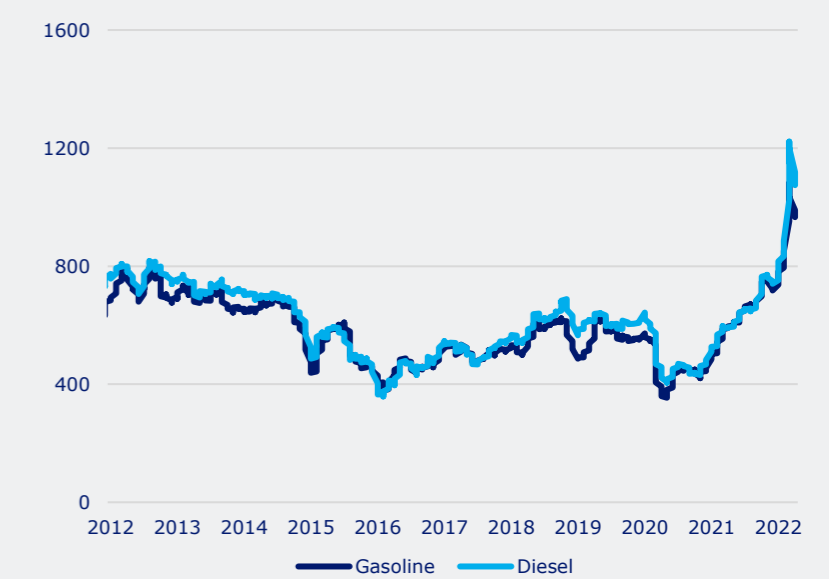


Petroleum Reserves in the next six months. Although the name might suggest otherwise, the reserves primarily consist of unrefined crude oil. The release has thus had a limited effect on demand for Product Tankers in the US.

SPREAD BETWEEN DIESEL AND ELECTRICITY HAS INCREASED

The imbalance between supply and demand for diesel has caused prices to skyrocket in all parts of the world. In the period between September 2021 and March 2022, diesel prices in Europe increased on average by 76%, while electricity prices were up by around 30%. As a result of these developments, the number of new registrations for EVs grew to represent 20% of total car sales in Europe in February. This trend is set to continue, reducing demand for diesel and gasoline in Europe.

DIESEL AND GASOLINE PRICES IN THE EU (EUR PER 1000 L)



Source: Clarksons, Alphatanker, EIA, Eurostat, Danish Ship Finance

SUMMARY: PRODUCT TANKER MARKET OUTLOOK

The Product Tanker market is set for higher earnings if cargo supply follows along

Seaborne refined product volumes are expected to increase by 13.6% in 2022 and return to pre-Covid levels in 2023, while tonne-mile demand has already surpassed these levels thanks to longer travel distances. Cargo supply remains tight, even though refinery runs and utilisation rates have increased significantly. We anticipate higher future earnings on the back of better market sentiment, as a low orderbook will keep fleet growth in check for some time.

LIMITED FLEET GROWTH IS EXPECTED IN THE SHORT TO MEDIUM TERM

Limited contracting of Product Tankers in recent months has sent the orderbook-to-fleet ratio to all-time lows. The current orderbook is set to expand the fleet by 2.7% in 2022 and 2.1% in 2023 before scrapping. Uncertainty about global oil demand coupled with limited yard availability has kept shipowners from contracting Product Tankers. The relatively low fleet growth compared to the expected increase in Product Tanker demand has boosted expectations for higher future earnings. As a result, the secondhand market has been fairly active, as the market has been consolidating in order to position itself for the future.

GHG REGULATIONS MAY CHANGE HOW TANKERS TRADE IN THE NEAR TERM

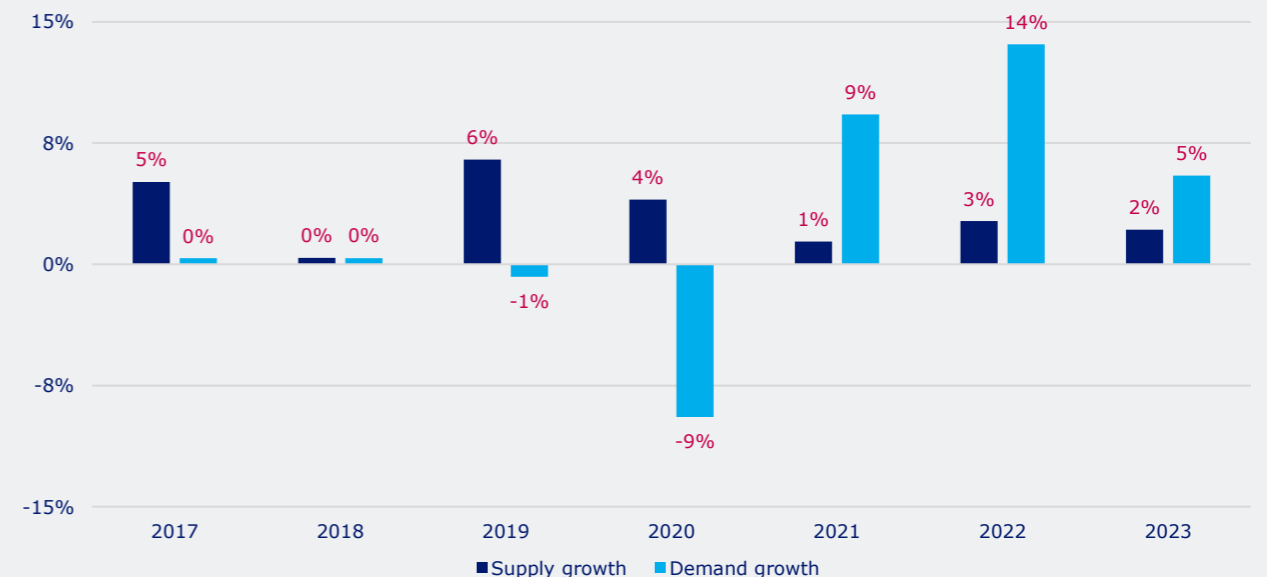
The upcoming EEXI and CII regulations will prompt many of the older vessels to slow steam in order to keep GHG emissions down. We may also see an uptick in the number of vessels going for retrofits to install emission-reducing equipment. The European Commission has proposed including shipping in the EU's ETS. The ETS will apply to 100% of emissions for voyages trading between two EU ports and 50% of emissions for voyages where either the loading or discharging port is in the EU. If the proposal comes into effect, we may see older vessels trading in Europe being switched to eco, scrubber-fitted or dual-fuel vessels. Currently, only around 0.2% of the fleet is capable of taking in alternative fuels, while these vessels (dual-fuel LNG-powered) account for around 22% of the orderbook. Another EU proposal is FuelEU Maritime, which would impose energy requirements on vessels, depending on their life-cycle GHG footprints from a "well-to-wake" perspective. In the event of this, LNG-fuelled vessels would be less attractive to contract.

DEMAND IS INCREASING BUT CARGO SUPPLY REMAINS TIGHT

Global supply constraints due to the ongoing war in Ukraine will likely boost tonne-mile

trade for larger vessels. This is also being driven by a rebound in long-haul jet fuel trade, as both business and tourist travel is slowly regaining momentum. However, cargo shortages remain a problem, even though refinery runs have increased significantly. The main reason for the shortages is that supply of crude feedstocks cannot keep up with the rapid rebound in demand. Maintenance and sudden disruptions in refinery terminals in Russia and Nigeria have also contributed to the problem. Diesel shortages are also being seen in Europe, as many countries have seen their inventories depleting rapidly. This could be an opportunity for Asian and North American countries to boost long-haul trade of diesel to Europe, despite of reduced demand.

SUPPLY AND DEMAND BALANCE (DWT AND TONNE-MILES)



Sources: Clarksons, Danish Ship Finance

PRODUCT TANKER FLEET OUTLOOK

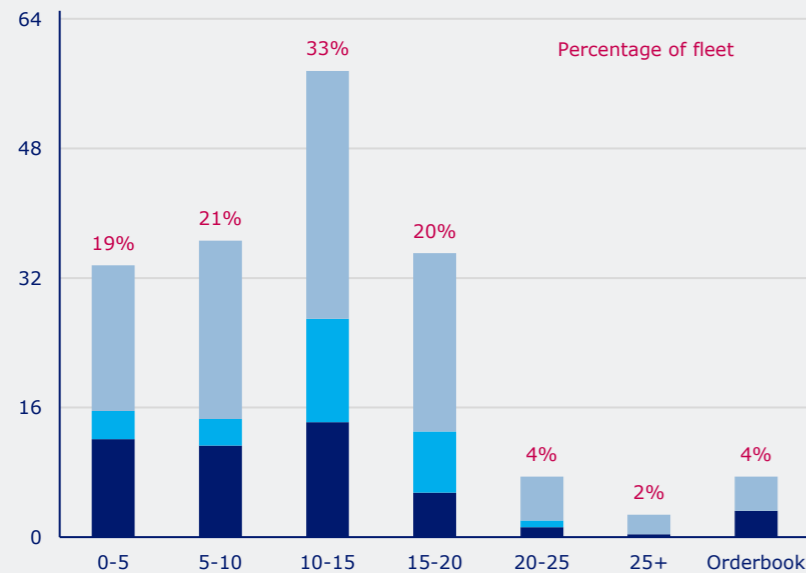
Already low fleet growth may be further offset by upcoming regulations and geopolitics

The orderbook is at a historical low as shipowners steer clear of the newbuilding market. Several other factors are expected to keep fleet growth low in the short term.

THE ORDERBOOK-TO-FLEET RATIO HAS TUMBLED TO 4%

As with other Oil Tanker segments, the appetite for contracting Product Tankers has been low. Although contracting activity more than doubled in the first half of 2021, it plummeted again in the second half to a level not seen since 2016. In the first three months of 2022, only three MR Tankers were ordered. Thus, the fleet is set for very low expansion in the short term: 2.7% in 2022, 2.1% in 2023 and 0.3% in 2024. Fleet growth will periodically be offset by around 1 percentage point from 2022 to 2024 as vessels are docked for scrubber retrofits and hull surveys.

AGE DISTRIBUTION (MILLION DWT)



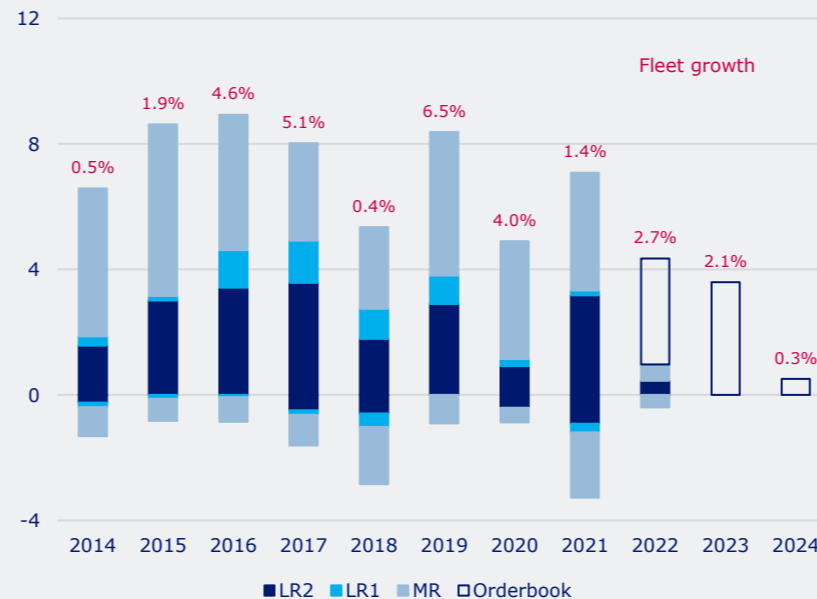
INCREASE IN AVERAGE LIFETIMES OF PRODUCT TANKERS

Around 1.5% of vessels in the fleet (primarily MR Tankers) are over 20 years old and are scheduled for hull surveys in either 2022 or 2023. These vessels could be potential scrapping candidates in the short term. However, the expected increase in demand combined with limited fleet expansion may cause average lifetimes of Product Tankers to increase again (their average demolition age was 22 years in 2021). Moreover, the share of total demand covered by vessels over 20 years old rose from 0.6% in 2017 to almost 3% in 2021.

SLOW STEAMING WILL FURTHER SHRINK THE ACTIVE FLEET

The upcoming EEXI and CII rules in 2023 will see a number of current vessels forced to lower speeds in order

FLEET DEVELOPMENT (MILLION DWT)

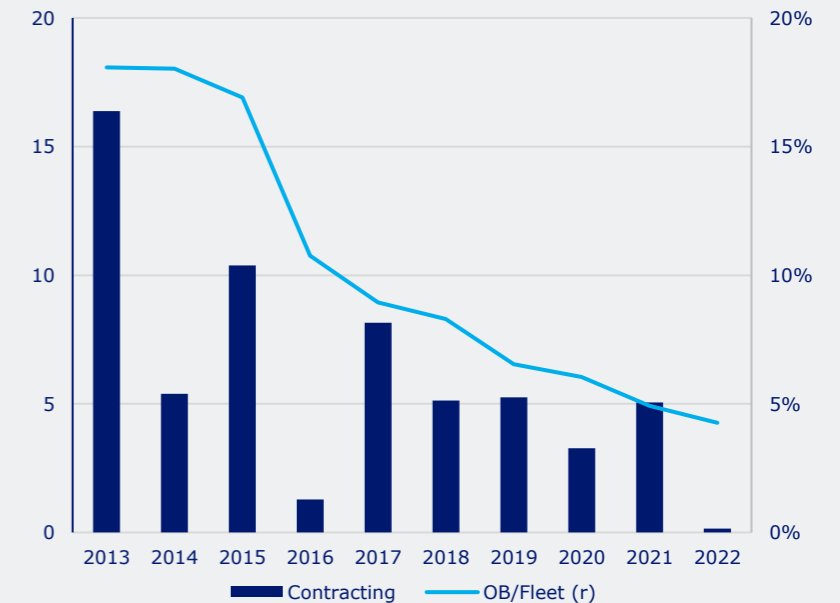


to reduce GHG emissions. In the first quarter of 2022, average voyage speeds of Product Tankers declined by 3.4% compared to 2019, with Tankers over 15 years old (around 26% of the fleet) having experienced the steepest fall (around 6%).

AROUND 2% OF THE FLEET IS AT RISK OF BEING SANCTIONED

As with Crude Tankers, around 2% of the Product Tanker fleet is Russian-owned, while 2% of the orderbook has also been contracted by Russian owners or is being built at Russian yards. Should European countries (which account for 50% of trades) impose sanctions on Russian vessels, then we could see the active fleet reduced by 1 percentage point, assuming trade routes are unchanged.

CONTRACTING (DWT) AND ORDERBOOK-TO-FLEET RATIO (%)



Sources: Clarksons, Danish Ship Finance

PRODUCT TANKER DEMAND OUTLOOK

Demand for Product Tankers will be boosted by long-haul trade, but many uncertainties persist

Demand for Product Tankers is set to grow in the short to medium term, but with skyrocketing energy prices, uncertainties persist. Cargo supply remains a problem.

UNCERTAINTY ABOUT GROWTH IN OIL DEMAND

Current IEA forecasts predict a 2.2% increase in global oil demand in 2022. Seaborne product demand is currently expected to increase by 13.6% in 2022 and 5.5% in 2023, driven by a rebound in long-haul trade from the Middle East and Asia to Europe. However, these projections are subject to great uncertainty, as energy shortages around the world have caused energy price inflation. Historically, any unprecedented increase in energy prices – including oil prices – has led to lower demand for Product Tankers, with

a lag. In 2021, energy prices in OECD countries increased by over 15%.

JET FUEL DEMAND SET TO REBOUND IN THE SHORT RUN

If inflationary pressures prove short-lived, international air travel is expected to fully recover back to pre-Covid levels in 2024. An uptick in business travel and tourism, particularly in North America and Europe, is expected to bolster demand for jet fuel. Jet fuel consumption is set to increase by 15.9% in 2022, reaching 76% of the 2019 level. This increase will partly be supplied by refineries from Northeast Asia, spurring demand for LR2 Tankers.

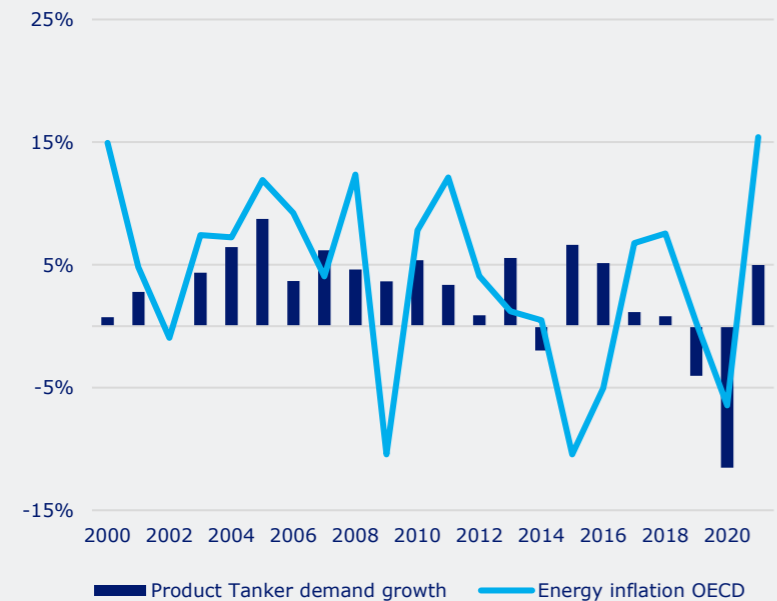
HIGHER REFINERY UTILISATION BUT STILL A CARGO SHORTAGE
Refinery utilisation rates have increased significantly from

2021 to 2022 in the wake of rising refinery margins. In OECD countries, utilisation rates went up from 77% in January 2021 to 84% in January 2022. Refinery runs are expected to remain high in the medium term, boosting demand for Product Tankers. However, limited cargo supply remains a problem, as oil demand continues to outpace supply.

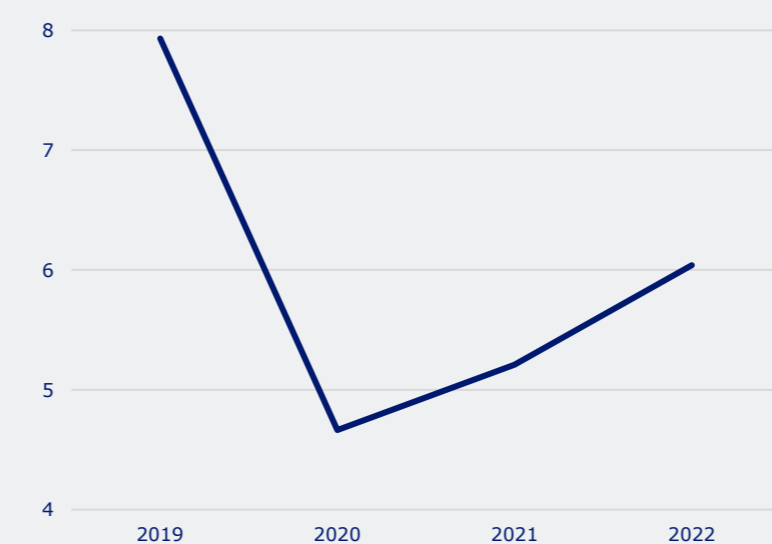
NORMALISED EARNINGS WILL SEE RETURN OF MANY VESSELS

In 2021, extensive cascading was seen, with more Crude Tankers transporting refined products and many Product Tankers moving into the chemicals market. As higher earnings are expected in both the Crude and Product Tanker markets, we will see a positive net effect on the active fleet of 2-3% in the short to medium term.

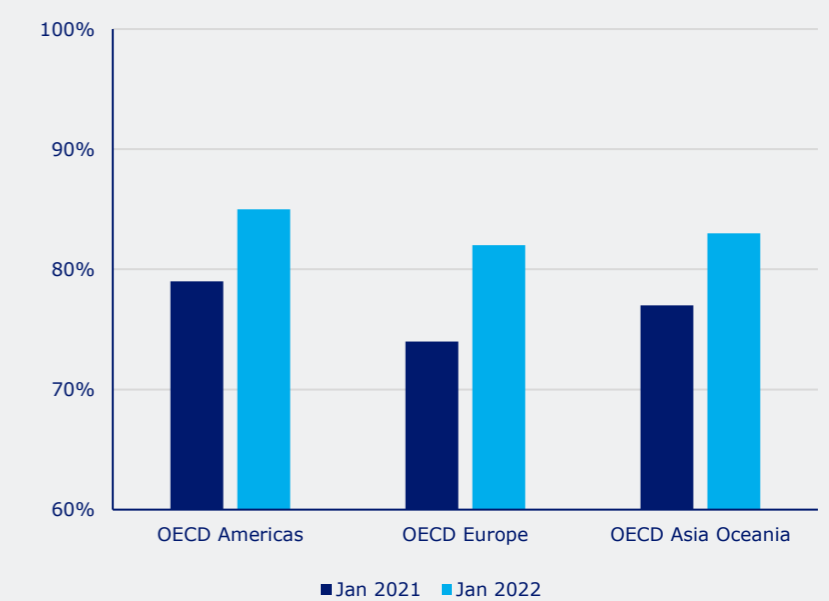
SEABORNE DEMAND AND OECD ENERGY INFLATION (%)



JET FUEL AND KEROSENE DEMAND (MBPD)



REFINERY UTILISATION RATES (%)



Source: Clarksons, IEA, EIA, OPEC, Alphatanker, Danish Ship Finance

DEMAND DEEP DIVE: IS EUROPE HEADING FOR A DIESEL SHORTAGE?

Cargo shortages have depleted diesel inventories around the world, while prices have skyrocketed

The diesel shortage in Europe poses a significant risk to the European economy, as diesel is one of the main components for the road and industrial sectors. European refineries are running at high capacity rates to produce more diesel, but European countries will most likely have to import more over longer distances.

AROUND 11% OF EUROPE'S DIESEL DEMAND IS IMPORTED FROM RUSSIA

Diesel is by far the most used oil product in Europe, accounting for about 35% of total oil products demand in the region. Diesel is not only used as fuel for cargo vehicles, it is also widely used in the industrial sector as well. The product yield for diesel at European refineries already stands well above 40%, but imports are still required to meet domestic demand. Russia has historically accounted for about 40% of Europe's total diesel/gasoil imports, while the Middle East, Africa, Asia and North America have made up the rest. Imports from Russia have primarily been transported by MR Tankers, while long-haul imports from Asia and the Middle East have been transported by LR2 Tankers.

EUROPEAN REFINERIES ARE UNABLE TO INCREASE OUTPUT IN THE SHORT TO MEDIUM TERM

On paper, European refineries have excess crude distillation capacity of some 15-20%. In reality, though, a large part of this capacity is not actually usable due to bottlenecks in secondary processing units and excess refining capacity having not been utilised for over a decade. On top of this, Bain & Company estimates that European refineries are the most challenged, as a majority of these refineries are not complex enough to adjust their product slates to produce more diesel. Consequently, increasing diesel output from European refineries would require investments in downstream activities or new refining capacity, which seems unlikely given the long-term plans for decarbonisation.

CRUDE FEEDSTOCKS ARE ALSO A CHALLENGE FOR EUROPEAN REFINERIES

As mentioned in the Crude Tanker chapter, Russia accounts for a quarter of European crude oil imports. Europe is therefore not only facing a supply crunch in terms of refined products, but is also looking at limited supply of crude feedstocks for European refineries. If Russian crude feedstocks are not replaced by other sources, we may see refineries cutting production of diesel, thereby further exacerbating the shortage.

INVENTORIES HAVE FALLEN BY 27% IN JUST ONE YEAR, PUSHING PRICES UP

Inventories of middle distillates (of which diesel is the largest component) in European

OECD countries fell by 27% from January 2021 to January 2022. A number of countries have less than 100 days' worth of inventories, assuming demand were solely sourced from these. This has pushed diesel prices up by 76%.

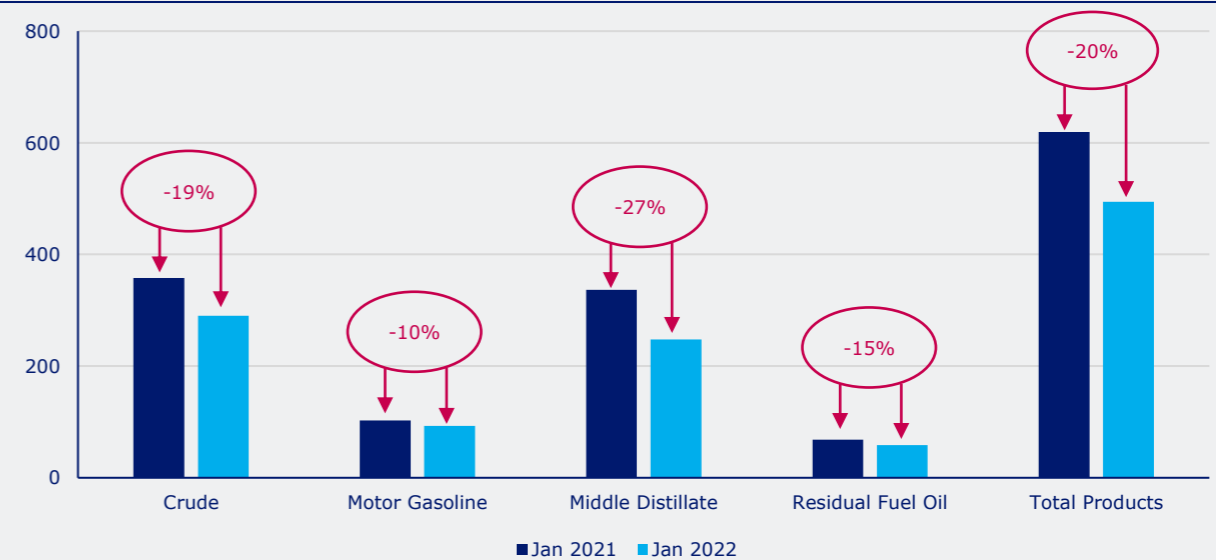
THE SUPPLY SHORTAGE MAY BENEFIT DEMAND FOR LONG-HAUL TRADE...

The shortage may prompt European countries to look for other sources of refined products. New refining capacity in Asia and the Middle East is expected to open in 2022-2025 (new capacity of 6.9 mbpd), which could see increased trade flows of diesel from these regions. This would boost demand mainly for LR2 Tankers but also for LR1 Tankers.

...BUT THIS WOULD REQUIRE EXCESS EXPORT CAPACITY OF DIESEL

Demand for diesel is expected to increase in Asia in the medium term, as both road transport and industrial sectors are projected to grow. In India, the number of road vehicles powered by diesel will likely surge, despite EVs taking an increasing share of the market. If this demand materialises and prices are competitive, we may see demand for Product Tankers grow, driven by intra-regional trade in Asia, leaving Europe behind.

CHANGE IN OECD EUROPE INVENTORIES BY PRODUCT (MILLION BARRELS)



Source: Clarksons, IEA, Alphatanker, Bain & Company, Danish Ship Finance

LPG CARRIER



LPG CARRIER

A large orderbook of VLGC and MGC vessels to meet Asian demand

The LPG market is scheduled for growth in the coming years. The large orderbook reflects expectations of expanding long-haul seaborne trade volumes between North America and China. Increased processing capacity in China is anticipated to stimulate growing cargo supply out of North America. If demand does not manage to grow in tandem with the capacity expansion, freight rates and secondhand prices are likely to come under pressure. The new vessels are predominantly dual-fuelled and may prove challenging for older, less efficient vessels. We expect surplus VLGC capacity to cascade to Middle East-Asia trade routes, on which MGCs are dominant. Scrapping is expected to increase, with older and less efficient vessels likely candidates for premature scrapping.

FREIGHT RATES AND SECONDHAND PRICES

Freight rates are high, but secondhand prices do not reflect strong expectations for future earnings. Price-to-earnings ratios are moving within the lowest 30% observed during the past two decades. Secondhand prices of older vessels are relatively low while newbuilding prices are high.

VLGC: Timecharter rates have remained steady at a relatively high level, while spot earnings have followed the usual volatile seasonal pattern. Secondhand prices are flat, whereas newbuilding prices continue to increase. S&P markets have been active during 2021 and 2022, with vessels aged between 10 and 15 years being the most transacted age group.

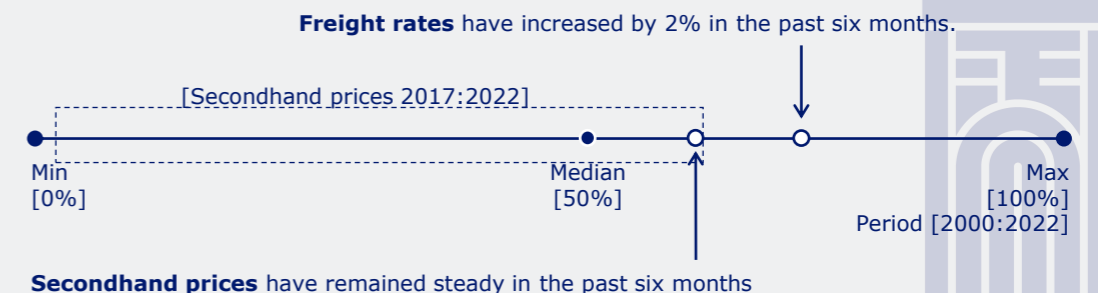
MGC: Timecharter rates have risen 10% during the last six months. Prices are largely stable. Older vessels are priced at low levels: the price of a 20-year-old MGC is only a few million dollars above the

scrap price.

SGC: Timecharter rates have gone up by 16% during the last six months. Scrap prices have come up 15%, while newbuilding prices have increased by 7%. Secondhand prices remain steady.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – May 2022



Growth in seaborne LPG volumes has been on a declining trend in the past seven years. In 2021, seaborne volumes increased by 6.5% while distance adjusted demand grew by 11.8%. The fleet expanded by 6.1%. Projections for 2022 and 2023 indicate an increased risk of surplus vessel capacity. Older and less efficient vessels are likely to be scrapped in 2022 and 2023.

Deliveries have been increasing since 2018 and are expected to peak in 2023 with 5.1 million cbm. A massive inflow of new vessels is adding new capacity to the fleet corresponding to 7% of the 2021 fleet in 2022 and 11% in 2023.

Scrapping remains low but increased from 69,000 cbm in 2020 to 114,000 cbm scrapped in 2021. Surplus vessel capacity is expected to increase scrapping in 2022 and 2023. 99,000 cbm was scrapped in the first quarter of 2022.

Contracting activity has reached an all-time high with 6.1 million cbm contracted in 2021, corresponding to

111 vessels. Contracting activity was low with 0.25 million cbm ordered in the first quarter of 2022.

Orderbook: 8.6 million cbm is currently on order, a 4.1% decline since the end of 2021. This represents 21.4% of the fleet.

Demand volumes are expected to grow by around 5% in 2022 and 3% in 2023. Distances have been growing in the past three years but are currently not expected to raise distance-adjusted demand beyond the volume growth.

MARKET DYNAMICS IN THE LAST SIX MONTHS

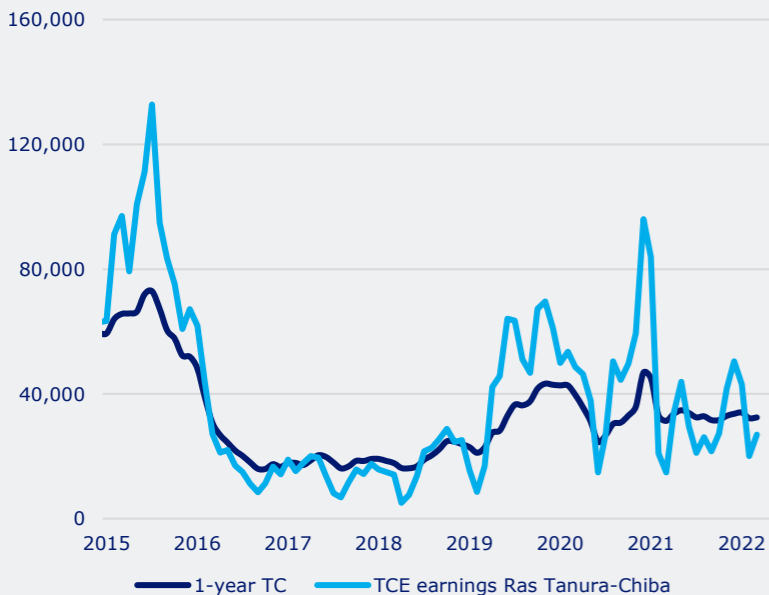
Gas prices have been surging in the wake of supply chain challenges

High contracting in 2021 has not continued this year, although the orderbook-to-fleet ratio remains high. The increased LPG demand from Asia is supporting growth in trade demand for larger vessels.

SPOT EARNINGS CONTINUE ON THEIR VOLATILE PATH

In the past six months, the one-year VLGC timecharter rate has been stable with low volatility. TCE earnings between the Middle East and Japan reached USD 54,340 per day in December 2021, only to decline by around 70% in March due to high bunker prices and lower domestic consumption after the winter months. Similarly, US inventories are following a seasonal pattern, reaching a five-year low in March.

ONE-YEAR TIMECHARTER AND SPOT RATES (USD PER DAY)



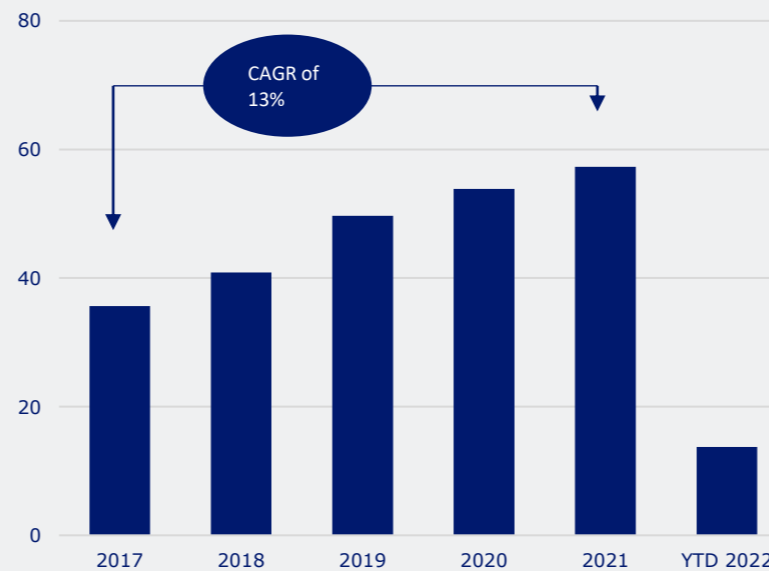
INCREASING TRADE FLOWS FOR LARGE CARRIERS

US LPG exports have increased by 3% in the first quarter of 2022 compared to 2021. High gas prices have resulted in more US export volumes being sourced from inventories, which reached a five-year low in the first quarter. In the same period, US export volumes to China and South Korea increased, while volumes to Japan declined significantly. European import volumes from the US increased by 54%. This highlights the growing demand for VLGCs trading long-haul.

PRICE ARBITRAGE AFFECTED BY SURGING GAS PRICES

The war in Ukraine has affected crude and gas prices significantly. Gas prices spiked at the beginning of March, although they have been on the rise since the beginning of

EXPORTS FROM THE US (MMT)



December 2021. Initially, the US propane price arbitrage to Asia widened following a strong increase in the Middle East propane price and supported US exports. The US arbitrage has since drifted to pre-war levels. In addition, propane has been trading at a discount to naphtha since the beginning of 2022, making it the preferred feedstock for mixed-feed crackers and supporting long-haul trade demand.

CONTRACTING HAS NOT CONTINUED IN 2022

The high contracting activity in 2021 has not carried over into 2022. A large part of the contracting activity concerns VLGC and MGC vessels powered by dual-fuel engines. This has resulted in higher VLGC newbuilding prices, with an increase of 6% from the last six months of 2021.

US PROPANE PRICE FOB (USD PER TONNE)



Source: EIA, AXS Marine, Clarksons, Drewry, Danish Ship Finance

LPG OUTLOOK SUMMARY

The market is facing a risk of overcapacity of larger vessels in the short term

Global demand for LPG is expected to grow by 5% in 2022 and 3% in 2023. The fleet seems likely to expand ahead of demand with gross fleet growth of 7% in 2022 and 11% in 2023. Scrapping is likely to increase and few new orders are expected. The large orderbook (22% of the fleet) of dual-fuel VLGCs and MGCs will put pressure on old and less efficient vessels. Some VLGCs may cascade to MGC trades, while older MGCs are increasingly likely to be scrapped.

A large inflow of dual-fuel VLGC and MGC vessels to the fleet is expected to spark increased scrapping, as older vessels will see their competitiveness shrink in a market characterised by surplus vessel capacity and cascading.

SHORT-TERM RISK OF SURPLUS VLGC CAPACITY

Asian LPG demand is set to continue to grow as the Chinese petrochemical sector expands. New PDH plants are planned to start in 2022 and 2023, adding a potentially large amount of new capacity. This may stimulate long-haul trade volumes carried by VLGCs on the US-Asia trade routes and by MGCs on the Middle East-Asia trade routes. Still, the large orderbook for VLGCs increases the risk of surplus vessel capacity, since we expect US cargo supply to fall short of expected capacity expansion in the Chinese petrochemical sector without significant investments in new US shale gas production.

VLGCs ARE LIKELY TO CASCADE AND CANNIBALISE ON MGC TRADES

In the event of surplus VLGC capacity, older VLGCs may cascade from the US-Asia trade routes to the Middle East, where they are likely to cannibalise on MGC trades bound for Asia. The new, efficient MGCs entering the fleet are therefore not only expected to compete against older MGCs but also the cascading candidates of VLGCs. This is expected to increase scrapping and reduce the economic lifetimes of older MGCs.

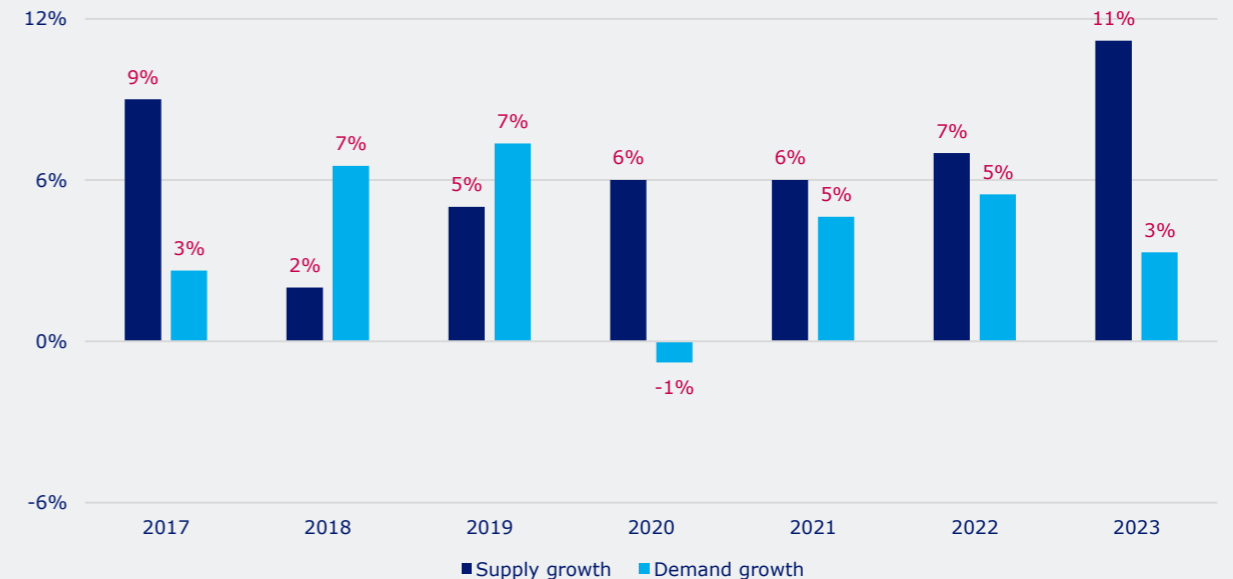
INADEQUATE PORT INFRASTRUCTURE SUPPORTS MGCs IN THE SHORT TERM

A large part of the MGC fleet is trading on long-term contracts, which may provide the existing fleet with some degree of protection against short-term surplus capacity. Besides, several ports – including some in India – require additional investments in port infrastructure before VLGCs can discharge their cargoes. These factors may curtail the effects of surplus VLGCs capacity on older MGCs.

HIGHER ASIAN ETHYLENE PRODUCTION IS HAMPERING TRADE GROWTH FOR ETHYLENE CARRIERS

The expanding PDH plant capacity in Asia is increasing regional production of ethylene and thereby reducing demand for carriers transporting US ethylene long-haul. The major fleet expansion is now over, and the orderbook-to-fleet ratio for these vessels is currently only 5%, but declining long-haul trade volumes may lead to surplus vessel capacity and lower freight rates in the years to come.

SUPPLY AND DEMAND BALANCE (CBM AND TONNES)



Source: Clarksons, Drewry, Danish Ship Finance

LPG FLEET OUTLOOK

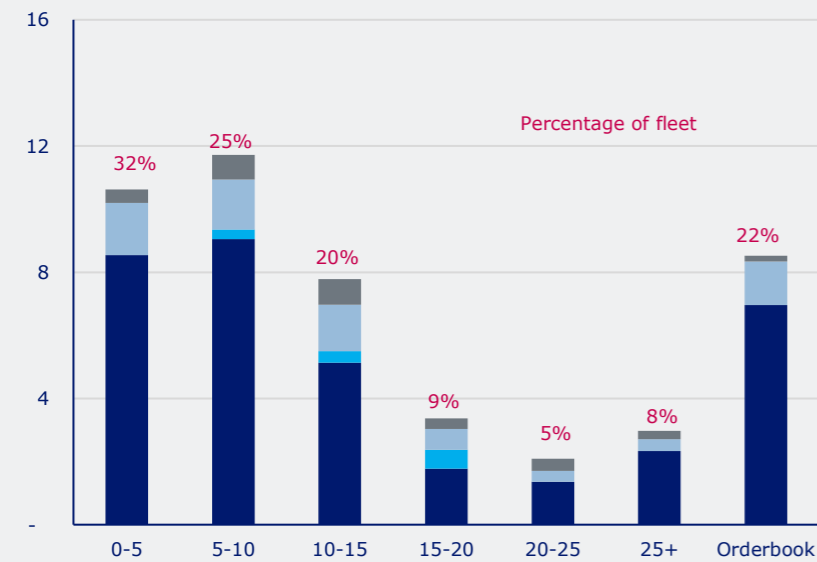
The fleet is set to expand by 7% in 2022 and 11% in 2023

The high LPG fleet growth is set to peak in 2023, with mainly VLGC and MGC vessels powered by dual-fuel engines being added. Increased scrapping is likely from 2023 onwards.

A RISK OF OVERCAPACITY IN THE SHORT TERM

In the past six months, the orderbook-to-fleet ratio has decreased to 22% from last year's high of 24%. The fleet is set to expand to the tune of 7% in 2022 and 11% in 2023 before scrapping. Half of the orderbook consists of VLGC vessels, all fitted with dual-fuel engines able to operate on either ethane or LPG in combination with conventional fuel. When the current orderbook has been delivered, 27% of the VLGC fleet will be dual-fuel vessels, all under ten years old.

AGE DISTRIBUTION OF FLEET (MILLION CBM)



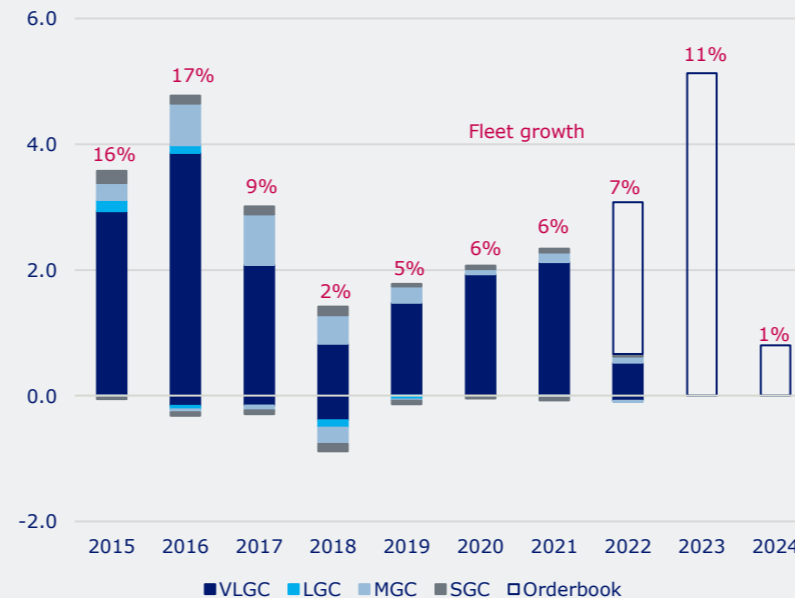
HIGH FREIGHT RATE VOLATILITY

75% of the orderbook (by number) is VLGC and MGC vessels to be delivered by 2025. The average vessel size of a VLGC on order is 9% larger than a VLGC delivered in 2018. More cargo is therefore needed to utilise the incoming capacity. The large inflow of VLGC vessels in both 2022 and 2023 is likely to increase short-term freight rate volatility in periods of cargo supply shortages materialising in a market dominated by spot trading.

HIGHER SCRAPPING AND SHORTER ECONOMIC LIFETIMES

Besides the increased risk of high freight rate volatility, owners are also likely to face the challenge of lower secondhand prices for older vessels, since surplus vessel

FLEET DEVELOPMENT (MILLION CBM)

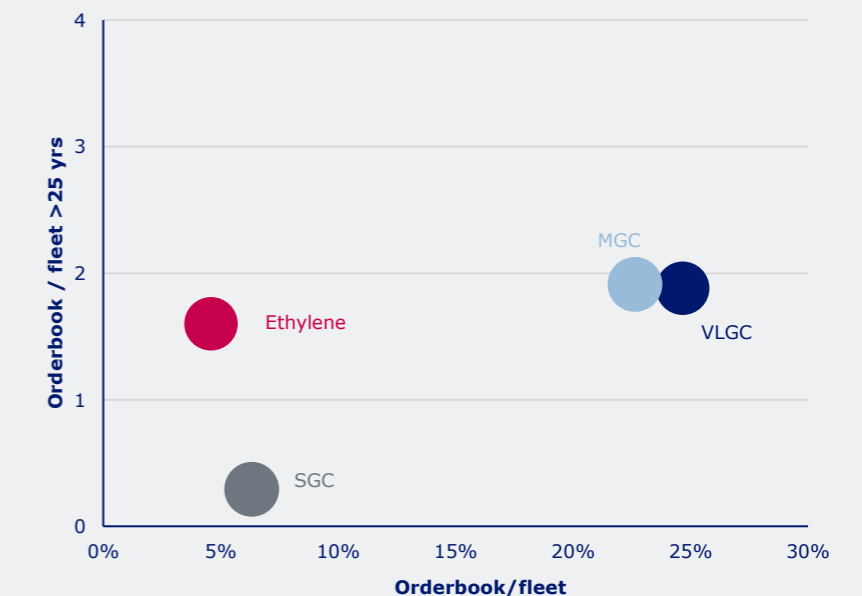


capacity is expected to translate into higher scrapping and thereby a shortening of older vessels' economic lifetimes. This is particularly a challenge for VLGCs and MGCs, whose fleets have few older vessels left.

CONTRACTING SEEMS TO HAVE CALMED DOWN

The high contracting levels seen in 2021 are unlikely to continue in 2022 and 2023, as surplus fleet capacity is expected to lower secondhand prices for older vessels, while newbuilding prices are currently high and yard availability is low at top-tier yards.

FLEET RENEWAL POTENTIAL (CBM)



Source: Clarksons, Danish Ship Finance

FLEET OUTLOOK DEEP DIVE – A POTENTIAL VLGC CASCADING EFFECT

Surplus vessel capacity may lead to cascading of VLGCs to MGC trades and increased scrapping

Overcapacity of VLGC and MGC vessels in the coming years could potentially lead to a cascading of VLGCs on main routes if cargo supply fails to meet demand.

OLDER VLGCs ARE TRADING FROM MIDDLE EAST TO ASIA

The looming overcapacity of VLGCs is beginning to show. VLGC trade routes from the US to Asia continue to receive the largest share of new vessels delivered, but a growing share of vessels are employed on Middle East-Asia trade routes. The average age of VLGCs on the US-Asia trade is seven years, compared to 13 years on Middle East-Asia trade routes.

GROWING PRESSURE ON OLDER VESSELS

Owners of older and less efficient vessels (delivered before 2013) are most impacted by the impending environmental regulation (EEXI and CII). Many of these vessels will need to be upgraded or alternatively scrapped. For the VLGCs, we anticipate a declining age profile on Middle East-Asia trade routes when the orderbook is delivered and surplus capacity starts building. Many of the older vessels will need to be scrapped.

ANNUAL SCRAPPING: 3-5% OF THE FLEET

We estimate that up to 15% of the VLGC fleet could become scrapping candidates in the years between 2023 and 2025.

INCREASING NUMBER OF DUAL-FUEL VLGCs

In 2021, around 8% of VLGC voyages on US-Asia routes were equipped with dual-fuel engines, while the corresponding share on Middle East-Asia routes

was 1%. We expect to see the pressure on older vessels building up when the orderbook of dual-fuelled vessels is delivered. The majority of vessels will be trading on US-Asia and Middle East-Asia trade routes. We estimate that around 13% of VLGCs sailing primarily on US-Asia trade routes in 2018 were transferred to mainly working Middle East-Asia trade routes in 2021.

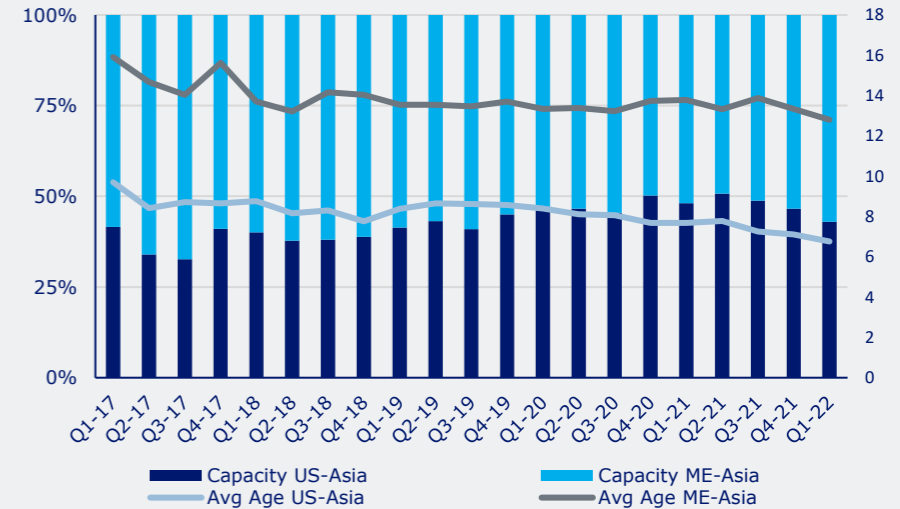
POTENTIAL EFFECT FROM CASCADING

Cascading of VLGCs from US-Asia trade routes to Middle East-Asia trade routes is expected to become more prevalent. This transfer of capacity is expected to increase competition for MGC vessels. Older MGCs on Middle East-Asia trade routes might find it hard to compete with older VLGCs, assuming efficient capacity utilisation.

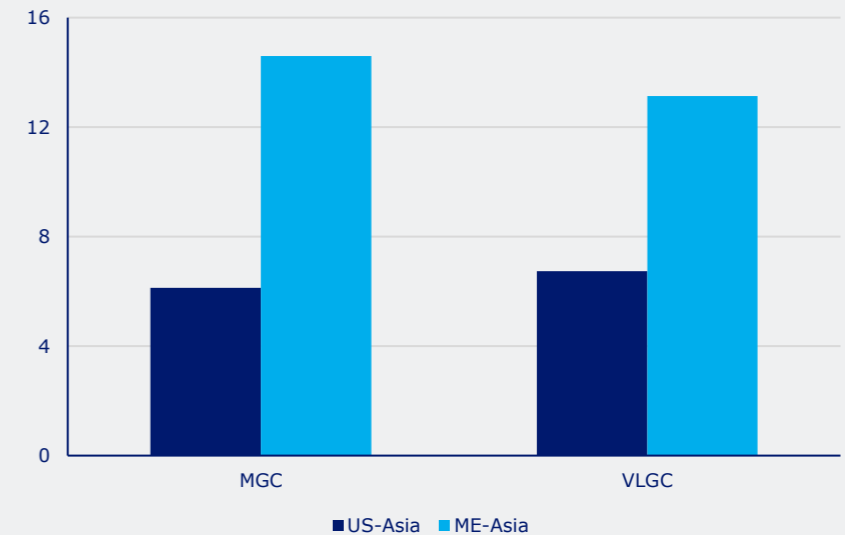
INCREASED MGC SCRAPPING DUE TO CASCADING

Should this be the case, expected export quantities may not be sufficient for older MGCs and they will have to look for employment elsewhere. The MGCs will retain a competitive advantage on certain major Middle East-India trade routes until planned port infrastructure investments are made. However, long-term contracts for MGC vessels may postpone the impact of cascading.

VLGC CAPACITY (CBM) AND AVERAGE AGE ON MAIN ROUTES



AVERAGE AGE DIFFERENCE ON MAIN ROUTES



Source: Clarksons, Drewry, Danish Ship Finance

LPG DEMAND OUTLOOK

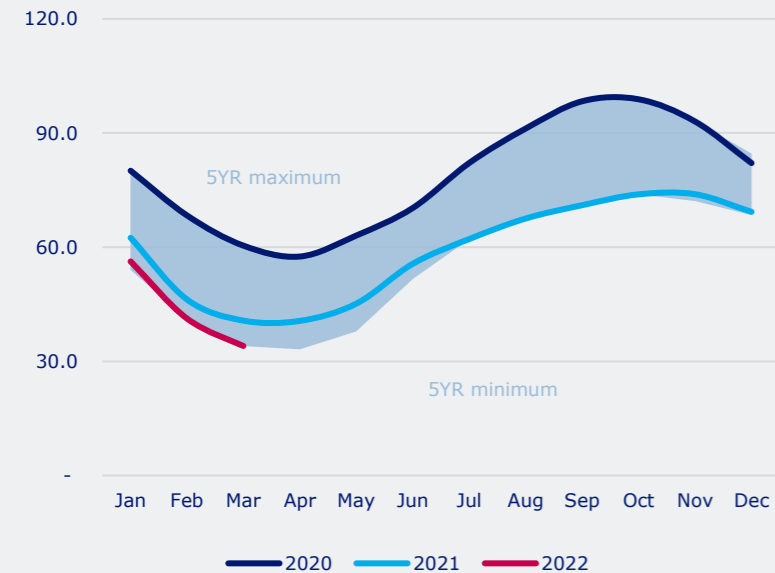
LPG volumes to grow by around 5% and 3% in 2022 and 2023

We expect LPG volumes to grow by around 5% and 3% in 2022 and 2023, respectively. This corresponds to 89 additional VLGC voyages in 2022 and 59 in 2023. Volume growth is being driven by increased Chinese demand sourced primarily from US exports. However, very low US inventory levels could dampen export growth.

SUPPORTIVE OUTLOOK FOR LONG-HAUL DEMAND

Chinese imports increased by 25% from 2018 to 2021 and are expected to grow at a CAGR of around 10% up to 2025. We anticipate a further increase in global demand for VLGCs, with demand from Asia and Europe projected to grow. However, delays in Asian PDH construction and potential US cargo supply shortages represent significant risks to the VLGC outlook.

US LPG INVENTORY LEVELS (MILLION BARRELS)



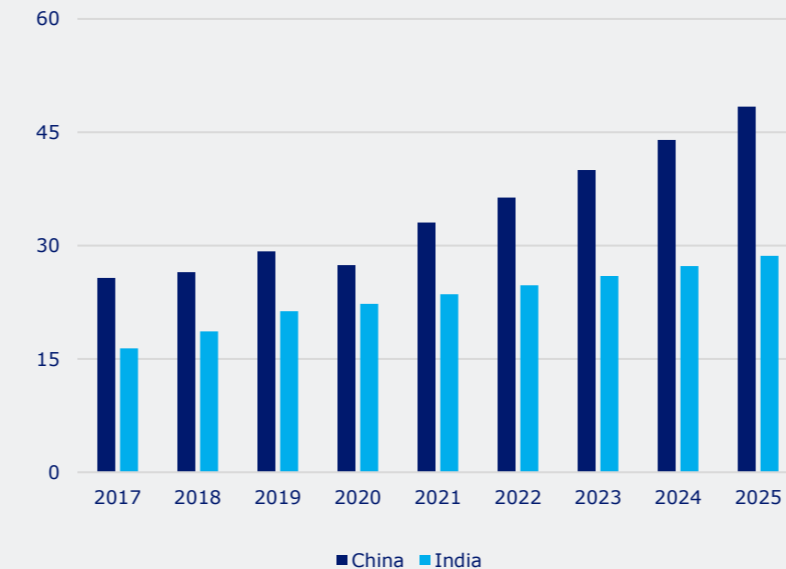
LOW GROWTH AND INCREASED RISK OF CASCADING

MGCs on Middle East-Asia routes will face increased competition from VLGCs previously trading on US-Asia trade routes. MGC trade flows on main routes from the Middle East to Asia are set for low growth in the coming years due to the high penetration rate in India and low to steady production growth in the Middle East.

WEAK LONG-TERM OUTLOOK FOR ETHYLENE CARRIERS

The increasing PDH plant capacity in Asia is boosting regional production of ethylene and thereby reducing long-term demand for carriers transporting US ethylene long-haul. Declining long-haul trade volumes may result in surplus vessel capacity and lower freight rates in the years to come. Still, a short-term window of opportunity is open

LPG DEMAND FORECAST FOR CHINA AND INDIA (MMT)

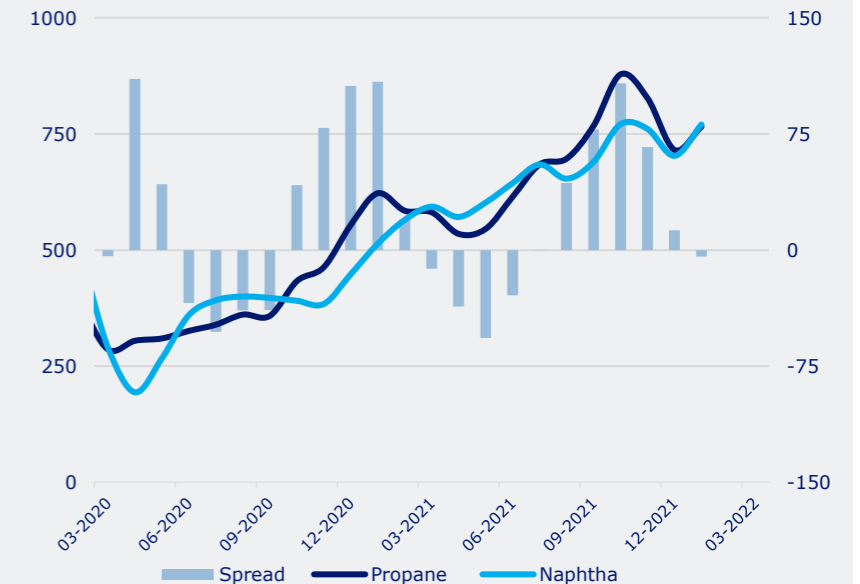


owing to higher long-haul trade demand, mainly sourced from the US.

SHORT-TERM EFFECTS OF PROPANE-NAPHTHA SPREAD

US export volumes of propane are expected to increase as a result of the expansion of processing capacity in China's petrochemical sector. Propane is competing with naphtha as the preferred feedstock for mixed-feed steam crackers. In the short term, propane is expected to trade at a discount to naphtha and support growth in VLGC trade volumes.

PROPANE-NAPHTHA SPREAD - JAPAN (USD PER TONNE)



Source: AXS Marine, Clarksons, Drewry, EIA, Danish Ship Finance



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