

SHIPPING MARKET REVIEW – MAY 2021



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HEAD OF INNOVATION & RESEARCH

Christopher Rex, rex@skibskredit.dk

ANALYTICAL TEAM

Jonas Hoffmann, Senior Analyst

Sebastian Müllertz, Analyst

Pardeep Singh, Analyst

Stasia Winther, Junior Analyst



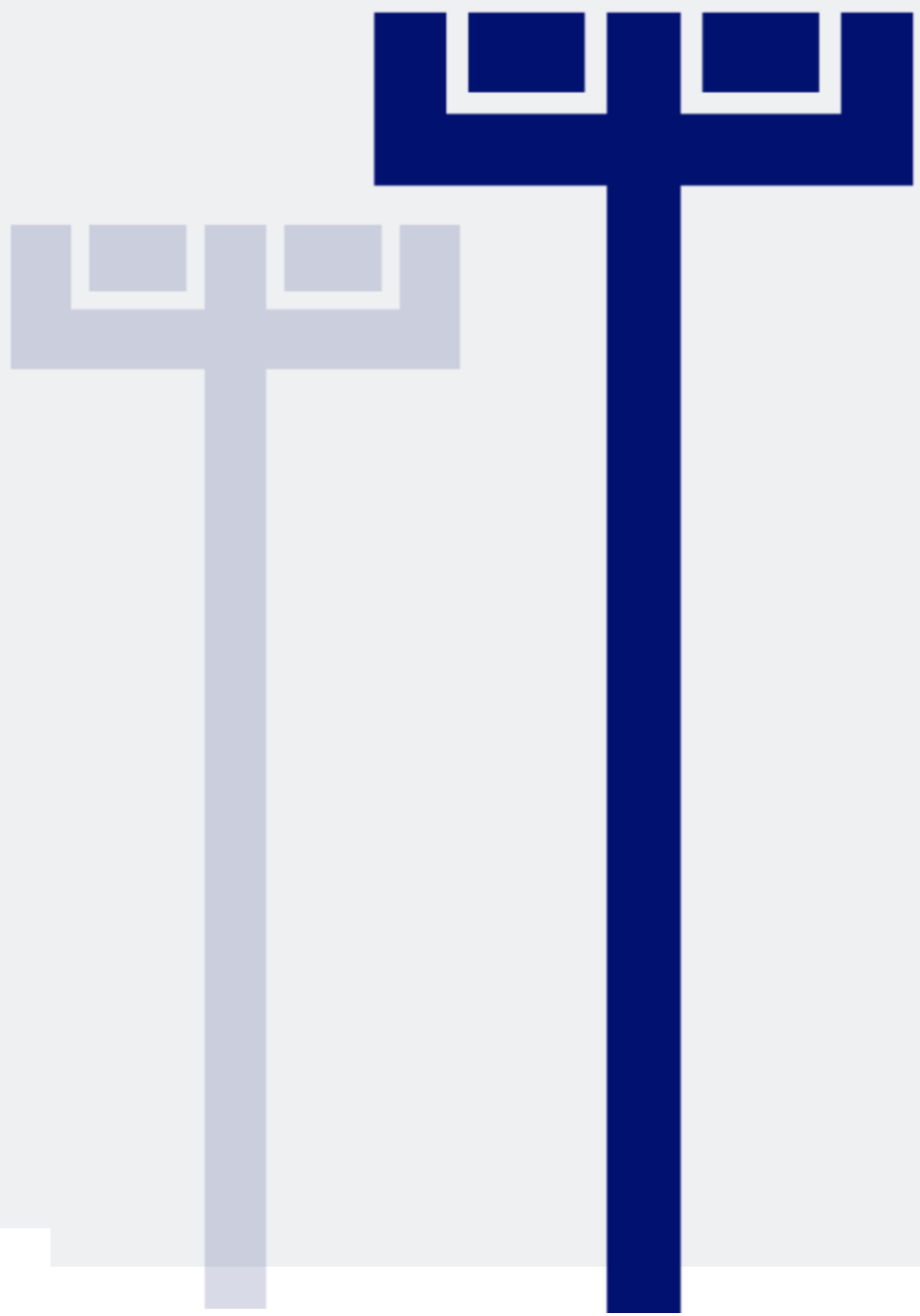


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FAST FORWARD

Commercial levers for decarbonising the shipping industry



VESSELS COULD BECOME A CATALYST FOR CHANGE

The commercial levers facilitating decarbonisation could outpace global regulation

A transition to carbon neutrality in the shipping industry is possible. The industry is making progress with existing assets and known technologies but will at some point need to introduce zero-carbon fuels.

Hybrid-electric and hydrogen-powered vessels could contribute greatly to the short-sea shipping industry reaching the next stage of efficiency.

For deep-sea shipping, the bulk of emissions need to be eliminated by switching to a zero-carbon fuel.

Existing players are burdened by legacy assets that are hard to upgrade to a degree where additional value potential can be developed.

Many will simply upgrade existing vessels to extend their lifetimes while hoping to enjoy another period of higher freight rates and secondhand prices.

The risk of stranded assets will become more apparent when new vessels burning zero-carbon fuels are delivered.

Few owners currently seem to have

large-scale fleet renewal programmes in place. Most seem to be waiting to see how the regulatory framework plays out, as well as the selection of the zero-carbon fuel of the future.

THE COMPETITIVE LANDSCAPE

The next generation of zero-carbon vessels could be owned by entities that benefit not only from lower costs, but also from additional streams of revenue.

We invite you to imagine a scenario where vessels could be supplied to the market as-a-service.

Over time, this could result in radical changes to revenues and margins for ship-owning companies. The entire competitive landscape could be up for review if vessels-as-a-service become the new norm in the shipping industry.

We see multiple pathways towards vessels-as-a-service, but they all require consolidation and scale to unlock the value potential of transport-as-a-service (i.e. the data potential from supply chain integration).

The benefits of vessel sharing could

allow new services to grow which, at some point, may disintermediate the traditional operator that delivers transportation from A to B.

Existing owners and operators are working to transform themselves. Few elements of the current industry structures are likely to remain untouched by the waves created by the call to decarbonise.

COMMERCIAL FORCES AT PLAY

There is much discussion in the shipping industry about the need for additional global regulation, (government) subsidies and carbon taxes in one form or another. The goal is to level the playing field to enable the green transition to take off.

In this report, we focus on the commercial forces of change that could drive some aspects of the industry's decarbonisation efforts.

We invite our readers to imagine some quite fundamental changes to asset ownership and the competitive landscape.

*Vessels-as-a-service
brings more value per
moved unit than
traditional shipping*

WILL MANY PLAYERS NEED TO TRANSFORM THEMSELVES?

Resetting the destination or navigating a new route?

The fuel transition could become an unprecedented business opportunity to create value significantly beyond freight rates and the asset play

Many shipowners currently seem to be postponing major investment decisions until a clearer pathway to the future becomes visible. Existing vessels are being retrofitted to lower their emissions and make them compliant with the upcoming new environmental regulation.

The short-term market outlook signals that many vessel segments could enjoy another cycle of higher freight rates and increasing secondhand prices in the years to come.

DECARBONISATION STRATEGIES

The call to decarbonise the industry could be a game changer. For some players, switching fuels may simply be an operational challenge that needs to be solved alongside the issue of paying the green premium.

For others, the fuel transition could become an unprecedented business opportunity to create value significantly beyond freight rates and the asset play.

The shipping industry is approaching a tipping point. Asset owning is becoming more complex. Small and

medium-sized owners are increasingly struggling to upgrade their digital capabilities to continue bringing down costs and leverage data to boost value generation.

Market leaders are actively seeking additional revenue sources and ways to improve operational efficiency in order to lower costs. Many traditional owners seem to be 'going asset light'; few are exploring ways to maximise asset monetisation.

There is a clear trend of increased digital adaptation. So far, this has mostly been targeted at reducing costs, while other industries have managed to create new digital business models that deliver additional value.

NAVIGATING LEGACY ASSETS

The number of straightforward levers that can be applied to existing vessels is limited. Only around 20-30% of emissions can be reduced through cost-efficiency levers such as improved vessel design, more efficient operations and better routing.

The fleet's emissions can be reduced

further via lower speeds or by blending conventional fossil fuels with, for example, biofuels. These measures are hardly long-term solutions, though.

Fleets do not have much potential for additional value creation. Vessels are, in general, non-standardised and offer little scope for economies of scale or valuable pools of data that can be monetised, even by the largest and most consolidated entities. The risk of stranded assets will increase in the coming years.

We see strong value potential for vessel owners that harvests not only significant cost savings but also manages to introduce additional streams of revenue.

Vessel ownership models seem to be approaching a fork in the road: one path leads to reinvention and potential long-term value generation, while the other means high volatility and cyclicity continuing.

EMBRACING A NEW-GENERATION OPERATING MODEL

Radical simplification and new capabilities

Digitalisation has never been the end game but rather a means for developing new value drivers and new business models.

The shipping industry has yet to identify and commercialise new value drivers and new business models.

Experience from other industries suggests that additional value can be created if we reinvent the business models and allow more value to be created by opening the gates to a broader ecosystem play that includes not only OEMs, shipyards and fuel producers but also the connecting industries and sectors across the global supply chain.

In a digital future, competition will no longer depend solely on products or process excellence but rather on business models.

The idea behind a digital business model for vessel ownership is not only to lower costs significantly, but also to introduce additional streams of revenue that can create value beyond the boundaries of the freight

markets.

The spark of decarbonisation could initiate major changes in the shipping industry's competitive landscape.

Zero-carbon fuels present a classic chicken-and-egg problem across industries. Decarbonisation is a global challenge facing all industries and sectors of the economy, not just maritime players.

Solving these issues represents an extraordinary business opportunity to be tackled within the next decade.

But the shipping industry typically generates low profits relative to the emissions it creates. Small and medium-sized ship owners may be finding little room for manoeuvre.

NEW INVESTORS

The shipping industry may not be a major attraction for investors looking for a play on decarbonisation but could become so if the industry can transform itself into a catalyst for change in the industries being served.

Imagine that some shipowners and new investors see great value potential in a framework where the zero-carbon challenge is melded with a new digital business model for vessel ownership.

Additional value can be created by players that superscale and package levers such as standardisation, economies of scale, digitalisation and circularity into a redesigned 'as-a-service' business model for vessel ownership.

Large-scale asset and data standardisation will allow costs to be reduced and the data extraction from the operation of the vessels to be monetised.

The initial market effect may be marginal but over a decade or more could evolve into a true gamechanger. Traditional owners could find it increasingly difficult to compete.

In a digital future, competition will no longer depend solely on products or process excellence but rather on business models

HOW DO WE CREATE ADDITIONAL VALUE FROM DECARBONISATION?

We need growth potentials that can be scaled and monetised

Consider a scenario where some parts of the shipping industry are carved out by players that earn their money outside the freight markets

The task of creating value from the zero-carbon challenge in a framework of a new digital business model for vessel ownership is virgin territory.

We do not have all the answers or a clear picture of the future, but we invite our readers to consider alternatives to the status quo.

Imagine that the expected price reduction from super-scaling the production of a zero-carbon fuel could be turned into a value pool that directly relates to the vessel investment.

The development within solar and wind energy has shown that production costs can be significantly reduced when production is sufficiently scaled. Some studies suggest that production costs can decline by as much as 60%, 70% or even 80% over a ten-year period.

By bundling the investment in new vessels with the profit potential in offering green transportation below market price (i.e. leveraging the expected reduction in production costs of a zero-carbon fuel), additional value can be created.

NEW VALUE DRIVERS

In the shipping industry, this could become possible for first movers that can guarantee a large-scale offtake of the fuel that allows producers to scale production beyond current market maturity. The case becomes even stronger if resources are pooled across industries and sectors (i.e. sector integration).

First movers may secure long-term purchase agreements (ten or 15 years) with producers that allow them to buy the fuel at a significant discount to the market price.

NEW BUSINESS MODELS

Imagine the creation of a large and super-standardised fleet of vessels supplied to the market as a service (including fuel).

Recall the concept of urban mobility services, which charge a fixed, all-inclusive price per minute in traffic (i.e. car ownership, fuel, parking, maintenance, etc.). If the mobility provider is able to buy the energy at a lower cost than it charges the user, then value is also created from the price arbitrage of the fuel.

The vessel-as-a-service delivers value to shareholders not only through freight rates but just as importantly through the price difference on the price of a zero-carbon fuel.

First movers may attain a competitive edge by offering zero-carbon vessel-as-a-service to customers while also profiting from trading surplus zero-carbon fuel volumes to players that have inadequate or no direct access to the fuel.

This strategy is clearly not risk free. Much can go wrong. But the potential reward could be massive.

CIRCULARITY COULD BRING DOWN THE GREEN PREMIUM

It will take more than a zero-carbon fuel to decarbonise the shipping industry

Consolidated fleets of super-standardised vessels offer an attractive business case for circular maintenance, as spare parts can be remanufactured, reused and recycled multiple times to save costs (and reduce the environmental footprint).

This becomes particularly interesting in a servitisation model, where equipment manufacturers extend their business to include the use of their equipment instead of selling it.

In this case, the data extraction from operating the standardised fleet of vessels becomes valuable, since it allows the equipment manufacturer to improve performance and optimise the vessel.

CIRCULAR VALUE CREATION

Circular maintenance is not new. Many companies have experimented with refurbishing, reusing and recycling their used products and parts.

Industry players like Renault and Caterpillar have worked with these principles for the past 30 years.

Savings are partly passed on to customers to ensure that they turn in

their used parts to the manufacturer. In a model where standardised fleets of vessels supply vessels-as-a-service at a fixed all-inclusive price per 'minute in traffic', circular maintenance adds value by lowering costs.

In the future, all elements of a vessel, its maintenance and its demolition could be designed for circularity. All materials and components could be recycled, remanufactured and reused.

Increased customer loyalty could be obtained through the channel of cost-competitive carbon-neutral operations (cradle-to-cradle).

REINVENTING THE BUSINESS MODEL

This kind of change will require not only shipowners but also equipment manufacturers to change their go-to-market model to one that sells 'time in traffic' rather than a product.

Many vessels are currently operated under a business model where the asset play guides decision making. Retrofits and operational upgrades are done if they deliver immediate cost savings without the need for

long-payback investments.

The asset game does not form part of a servitisation model that aims to improve the long-term efficiency of the assets rather than take advantage of short-term market imbalances.

The servitisation model allows investments with long repayment periods to be made – maybe even stretching to the next lifetime.

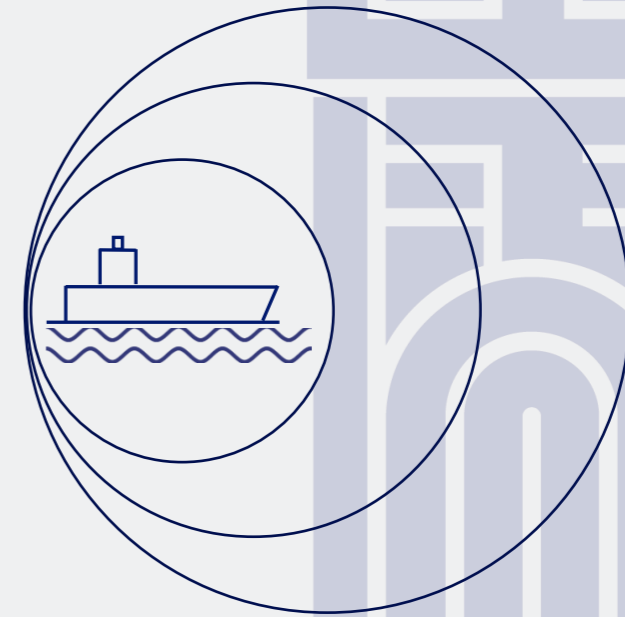
REDUCED RISK OF STRANDED ASSETS

The risk of stranded assets is reduced in a servitisation model, since equipment manufacturers are able to upgrade the performance of a vessel as long as they do not increase the cost of its use.

Savings are partly passed on to customers to ensure that they turn in their used parts to the manufacturer

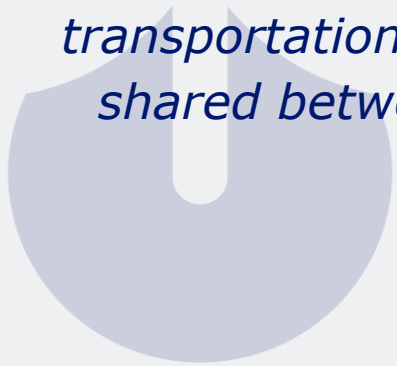
Three levels of circularity

1. Maintenance (e.g. spare parts)
2. Vessel ownership (cradle-to-cradle)
3. Cargo volumes (customer loyalty)



WHAT COULD CHANGES LOOK LIKE?

Shared vessel capacity



*Individual operators
booking cargo
transportation on vessels
shared between many*

To maximise the benefits of a servitisation model, vessel ownership could be aggregated across fewer entities, even across ship segments.

Vessel operation could remain fragmented but may over time consolidate in line with the application of new technologies that are likely to reduce margins and increase competition.

Circularity relates not only to the vessels but can also be expanded to encompass the industries being served by the vessels.

To illustrate the potential, consider a case where an ecosystem player works to connect the global construction sector with the Dry Bulk industry to facilitate not only the transportation of virgin materials but also circular material flows.

This type of ecosystem play could become a catalyst for change not only in the shipping industry but also in the industries being served.

A PREMIUM PRODUCT AT SCALE

The vessel-as-a-service concept allows a premium product to be supplied to shipping markets as a

low-priced utility.

Players can create additional value even when competing with the lowest-priced alternative, because the new supply and the traditional vessel supply do not have the same value drivers.

Traditional players generate income through freight rates, while players operating with the new business model can generate revenue from freight rates, trading of zero-carbon fuels and the data exhaust from vessel operation.

Traditional players may struggle to compete on costs, since the new players can reduce costs via circular maintenance and economies of scale while offering additional services through the advanced vessel connectivity system that has been scaled across the centralised ownership base.

The borders of industries, the role of assets and the types of competitors are likely to change.

GREATER ADDRESSABLE MARKET

We describe here the potential introduction of some quite

fundamental changes to not only the business model of vessel ownership but also the competitive landscape.

So far, we have discussed a centralised ownership model whereby individual operators manage and employ individual fleets of vessels. But could we take it even further?

Could there be a scenario where individual operators simply book cargo transportation on vessels shared between many to optimise capacity utilisation and reduce their environmental footprint?

Experience from other industries (the telecommunications industry, for example) suggests that structural separation can allow more value to be created if infrastructure sharing allows massive scaling on a larger customer base.

INFRASTRUCTURE SHARING

Transport-as-a-service: growing beyond the core

Infrastructure sharing is nothing new in the shipping industry. Many segments utilise the benefits of operational pools, while the Container industry also shares capacity through alliances. Freight forwarders and trading houses provide services that benefit from economies of scale by bringing together the demands of multiple customers.

The main difference between past experience and the vision described here is asset owners' ability to scale and harvest economies of scale (through standardisation) and to establish a critical asset base that allows major investments in new digital technologies.

TRANSPORT-AS-A-SERVICE

Initial investments will be aimed at increasing operational efficiency and routing (in order to lower fuel consumption), but the focus will soon shift to moving into adjacent domains to establish a platform-based ecosystem play that orchestrates data-driven insights across supply chains to optimize value creation and develop new revenue streams.

The aim will be to create a fully integrated transport-as-a-service transit system that includes a digital platform, access to the latest cargo mobility offerings, incentives (e.g. lower costs, zero-carbon mobility, transparency), and measurement tools (including CO₂) to ensure that all transport services are running at full efficiency. The objective will be to fully integrate and orchestrate all available services throughout the global supply chain, from origin to destination.

This will involve increasing integration across the modes of cargo mobility and infrastructure operators and ensuring that providers can collect all the data they need to establish transport options that direct cargo flows toward the most efficient and environmentally sound sourcing and travel modes.

DATA DRIVES VALUE GENERATION

Experience from other industries suggests that the service play that is fuelled by the data from operating the standardised asset base could become at least as valuable as the asset operation.

Companies in other industries are aggressively generating value from data.

The vessel-as-a-service model will allow players to focus on data monetisation throughout the lifecycle of vessels through recurring revenues and paid over-the-air upgrades, which may eventually include those related to autonomous vessel capabilities.

In today's market, the absence of an established ecosystem often results in hard-to-scale island solutions between few players, which end up generating significantly less value than they would have done with a scaled solution.

Infrastructure sharing allows digital investments to target value creation beyond the boundaries of the shipping industry

SHIPPING MARKETS AT A GLANCE



SHIPPING MARKETS AT A GLANCE

Market sentiment is weakening, but we see light at the end of the tunnel

Seaborne trade volumes are suffering from the effects of the pandemic, while fleets have been expanding. The supply side is becoming more manageable, but the orderbook is heavily frontloaded. Capacity equivalent to 4.2% of the fleet is scheduled to be delivered during 2021, while demand is only likely to regain the lost territory. Seaborne trade volumes are expected to grow more strongly than the fleet from 2022, which, combined with older, less efficient vessels being scrapped, should improve freight rates and secondhand prices. The market outlook for 2023 and beyond clearly depends on future contracting, but signs are that fleet availability will tighten, since older vessels are likely to slow steam or be scrapped.

CLARKSEA INDEX AND SECONDHAND PRICES

The ClarkSea Index was anchored at around USD 15,000 per day for large parts of 2020 but surged to USD 22,000 in April 2021. Current earning levels are in the top 20% observed since 2010. The average secondhand price dropped to its lowest level in 3.5 years in October 2020 but has since gained 38% and reached index 120 in April 2021. Secondhand prices are currently in the top 30% seen since 2000.

The improved earnings environment has impacted the secondhand prices of older vessels the most.

The risk of seaborne demand peaking is on the rise across industries and sectors. This is beginning to weigh on long-term earnings expectations not only for vessels transporting fossil fuels but also for large Container vessels, Car Carriers and Offshore-related vessels.

Dry Bulk and Container vessels are currently experiencing strong growth in

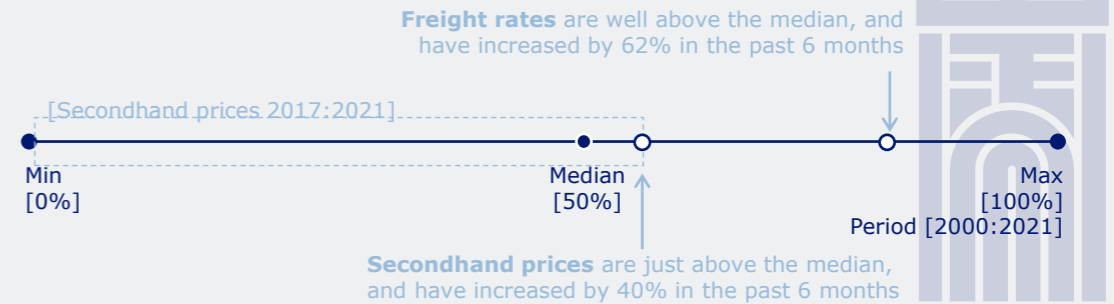
freight rates and secondhand prices, while Tanker markets are struggling to exit the doldrums. Freight rates and secondhand prices have weakened, although we are seeing some degree of improvement.

Markets for Gas Carriers are highly volatile. Players are struggling to absorb a supply surplus that is expected to widen further during 2021. The smaller vessels are better positioned than the larger ones.

Offshore-related vessels are in significant oversupply.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – APRIL 2021



Global demand for seaborne trade contracted by 3.6% in 2020, but travel distances increased by 2%, absorbing some of the decline. Fleet utilisation weakened during the period, since the world fleet grew by 3.1%. Vessel supply was slightly reduced by slower speeds (-1%), but the effect was somewhat offset by more vessels returning from docking (+0.5%).

Deliveries decreased by 10% in 2020 versus 2019, with 87 million dwt added to the fleet. The inflow of new vessels continued to soften during the first 2 months of 2021, when 14 million dwt was delivered.

Scrapping intensified in 2020 with 23 million dwt scrapped (54% more than in 2019). The average scrapping age dropped by 4 months to 27.7 years from 2019 to 2020, and was stable in the first quarter of 2021.

Contracting activity declined by 25% in 2020. 54 million dwt was ordered, compared to 72 million dwt in 2019.

Activity has surged during 1Q2021.

The **orderbook** is up by 7 million dwt (since January 2021) and now represents 7.8% of the fleet.

Seaborne trade volumes hardly increased during 2019 and shrank by 3.6% in 2020. Longer travel distances absorbed some of the decline.

Distance-adjusted vessel demand decreased for Crude and Product Tankers and Containers in 2020, while Dry Bulk, LPG and LNG managed to expand volumes and increase travel distances.

STRONG INFLOW OF NEW VESSELS DOMINATES THE SHORT-TERM OUTLOOK

But the orderbook is rapidly emptying

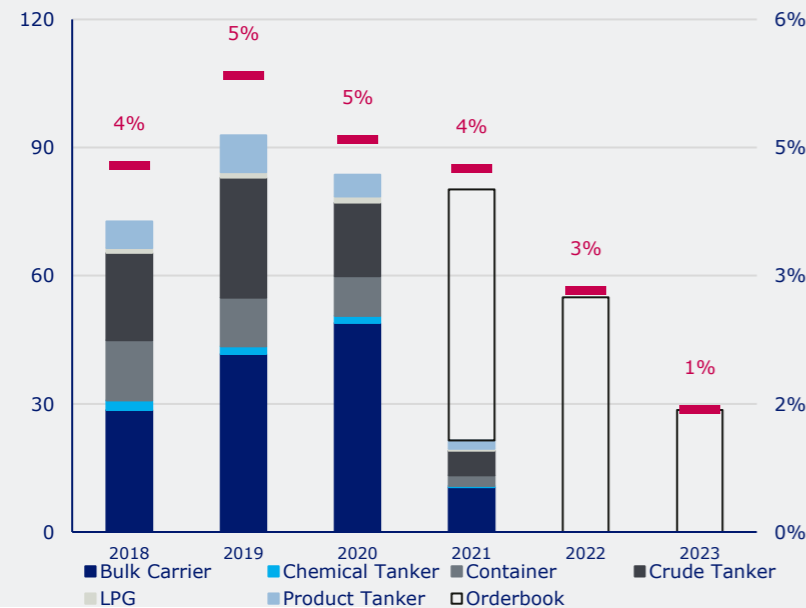
The supply side is becoming more manageable, as the orderbook is shrinking quickly while few new vessels are being ordered. Still, the short-term outlook is for significant fleet expansion.

The orderbook represents 7.8% of the fleet, and 57% of the vessels on order (40% of capacity) are scheduled for delivery in 2021. 85% of the current orderbook is scheduled for delivery before year-end 2022.

The world fleet is projected to take delivery of new vessels with a capacity equivalent to 4.2% of the fleet in 2021 and 2.8% in 2022.

The ten largest yard groups control more than 80% of the orderbook but will deliver only 40% of their orderbook

ACTUAL AND EXPECTED DELIVERIES (MILLION DWT)

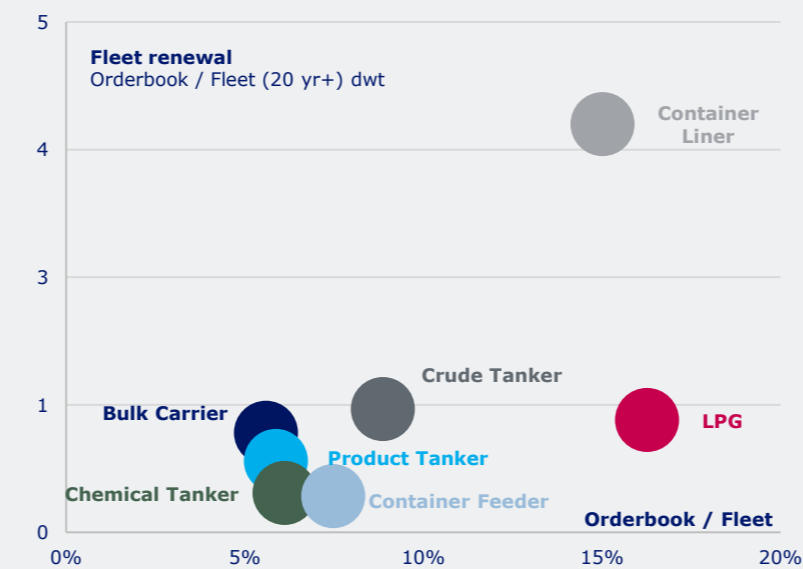


during 2021. This reflects the consolidation process that is shaping the yard industry. Many of the smaller yards are quickly running out of employment.

Three vessel segments are maintaining extraordinarily large orderbooks: LNG, LPG and large Container vessels. These segments do not have exceptionally strong demand outlooks. If demolition does not take off, these segments could be heading for a difficult period of low income and depreciating secondhand prices.

Seaborne trade volumes are working to regain the lost territory but are not expected to return to 2019 levels until late 2021. Crude and Product Tankers are not expected to recover until 2022.

FLEET RENEWAL POTENTIAL (DWT)

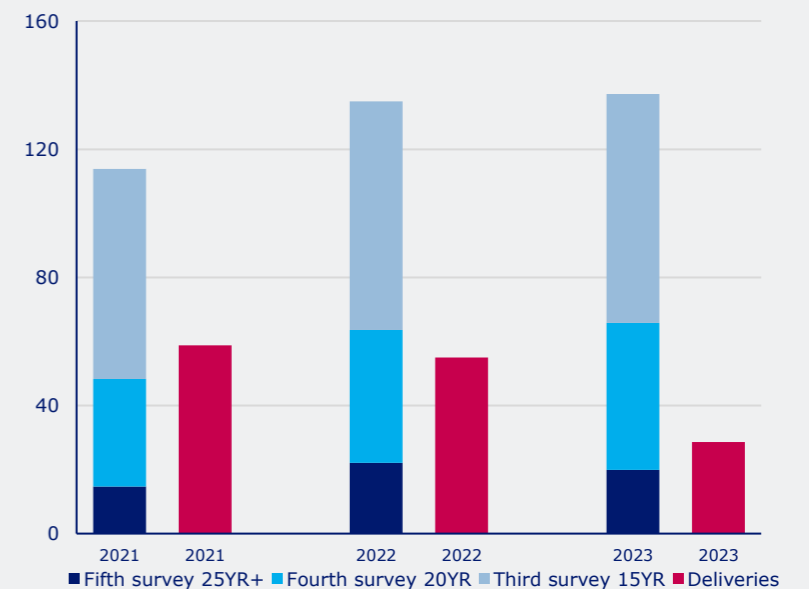


The imbalance between supply and demand is raising expectations for scrapping of older, less efficient vessels across segments. The sooner capacity is taken out of service, the better the remaining vessels will fare.

Surplus vessel capacity cannot be absorbed by scrapping vessels older than 25 years alone. In 2022, economic lifetimes could drop in segments where younger, less efficient vessels are demolished to balance the market.

The effect is only expected to be temporary. The low contracting activity, combined with increased demand, creates potential for higher freight rates and secondhand prices sometime after 2022. The duration of the upturn depends on future contracting activity.

DELIVERIES AND OUT FOR SPECIAL SURVEY (MILLION DWT)



Source: Clarksons, Drewry, Danish Ship Finance

DEEP DIVE: ARE WE APPROACHING A PERIOD OF LOWER VESSEL AVAILABILITY?

The IMO may be supporting a market recovery by bringing forward phase 3 of the EEDI

Many of the major shipping segments are burdened by structural overcapacity that is somehow being absorbed by slow steaming.

Container, Dry Bulk, Crude and Product Tankers are slow steaming to reduce costs and curb the market effects of a structural supply surplus. Vessels have on average reduced speeds by between 18% and 25% compared to their 2008 levels.

There is little doubt that the call to decarbonise the shipping industry is currently reducing the short-term appetite for ordering new vessels while supporting the demolition of older, less efficient vessels in the coming years.

A PERIOD OF SIGNIFICANT VALUE CREATION

If this trend gains momentum, it may create a foundation for significant value creation, if only for a period. We see potential for this developing from 2023 and lasting for a period of maybe three to five years.

Additional slow steaming is widely considered an attractive short-term mechanism to further reduce the industry's CO₂ emissions while absorbing the inflow of new vessels to be delivered in 2021 and 2022.

Vessel speed and fuel consumption are closely linked. Engine load is proportional to the cube of vessel speed — meaning that a 10% decrease in the cruise speed reduces fuel usage by almost 30%.

Fuel represents by far the largest share of operational costs, which gives operators an intrinsic motive for

increasing their fuel efficiency and reducing speeds if competition allows it. This applies beyond the boundaries of new regulation.

NEW REGULATION SUPPORTS THE MARKET OUTLOOK

The International Maritime Organization (IMO) is working to develop and implement new regulation aimed at reducing the carbon dioxide (CO₂) intensity of the shipping industry by at least 40% from 2008 levels by 2030 and lowering absolute GHG emissions to at least 50% below 2008 levels by 2050.

In 2020, additional measures were approved to further reduce the industry's carbon footprint. The new regulation require ships to combine a technical and an operational approach to reduce their carbon intensity.

From 2023, the Energy Efficiency Design Index (EEDI) will be applied to all existing cargo and Cruise ships above a certain size, regardless of year of build, and is intended as a one-off certification. This is to be known as the Energy Efficiency Design Index for Existing Ships (EEXI).

A mandatory Carbon Intensity Indicator (CII) is to be introduced, measuring grams of CO₂ per dwt-mile. Vessels will obtain a rating from A to E every year. In accordance with the EEDI (and EEXI), the rating thresholds will become increasingly stringent towards 2030.

The CII will determine the annual reduction factor needed to ensure continuous improvement of a vessel's operational carbon intensity within a specific rating level.

The performance level will be recorded in the ship's Ship Energy Efficiency Management Plan (SEEMP).

A ship rated D or E for three consecutive years will have to submit a corrective action plan, to show how the required index (C or above) will be achieved.

DEEP DIVE (CONTINUING): THE CASE FOR ACTION IS CLEAR

Older, less efficient vessels are likely to be scrapped in the coming years

MARKET IMPACT UNCLEAR

The likely impact on the market of the implementation of the EEXI and the Carbon Intensity Indicator is unclear.

Early calculations suggest that only a small part of the world fleet is likely to comply without any reduction in engine power from their designed levels. Some estimates suggest that half the fleet will have to make some energy-efficiency adjustments by installing energy-efficiency retrofits, imposing main engine power limitation, using new fuel blends with a lower carbon content or through early retirement.

Main engine power limitation (EPL), a semi-permanent, overridable limit on a ship's maximum power, is believed to be the easiest way for older ships to meet EEXI requirements.

For mechanically controlled engines, this would take the form of a mechanical stop screw sealed by a wire that limits the amount of fuel that can enter an engine. For newer, electronically controlled engines, EPL would be applied via a password-protected software fuel limiter.

Engine power limitation (EPL) will be overridable if a ship is operating under adverse weather conditions and requires extra engine power for safety reasons; in this situation, the override should be recorded and reported to the appropriate regulatory authority.

EPL could cut fuel usage and CO₂ emissions if it reduces the operational speeds of affected vessels. The EEXI will not directly reduce fuel usage and CO₂ emissions if ships

are already operating below the de facto speed limit implied by the required EPL. This means that the effectiveness of technical efficiency measures like the EEXI needs to be evaluated in real-world conditions.

In 2021, Containers, Oil Tankers, and Bulk Carriers have on average been operating at between 11 knots and 14 knots, or between 38% and 50% of their maximum continuous rating (MCR). This is well below the engine loads that would be allowable under the EEXI, which range from 65% to 77% of MCR. If the EEXI does not limit engine power below what ships are already operating at, it will not result in reductions of vessels' speeds or CO₂ emissions.

OLDER AND LESS EFFICIENT VESSELS WILL BE IMPACTED

Dealing with average figures is never accurate. We are in no doubt that the IMO's intention is for large parts of the fleets to be upgraded to become more efficient. Most younger vessels will already be in the vicinity of the required EEXI threshold. Some may be required to make smaller-scale alterations.

The issues become clearer amongst older vessels. The scale of reduction required is likely to be more expensive and require major changes, for example larger engine power limits which could affect actual operational speeds and vessels' prospect for future hire.

The new regulation could drive additional market segmentation where vessel earnings (and secondhand prices) are increasingly subject to the vessels ratings.

It is for these older vessels where the regulation may well incentivise owners to look at recycling, rather than investing in vessel upgrades.

Vessel supply could be squeezed either temporarily when vessels exit service to be retrofitted or permanently when vessels are scrapped prematurely.

LIMITED SHORT-TERM EFFECTS

The upcoming regulation sends a clear signal to the market but could, in some segments, prove relatively ineffective in the first few years after implementation.

We could see a situation where market base measures have a similar impact before the new regulation takes effect from 2023.

There is obviously still a lot to be confirmed, with the IMO expected to finalise and adopt the regulation at MEPC 76 in June this year.

Still, the case for action is clear. Shipowners' access to cargo, capital and ports could be at risk if they are considered not to be doing enough about their CO₂ footprint.

SHIPBUILDING



SHIPBUILDING: UPDATE

High capacity but few new orders

Contracting activity increased significantly from October to April 2021 but the total for the past 12 months remains at a low level. Owners are holding back, since uncertainty related to the decarbonisation of the shipping industry are increasing risks. Many yards are quickly running out of orders. A group of 64 first-tier yards, representing half the global capacity but 80% of the orderbook, are performing more strongly than the 221 second-tier yards. Yard capacity has kept fairly stable at 57 million cgt since 2019, but 133 second-tier yards with a combined capacity of 10.5 million cgt (20% of capacity) are scheduled to deliver their last orders during 2021. It seems that 2022 is currently scheduled to be more difficult.

EMPTYING ORDERBOOKS AND IDLE YARD CAPACITY

The increased contracting activity between October and April 2021 allowed newbuilding prices to rise by 6%. Still, newbuilding prices were only settled between 60 yards, representing 60% of yard capacity and 70% of the orderbook. The remaining 225 yards did not receive any new orders during the period. These yards are expected to deliver 50% of their orderbooks during the last eight months of 2021.

Contracting activity picked up in the period from October to April, with 18 million cgt contracted. Container vessels accounted for half of the contracted capacity, distributed evenly between Chinese and South Korean yards. Contracted volumes account for 25% of the current orderbook.

China and South Korea are gaining market share at Japan's expense, but all three regions are struggling to secure enough new orders to utilise their yard capacity.

Two-thirds of the orderbook is scheduled

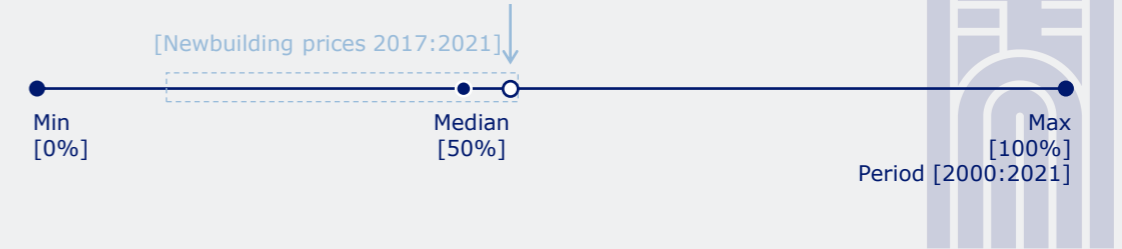
to be delivered before year-end 2022. The front-loaded nature of the orderbook is most severe in Japan, where 95% of the orderbook is scheduled to be delivered in the period, compared with 73% in China and 60% in South Korea.

South Korea is performing best in terms of the size of the orderbook relative to yard capacity (order cover of 1.5), but the orderbook is more stretched than, for example, the Chinese, which is creating periods of low utilisation, especially at second-tier yards.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – APRIL 2021

Newbuilding prices have increased 6% in the past six months



Yards delivered 28 million cgt in 2020, which was only 80% of scheduled orders. First-tier yards delivered 84%, while second-tier yards only delivered 73%. South Korean yards delivered according to schedule, and Chinese and Japanese yards each delivered 75% of scheduled orders. Higher contracting activity increased the orderbook by 5% to 70 million cgt from October to April. Still, with a global capacity of 57 million cgt, yards could deliver the orderbook in 16 months if orders were placed to utilise capacity fully.

Yard utilisation: Yard capacity remains poorly utilised. The average yard only utilised half of its capacity during 2020.

This is expected to increase to 60% in 2021. The group of first-tier yards are performing significantly better than their second-tier competitors. Japanese and Chinese first-tier yards are scheduled to utilise more than 85% of their capacity in 2021, while the average second-tier yard is scheduled to utilise less than 40% of its capacity.

The average South Korean yard is only scheduled to utilise 63% of its capacity in 2021. The country's six first-tier yards are performing better, utilising 70%, while the four second-tier yards are scheduled to utilise only 15% of their capacity this year.

Yards with a combined capacity of 10.5 million cgt, representing 20% of global yard capacity, are set to run out of orders in 2021. Yards accounting for another 13 million cgt are currently projected to run out of orders in 2022.

CONTAINER



CONTAINER

Strong earnings but relatively weak fundamentals

The network of alliances has managed to exercise strict capacity control, allowing box rates to rise sharply during a period when the supply surplus has increased. At its peak in 2020, vessels with capacity of more than 2.6 million teu (the equivalent of two years of fleet expansion) were excluded from service. The box rate outlook is subject to the commercial discipline of the alliances, since the balance between supply and demand is expected to be largely unchanged in the years to come. Once the effects of Covid-19 have subsided, the fragile market balance could easily be jeopardised if one party attempts to gain market share, or the recent profits are (over)invested in new vessels. The orderbook is low but largely oriented towards large vessels. We see a long-term risk of surplus vessel capacity in these vessel segments.

FREIGHT RATES AND SECONDHAND PRICES

Container box rates have experienced a record-breaking bull run since the fourth quarter of 2020 and into the first quarter of 2021. The temporal shift in consumption patterns towards containerised goods has driven a surge in cargo demand, while active capacity has struggled to keep pace. The average secondhand prices index increased by 16% during the fourth quarter of 2020 and another 28% during the first quarter of 2021.

HIGH BOX RATES...

Box rates on the major westbound Asia-Europe trade almost doubled over the course of the fourth quarter 2020 to reach their highest level in over ten years. The CCFI Composite Index climbed 50% during the fourth quarter. This represented the fourth consecutive quarter of rising average freight rates and was by far the steepest rise on record.

The development continued into the first quarter of 2021, and in February the CCFI Composite Index passed Index 2,000.

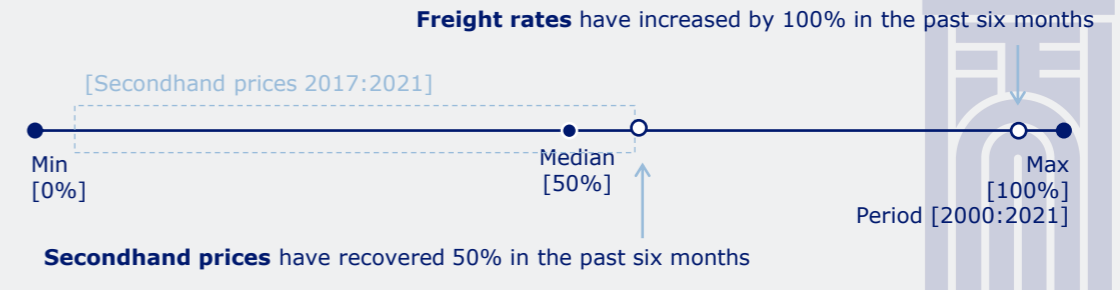
The carrier bonanza was clearly driven by logistical issues rather than a shortage of vessels.

...AND LONGER CHARTER PERIODS

Tonnage providers did not all benefit equally during 2020, but the average timecharter index gained 42% during the fourth quarter and an additional 34% during the first quarter of 2021. The average fixture period has become significantly longer, signalling that carriers expect the strong market to last at least until the end of 2021.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – APRIL 2021



Surplus vessel capacity continues to build. The fleet expanded by 4% in 2020, while demand contracted by 1.2%. Travel distances were relatively stable. Still, volumes resumed strongly from the fourth quarter of 2020, as reduced travel and leisure spending shifted consumer spending towards containerised goods, including personal protective equipment. Landside bottlenecks have contributed to the current Container shortage, while carriers have proved to be very adept at managing capacity.

Deliveries continued to decrease, from 1.3 million teu in 2018, 1 million in 2019 to 0.9 million (140 vessels) in 2020. Still, 1.1 million teu is scheduled to enter the fleet in 2021.

Scrapping: Few vessels are being scrapped, despite the surplus capacity. Only 79 vessels (one above 8,000 teu) were scrapped (0.2 million teu) in 2020. Still, scrapping absorbed 83% of the intake below 12,000 teu.

Contracting: Surplus vessel capacity has not been enough to keep contracting low. More than 2 million teu has been contracted in the last six

months: 0.75 million teu during the fourth quarter and 1.4 million teu during the first quarter of 2021.

Orderbook: The orderbook represented 10% of the fleet for large parts of 2020 but increased to 15% as per April 2021. For vessels larger than 15,000 teu, the orderbook represents a somewhat concerning 65% of the fleet.

Demand is temporarily strong, but annual figures for 2020 declined by 1.2%, while forecasts for 2021 suggest a 4% increase compared to 2019.

MARKET DYNAMICS IN THE LAST SIX MONTHS

A change in consumer behaviour has supercharged Container demand and sent box rates through the roof

Container demand was stronger than anticipated during the fourth quarter of 2020 and the first quarter of 2021.

HIGH CONTAINER DEMAND

We have seen a massive shift – albeit only temporary – in consumer spending. Social distancing has subdued contact-intensive activities, dampening leisure spending on vacations abroad and eating out. Consumers have not stopped spending; rather, they have redirected their spending to Container-intensive physical goods.

BUT MANY MARKET PARTICIPANTS WERE UNPREPARED

The change in consumer behaviour took many by surprise. During the second and third quarters of 2020, many operators prepared for a double-digit percentage fall in

demand, but global box throughputs declined by just 1.2% in 2020 and are projected to end 2021 6% above the 2019 level.

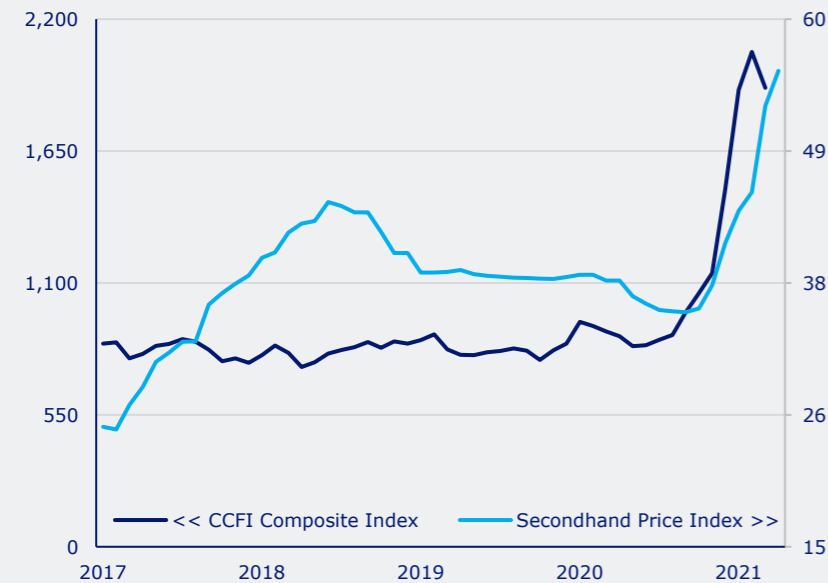
INFRASTRUCTURAL BOTTLENECKS

The Container market was bordering on chaos during the fourth quarter of 2020 and into the first quarter of 2021. Ports were finding it difficult getting back up to speed, many encountered a shortage of Container equipment, and carriers struggled to reintroduce capacity to the market. Although new services were added during the fourth quarter, there likely would have been more had the supply chain been working properly.

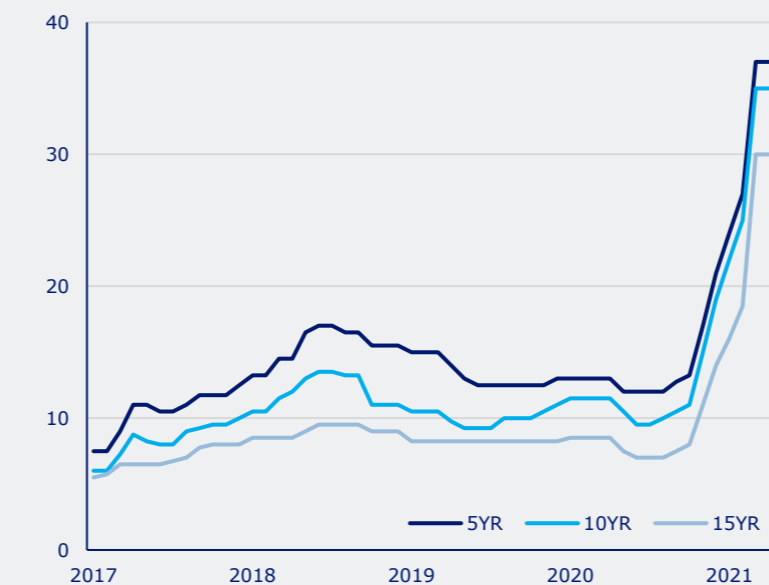
STRONG TRANSACTION ACTIVITY

S&P activity has increased strongly, with 80 vessels traded during the fourth quarter and another 100 during the first quarter. Few expect the high market to last for long. The blockage of the Suez Canal in March may extend the current run by a few months. Still, price spreads between young and older vessels have begun to widen during 2021. Younger vessels currently appear to be priced at high levels.

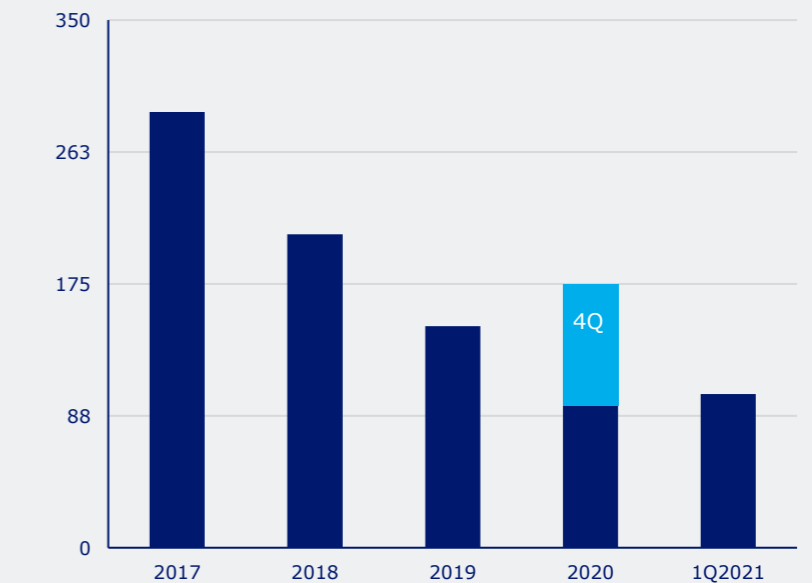
BOX RATES AND SECONDHAND PRICES



SECONDHAND PRICES (4,500 TEU)



S&P ACTIVITY (NUMBER OF VESSELS)



Source: Clarksons, Danish Ship Finance

SUMMARY: CONTAINER MARKET OUTLOOK

Surplus capacity continues to build, but box rates could maintain healthy levels

The box rate outlook depends on the commercial discipline of the alliances. With the fleet running ahead of demand, if a battle over market share begins, it will have a material impact on box rates until a new balance has been restored. In today's market, earnings are strong. Some are investing in new vessels, while others seem to be waiting – maybe for more clarity on the pathway to zero-carbon shipping. Early movers will clearly increase their risk of stranded assets if they choose the wrong path.

The ten largest Liner companies accounted for 85% of deployed Container capacity at the beginning of 2021 compared to 63% at the start of 2009. Tonnage providers own a fleet of 2,455 vessels with a combined capacity of 10.3 million teu – equivalent to 43% of the Container fleet.

The Container market is oversupplied, but operators are strictly managing capacity by carefully planning the composition of vessels on specific routes. Cascading and slow steaming continue to help operators adjust capacity, fuel costs and emissions. Overall, the average Container vessel sailed at 14.4 knots in 2021, which is 26% slower than in 2008.

The orderbook has risen to 15% of the fleet on the back of new orders coming in during the fourth quarter of 2020 and the first quarter of 2021. 90% of the orderbook is scheduled to be delivered between 2021 and 2023. Overall supply growth is therefore expected to be “manageable” in relation to annual demand growth of somewhere between 3% and 6%, but the massive fleet expansion among the largest vessels may create periods of surplus vessel capacity.

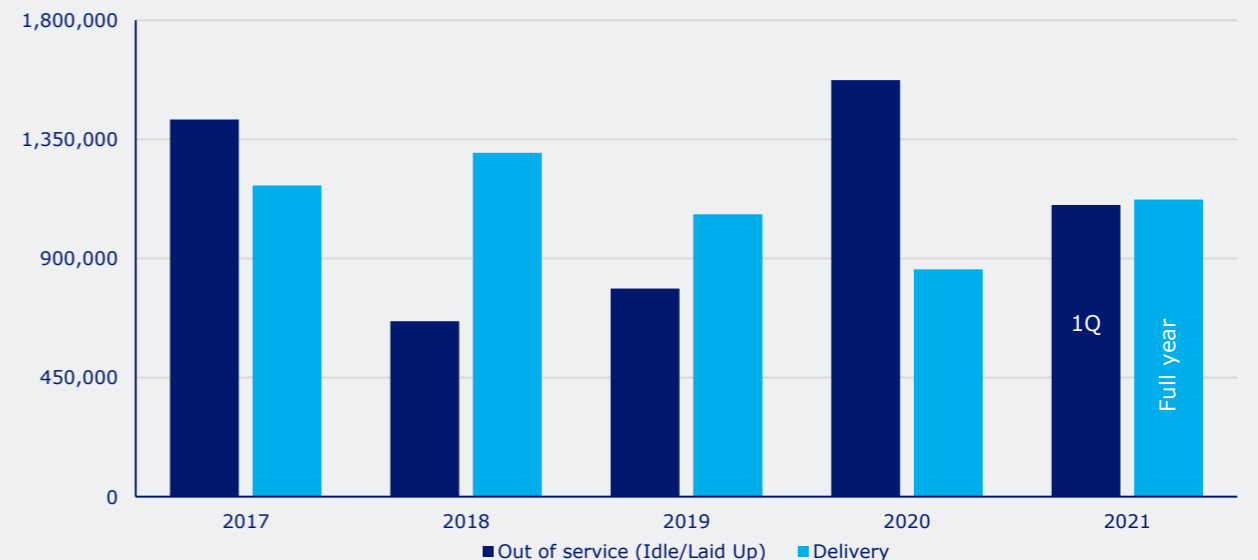
Liner companies have managed capacity tightly throughout the pandemic. At its peak in May 2020, 11% of the fleet, or 2.6 million teu (more capacity than that delivered in 2019 and 2020), was idle in anticipation of a drop in demand. This figure more than halved when infrastructural bottlenecks reduced the fleets’ cargo-carrying capacity and demand increased throughout the fourth quarter of 2020 and the first quarter of 2021.

The largest risk to the outlook is if the recent appetite for ordering new vessels turns into an over-investment competition, with the green transition serving as an excuse to order “LNG capable” vessels (currently 21% of the orderbook). Some carriers are working to

leapfrog LNG as a fuel by expanding trials of biofuel blends and zero-carbon fuels such as ammonia.

The risk of stranded assets is clearly highest for first movers that risk investing in the wrong technology, while late adopters may simply choose to retrofit vessels or postpone investments.

CAPACITY MANAGEMENT WORKS TO BALANCE THE MARKET (TEU)



Source: Clarksons, Danish Ship Finance

CONTAINER FLEET OUTLOOK

A strong inflow of large vessels continues to dominate the fleet outlook

The Container fleet is scheduled for growth with an orderbook-to-fleet ratio of 15%. Annual deliveries are scheduled to reach 1.1 million teu in 2021 (up 29% compared to 2020), dipping to 0.8 million teu in 2022 but bouncing back to 1.5 million teu in 2023.

LARGE VESSELS DOMINATE THE ORDERBOOK

Owners seem to be favouring vessels between 1,000 and 3,000 teu, and vessels larger than 12,000 teu. The smaller segments are at varying stages of fleet renewal, while in the larger segments fleets are expanding quickly.

BUT INCREASED FOCUS ON FLEXIBILITY

The polarised orderbook clearly signals that marginal cost per moved unit still dictates fleet compositions on deep

sea routes, while a renewed appetite for vessels between 15,000 and 18,000 teu indicates that versatility and flexibility have become increasingly important in the context of the 133 vessels larger than 18,000 teu (plus 47 on order) that dominate the east-west services.

STRONG APPETITE FOR NEW VESSELS

Contracting activity surged during the fourth quarter of 2020 and the first quarter of 2021. A total of 105 vessels were contracted in 2020, with 60% contracted during the fourth quarter. Another 138 vessels were contracted during the first quarter of 2021.

FEW VESSELS SCRAPPED

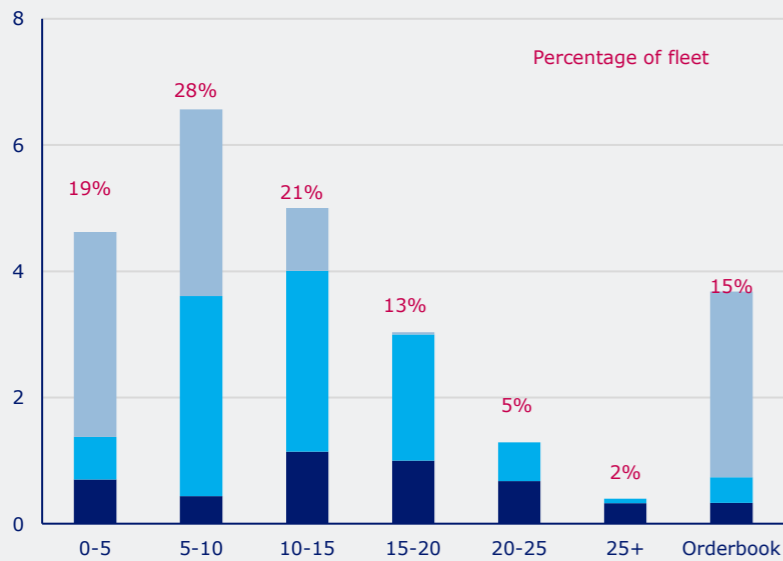
Demolition activity remains low. Approximately 1 million

teu have on average been idle in one form or another since 2010. Still, annual demolition peaked in 2016 at 0.6 million teu and has remained below 0.2 million teu since 2018.

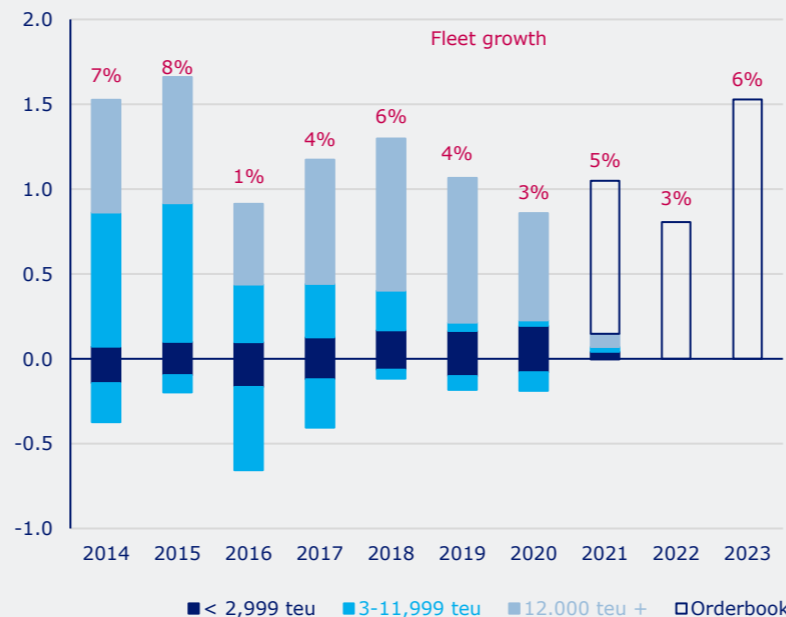
OLDER INEFFICIENT VESSELS MAY BE SCRAPPED SOON

The upcoming IMO regulation could, at some point, facilitate the early retirement of the oldest and less efficient vessels – including some of the first-generation large vessels – since new bigger ships are simply more fuel efficient per unit. But until then, it will continue to be challenging to employ the 3 million teu orderbook that is scheduled for delivery before 2024.

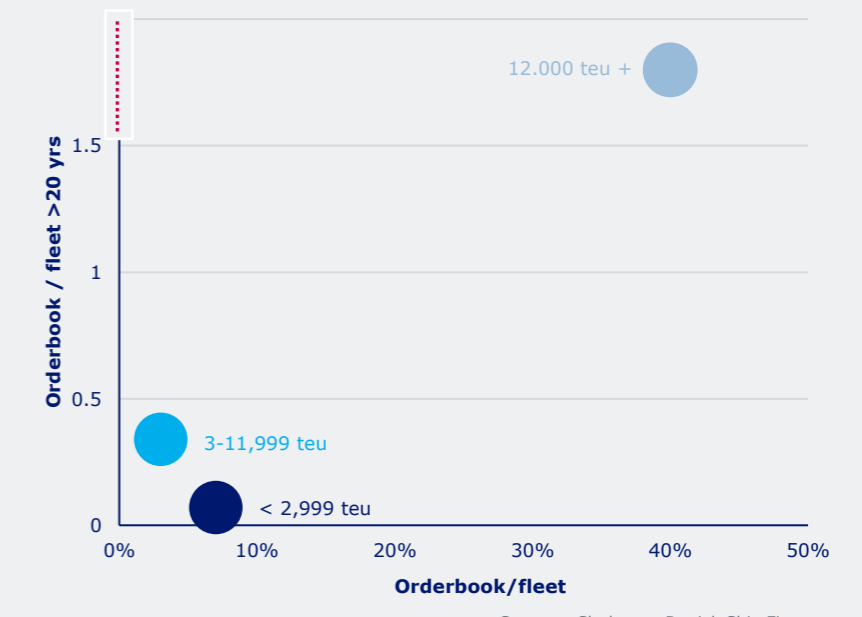
AGE DISTRIBUTION (MILLION TEU)



FLEET DEVELOPMENT (MILLION TEU)



FLEET RENEWAL POTENTIAL (TEU)



CONTAINER DEMAND OUTLOOK

Container demand is expected to grow in tandem with the global economy in 2021 and 2022

The temporary factors supporting Container demand during the fourth quarter of 2020 and the first quarter of 2021 are not expected to last, but stronger global economic growth is expected to drive demand growth of 5-6% in 2021 and 3-4% in 2022.

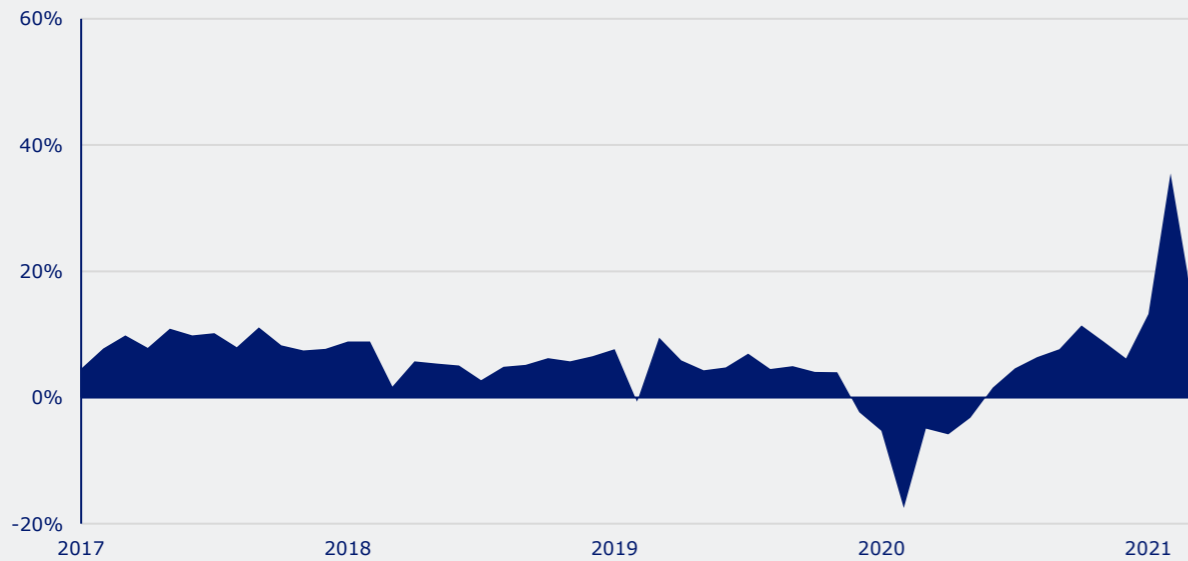
THE GLOBAL ECONOMY IS FORECAST TO EXPAND BY 6% IN 2021

The IMF expects global GDP to increase by 6% in 2021 and 4% in 2022. All major economies are expected to grow, but not all may regain the territory lost in 2020.

CONTAINER VOLUMES ARE LIKELY TO REGAIN THE LOST TERRITORY DURING 2021

Current projections for Container volumes seem to indicate that the robust volume rebound will likely continue until a significant proportion of consumers have been vaccinated, although the peak impact of the change in consumer spending is likely to be behind us. If that turns out to be fairly accurate, Container demand could grow by 5-6% during 2021, with volumes ending up 4% above the 2019 level.

CONTAINER THROUGHPUT – CHINESE PORTS MONTHLY INDICATOR (YOY)



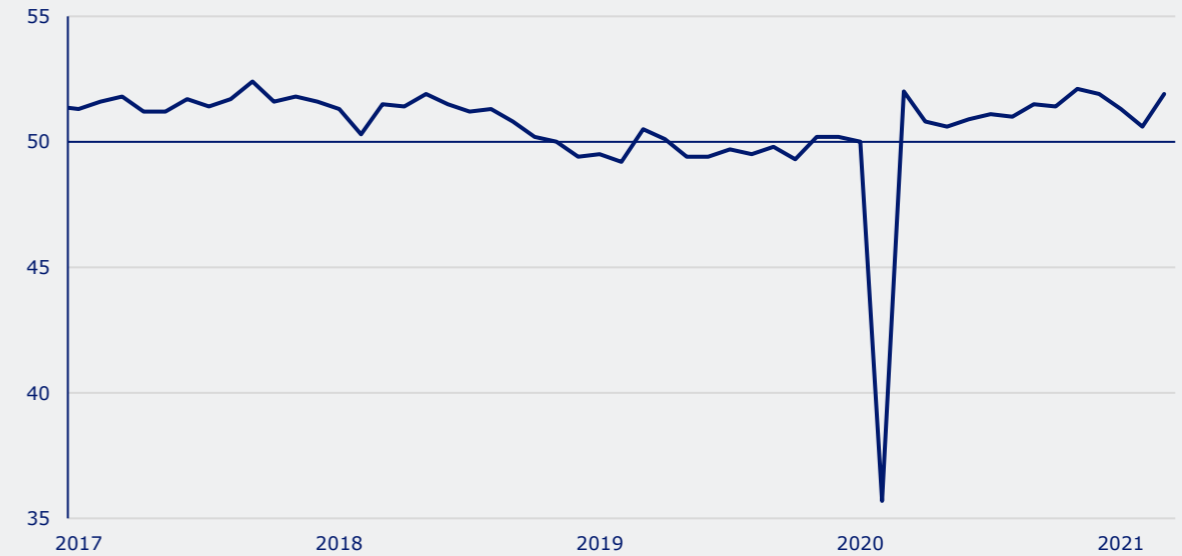
BUT PERIODS OF LOW DEMAND ARE EXPECTED

Nonetheless, demand conditions are expected to normalise later in 2021 or into 2022. Initially, there is likely to be a temporary drop in Container demand, since consumers may spend more than usual on services after months of lockdowns without travel and leisure spending. Knock-on effects from unemployment and business closures could intensify the effect and create a period of low activity and low box rates if capacity is not managed carefully.

EARLY SIGNS OF NORMALISATION

Chinese PMIs dipped briefly in February but recovered in March. Still, growth in credit, electricity generation and rail freight has declined. This could indicate that we are likely to see the peak in global manufacturing growth very soon. If this is the case, the outlook for Container volumes should be revised downwards sooner rather than later. Still, Container volumes are projected to grow by 3-4% in 2022, but the outlook is clearly uncertain.

CHINESE PMI DATA



Source: Clarksons, Danish Ship Finance

DEEP DIVE: LONG-TERM TRENDS IN CONTAINER DEMAND

Structural shifts could be lowering the long-term outlook for the largest vessels but improving it for mid-sized vessels

The pandemic has introduced some unusual short-term effects on consumer spending that have benefited Container demand hugely. Still, it will have some medium- and long-term repercussions that, in combination with pre-existing structural trends, weaken the demand outlook for the largest Container vessels. There seems to be little to suggest that Container volumes will not continue to grow, but trading patterns could mean that the largest vessels start falling out of favour.

HEAD-HAUL RECOVERY

Head-haul demand volumes should rebound quickly, as advanced economies are expected to recover sooner and more strongly than emerging economies, likely reflecting earlier access to vaccines and therapies.

BUT MANY EMERGING CONSUMERS ARE BEING LEFT BEHIND

Still, large swathes of the next-generation consumers are finding it difficult to regain their footing. Young people and lower-skilled workers (many employed in highly contact-intensive sectors) have been among the most heavily impacted, with sharp rises in unemployment rates, declines in labour force participation, reduced incomes and permanent shifts in consumer preferences. Worker reallocation across sectors is likely, but it will come at a cost, as average earnings for those who make the switch will fall.

GLOBAL GDP COULD BE 3 PP LOWER IN 2024

The pandemic is expected to have long-lasting adverse effects on global activity. It is likely to worsen the slowdown in global growth projected for the next few

years, due to underinvestment, underemployment and labour force declines in many economies. Global GDP is expected to be about 3 percentage points lower in 2024 than pre-pandemic projections suggested, according to the IMF.

CONTAINER VOLUMES MAY GROW MORE SLOWLY THAN GDP

Container demand has historically outpaced GDP growth, but ageing global consumers and the ensuing shift in consumption patterns towards the service sector (e.g. healthcare and leisure spending) have reduced this trend. Emerging global consumers are generating less deep-sea head-haul demand per dollar growth than their predecessors. Most live in Asia (a back-haul route on the east-west trade) and are more likely to demand access rather than ownership of goods, weakening the relationship between economic growth and Container volumes further.

SUPPLY CHAINS ARE UP FOR REVIEW

The supply chain disruptions caused by the pandemic have accelerated pre-existing trends, hastening the shift towards automation, reshoring of production and supply chain resilience across sectors and industries. Few of these trends are supportive of long-term demand for the largest Container vessels.

SOME PRODUCTION COULD BE MOVED CLOSER TO CONSUMERS

The pandemic – and the recent blockage of the Suez Canal – has reminded us that our super cost-effective, just-in-time manufacturing ecosystem, with many companies holding near-zero inventories, comes at a cost. Yet, discussions about having more regionalised

supply chains with automated production closer to consumers have been going on for the last ten years. The pandemic could be the shock that kickstarts the trend in some sectors and industries, while others may simply opt to hold more inventory.

LABOUR COSTS ARE NO LONGER THE MAIN FACTOR

Offshoring production to markets with low labour costs and then shipping it to consumer markets on mega vessels originally made a lot of sense when labour costs were the focus. But in today's market, where automation is reducing manufacturers' dependence on labour costs and the climate agenda has expanded to include supply-chain emissions (Scope 3 emissions) and circularity, there seems little indication that production will continue to be highly centralised. Naturally, some production will remain centralised, but a large share may become regionalised.

REDUCED LONG-TERM OUTLOOK FOR THE LARGEST VESSELS

Container demand is unlikely to decline in the coming years, but there is a question mark over the dominance of the mega vessels trading east-west. Many of these will still be required, but alternative lanes with more flexibility are likely to emerge alongside these main infrastructures. We expect to see more regionalisation, shorter travel distances and mid-sized vessels defining the long-term outlook for a decarbonised Container industry.

DRY BULK



DRY BULK

A strong recovery is overshadowing growing demand risks

The Dry Bulk market is currently being shaped by strong demand and slowing growth in the active fleet – the right conditions for rising freight rates. The recovery is strongest among mid-sized and small vessels, as fleet growth is more manageable in these segments. The favourable trends seem likely to continue in the short term, but risks are building. For the Capesize segment, the capacity expansion is likely to continue, but the demand dynamic could change for the worse and bring it under pressure. The reliance on coal trade is a major long-term challenge for owners of Panamax and Handymax vessels. Increasing trade of non-ferrous metals used in the production of renewable technologies could bridge some of the volume gap but probably not enough to drive volume growth.

FREIGHT RATES AND SECONDHAND PRICES

Freight rates have been rising since our last report in November 2020. The recovery has been strongest in the mid-sized and small vessels segments, although Capesize rates are up by around 40% compared to the end of 2020. A rise in industrial activity has resulted in increased employment of Dry Bulk vessels. The market optimism is reflected in the average secondhand price of a five-year-old vessel, which is up by 20% in 2021.

Capesize: The market is on a positive trajectory, led by a rebound in coal volumes and strong long-haul iron trade between Brazil and China. The one-year timecharter rate is up 20% in 2021, reaching USD 21,400 per day in April. The five-year-old secondhand price is also up, rising 31% in the first three months from USD 27 million to USD 36 million.

Panamax: Driven by firm grain and coal trade, freight rates are up by 40%, while secondhand prices have increased by 23%. In April 2021, the one-year time charter

rate and the five-year-old secondhand price stood at USD 18,000 per day and USD 27 million, respectively.

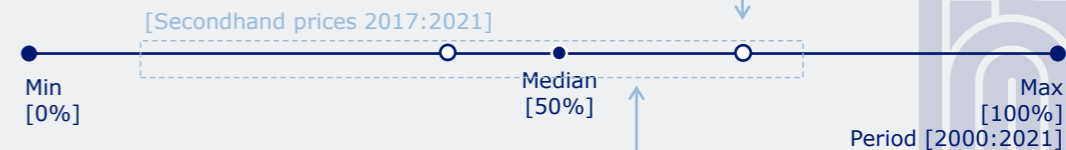
Handymax: The segment is enjoying the same positive market conditions, and prices and freight rates have increased markedly in 2021. As of April, the one-year timecharter rate stood at USD 17,400 per day, while the five-year-old secondhand price reached USD 23 million.

Handysize: In April 2021, the one-year timecharter rate was USD 17,350 per day, while the five-year-old secondhand price stood at USD 23 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – APRIL 2021

Freight rates are above the median, and have increased by 50% in the past six months



Secondhand prices are above the median and have increased 30% in the past six months

The pandemic has caused global seaborne demand for Dry Bulk commodities to fall by 2%, while travel distances have added 0.2% to the demand drop. Coal volumes have declined the most. Fleet utilisation has weakened, as the Dry Bulk fleet increased by 5% in 2020 driven by large expansion of the Capesize fleet. The demand and supply picture improved at the end of 2020 and has continued to do so in 2021, lifting the general freight rate level.

Deliveries took off in 2020, with 49 million dwt added to the fleet (5% of the fleet). Another 10 million dwt entered the fleet during the first quarter of 2021 (1%).

Scrapping: From 2019 to 2020, scrapping doubled from 8 million dwt to 16 million dwt. The high scrapping level seems to be continuing, as more than 3 million dwt was scrapped in the first four months of 2021.

Contracting activity has been high for a long time but dropped by 49% from 32 million dwt in 2019 to 16 million dwt in 2020. The reduction was driven in particular by a saturation of larger vessels.

Orderbook: The orderbook dropped 70% in 2020 due to the rise in deliveries and the low contracting activity. The orderbook represents 6% of the fleet and 60% is scheduled for delivery in 2021.

Demand: Seaborne trade volumes declined by 2% in 2020, primarily driven by a 10% fall in coal volumes. In the first three months of 2021, demand returned and volumes were up 8% compared to the same period in 2020.

Travel distances hardly changed in 2020. Distances seem to be increasing in 2021, due to growing Chinese sourcing of commodities in Brazil.

MARKET DYNAMICS IN THE LAST SIX MONTHS

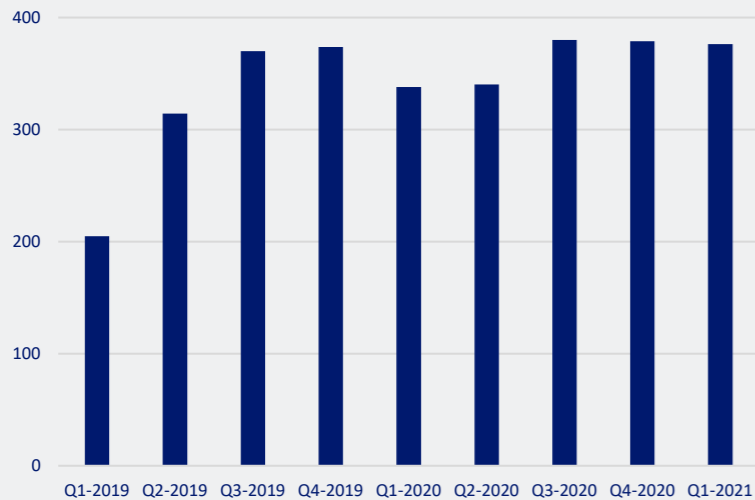
Freight rates are rising as demand volumes rebound and active fleet growth is kept low

A substantial uptick in demand, low fleet growth and a large number of vessels caught up in port congestion have created the right conditions for increased vessel earnings.

STABLE AND HIGH IRON ORE DEMAND

Powered by strong government stimulus, Chinese steel mills continue to produce at high levels, which kept iron ore trade extraordinarily strong in the first quarter of 2021. In addition, robust South American grain exports combined with a rebound in Asian coal and minor bulk demand paved the way for high employment, for the season, of Dry Bulk vessels. In the first quarter of 2021, Dry Bulk volumes were up by 8% compared to the same period last year.

IRON ORE VOLUMES (MILLION TONNES)



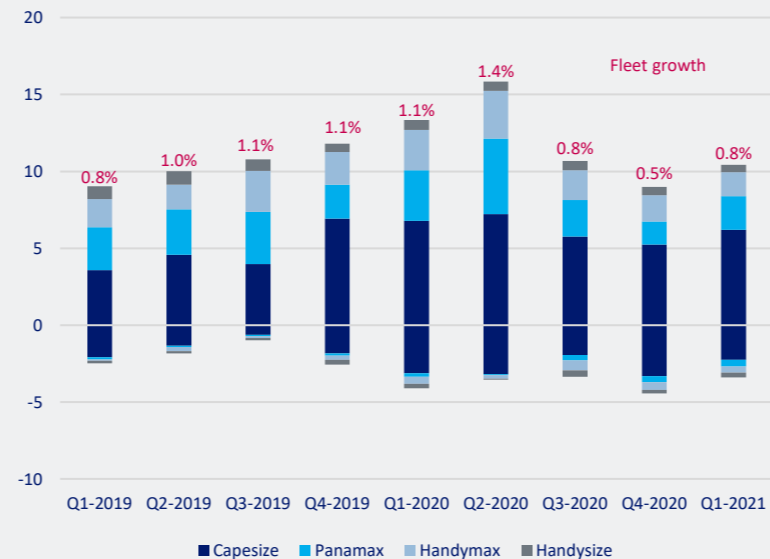
FLEET GROWTH HAS LEVELLED OFF

The fast expansion of the fleet began to abate by the end of 2020, which continued into 2021. A low number of deliveries and increased scrapping activity kept the fleet growth at 1.3% for the fourth quarter of 2020 and the first quarter of 2021. However, the market did not get the same support from vessels out of service for scrubber retrofits as it did at the beginning of 2020.

PORT CONGESTION HAS ABSORBED AVAILABLE CAPACITY

The active fleet decreased at the beginning of the year, as the number of vessels caught up in port congestion rose from 4% of the fleet in the fourth quarter of 2020 to 5% in the first quarter of 2021. A rush for exports of Brazilian iron ore and grain products kept up to 100 Capesize and

FLEET DEVELOPMENT (MILLION DWT)



Panamax vessels in congestion in Brazilian ports during February and March. In addition, 30 to 40 vessels queued for a week at the Suez Canal during the recent blockage.

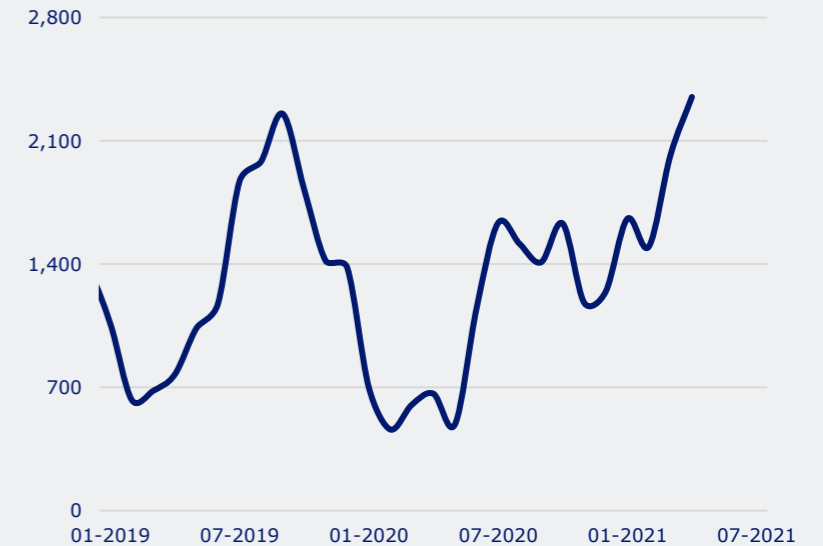
A SURGE IN LONG-HAUL SPOT RATES

During the first quarter of 2021, spot rates for Panamax and Handymax vessels rose to the tune of 70-80% as South American and Chinese grain trade took off and coal volumes returned. The low growth in the active fleet and strong iron ore demand lifted spot rates for Capesize vessels by around 50% in the same period.

TIMECHARTER RATES FOLLOWED ACCORDINGLY

By April, the one-year timecharter rate was up 40-60% in 2021 due to the high demand for vessels. The surge was strongest among mid-sized vessels.

BALTIC EXCHANGE DRY INDEX (INDEX)



Source: AXS Marine, Clarksons, Danish Ship Finance

SUMMARY: DRY BULK MARKET OUTLOOK

Times are changing for most Dry Bulk segments

The supply side is set to expand in 2021 and 2022, but the inflow of new vessels appears manageable. The short-term demand outlook for the next 12-18 months looks promising across vessel segments. In contrast, the dynamics shaping the long-term outlook are dampening demand expectations. These trends will challenge the largest vessels the most, but the mid-sized vessels could face troubled waters too.

It seems that fleet growth is being kept in check by a historically low orderbook-to-fleet ratio, while demand drivers appear strong. These factors set the scene for increased freight rates, but we do not expect this to continue in the long term.

CAPE-SIZE FLEET IS BUILT FOR GROWTH, BUT THE FOUNDATIONS FOR DEMAND ARE WEAKENING

Chinese consumption of iron ore in the steel-making process accounts for around two-thirds of demand volumes. The Chinese economy's steel intensity had been decreasing since 2005, until last year when production took off. We believe Chinese steel production could remain strong over the coming year. From a long-term perspective, we believe China's steel intensity will resume a downward trajectory. This represents a major risk to the segment, as the fleet is young and positioned for future long-term growth.

THE PANAMAX AND HANDYMAX SEGMENTS WILL BE PRESSURED BY DECREASING COAL DEMAND

Panamax and Handymax vessels have benefited from the strong rebound in coal volumes at the beginning of 2021 and almost non-existent fleet growth. Nevertheless, current contracting activity is strongest among mid-sized vessels, and demand drivers seem likely to change radically in the long term. Coal represents 36% of moved cargo in these segments, but coal demand is set to decline markedly over the coming decade. The positive outlook for non-ferrous metals could provide some support to these segments, but it is highly uncertain whether volumes can compensate for the drop in coal demand.

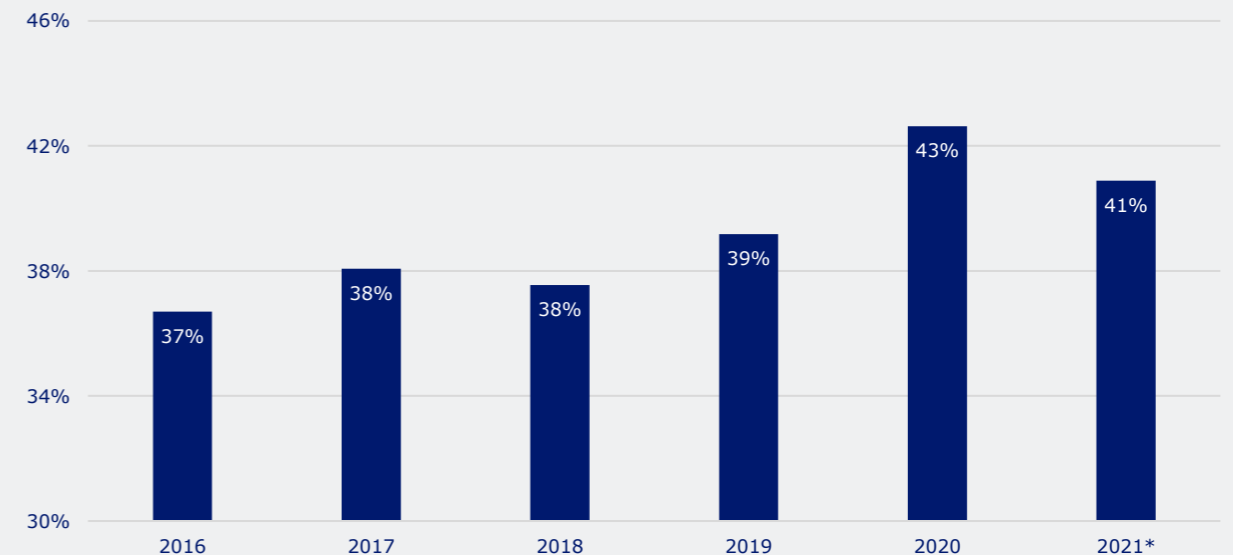
MANAGEABLE FLEET GROWTH IN THE HANDYSIZE SEGMENT

For the Handysize fleet, future growth seems manageable, due to a record-low orderbook-to-fleet ratio and large scrapping potential. The demand picture looks decent, as minor bulk and grain volumes are expected to grow. This paves the way for a positive outlook, but competition from mid-sized vessels poses a significant risk.

CHINESE POLICY DETERMINES THE OUTLOOK

For years, China has driven demand for the Dry Bulk market and the country's consumption of iron ore and coal has increased rapidly. Nevertheless, we expect a reversal of the Chinese demand dynamics in the long term. China's vision for carbon neutrality in 2060 will mean a less steel- and coal-intensive economy, while massive investments in renewable technologies will create a surge in demand for non-ferrous metals. Dry Bulk shipowners should monitor China's decarbonisation efforts closely.

SHARE OF GLOBAL DRY BULK VOLUMES DISCHARGED IN CHINA (METRIC TONNES)



* First quarter of the year

Source: Clarksons, Danish Ship Finance

DRY BULK FLEET OUTLOOK

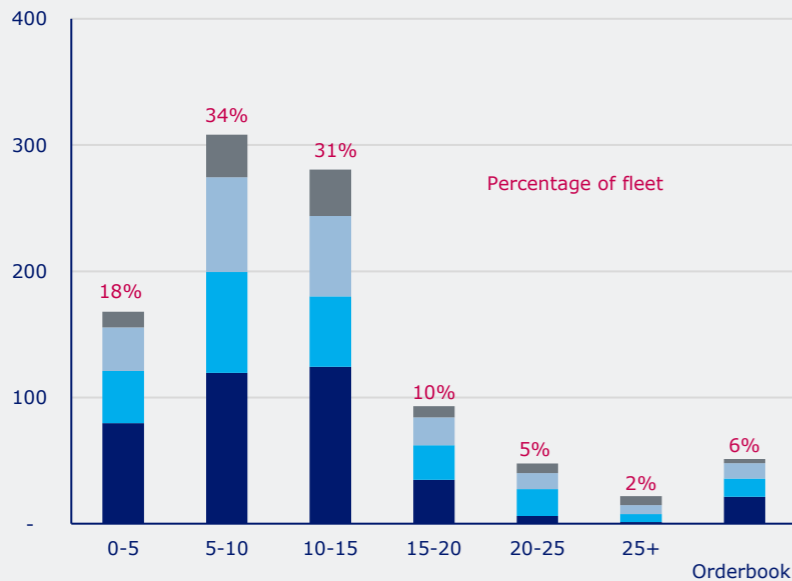
The orderbook-to-fleet ratio is at a historically low level, but the Capesize fleet continues to be challenged

Fleet growth is beginning to slow as the orderbook runs off and contracting activity remains low. Still, the expansion of the Capesize fleet continues, which is putting pressure on the average economic lifetimes of older vessels.

LOW INVESTMENT APPETITE

The orderbook has hit a historically low level of 6% of the fleet, driven by low contracting activity. Uncertainty over future zero-carbon fuels and vessel design is keeping investors from further engaging in the Dry Bulk market. In the absence of a clear pathway towards a zero-carbon fuel (see deep dive), we expect contracting to remain low. As a result, we expect a period of very low fleet growth beyond 2021. Nevertheless, the fleet is facing significant expansion in the short term.

AGE DISTRIBUTION OF FLEET (MILLION DWT)



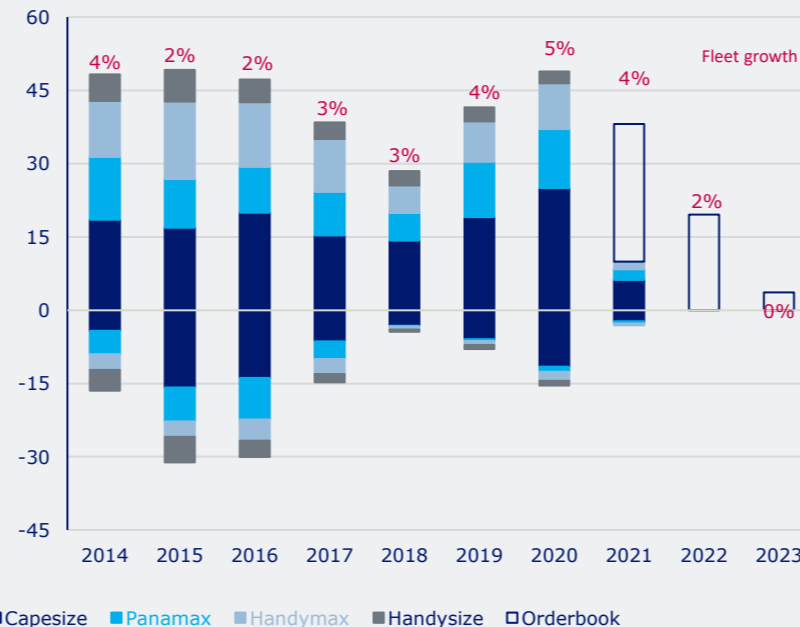
A FRONT-LOADED ORDERBOOK

Around 60% of the current orderbook is set to be delivered in 2021, resulting in an inflow of 331 new vessels (38 million dwt), which equals 4% of the fleet. In addition, docking and retrofitting activity are expected to decrease in 2021 compared to 2020, which will boost the active fleet by some 0.5%. The Capesize fleet is expanding by 5% in 2021. In 2022, the effect from the low orderbook will kick in, limiting fleet growth before scrapping to 2%. We expect this to result in the lowest annual fleet growth in five years.

PRESSURE ON ECONOMIC LIFE FOR CAPE-SIZE VESSELS

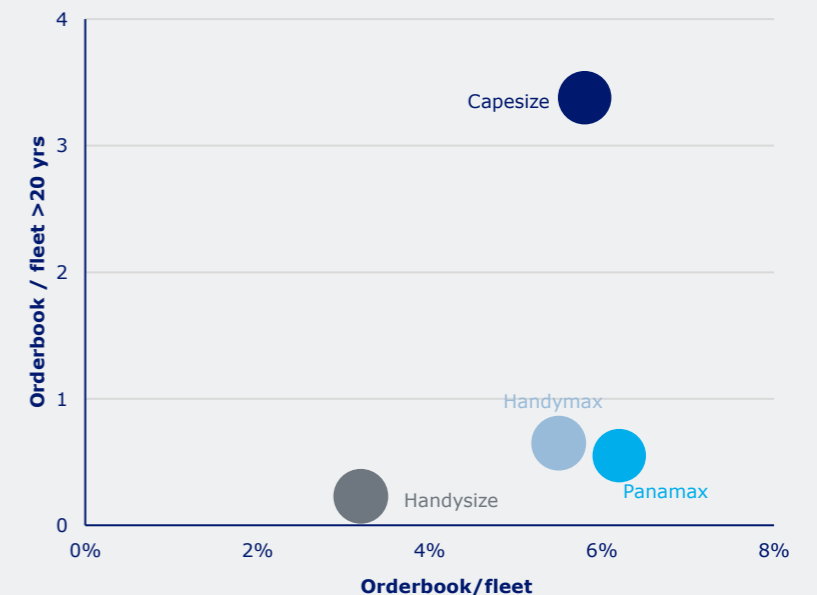
The risk of shortened economic lifetimes is rising for

FLEET DEVELOPMENT (MILLION DWT)



Capesize vessels. Over the coming two years, 95 Capesize vessels will join the fleet – three times the number of vessels older than 20 years. Absorption of these into the fleet will increase the pressure on owners to scrap vessels prematurely in order to balance the market. The average economic lifetime may drop from 22 years to below 18 years by 2022. In the Panamax, Handymax and Handysize segments, we consider absorption of new vessels into the fleet to be less problematic. If demand fails to grow, the fleet could rebalance without the economic lifetimes dropping below 30 years for the Handysize segment and 25 years for the Panamax and Handymax segments.

FLEET RENEWAL POTENTIAL (DWT)



Source: Clarksons, Danish Ship Finance

FLEET DEEP DIVE: WHILE WE ARE WAITING

Reluctance to invest in transition fuels seems to be the main reason for the decrease in contracting activity

While owners in other segments are investing in vessels propelled by transition fuels, Dry Bulk owners seem to be more hesitant. This is keeping the orderbook low for the moment, but the situation will change as the push for greener shipping increases contracting activity.

A HISTORICALLY LOW ORDERBOOK-TO-FLEET RATIO

The orderbook-to-fleet ratio has followed a downward trajectory since the end of 2018 and is now at a historical low. Last year, only 221 Dry Bulk vessels were contracted, down 39% from 2019.

FEW INVESTMENTS IN TRANSITION FUELS

While the entire shipping industry waits for a zero-carbon fuel to materialise, owners are looking to use transition fuels (e.g. LPG, LNG) in combination with engines that can easily be converted for use with zero-carbon fuels when contracting new vessels. However, this trend has not spread to the Dry Bulk segment. In the Dry Bulk fleet, 99.9% of all vessels are powered by conventional fuels, while the same number is 95% for the aggregated orderbook across segments.

LOW ACCESS TO LNG

Dry Bulk trade primarily consists of tramp shipping; vessels often do not have fixed schedules long into the future. However, it requires planning to power vessels with a transition fuel such as LNG. LNG is only available at 77 out of 1,800 ports.

SCALING OF TRANSITION FUELS SEEMS UNLIKELY

The fragmented Dry Bulk market means that there

is little opportunity to coordinate and implement the use of a common temporary fuel type. This is preventing scaling of fuel and thereby hampering the availability at enough ports to be feasible for tramp shipping.

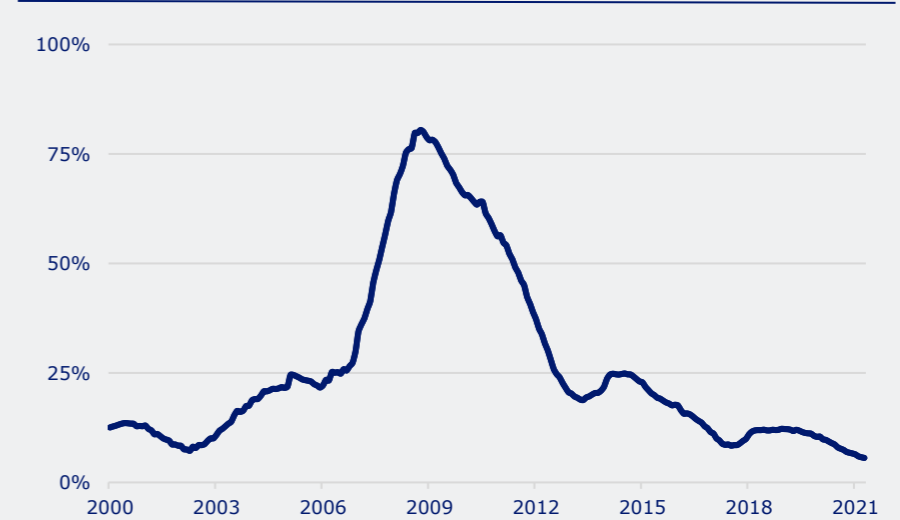
A PERIOD OF LOW CONTRACTING ACTIVITY IS LIKELY

Since the use of a transition fuel is an uncertain prospect for Dry Bulk vessels, renewal of the fleet with zero-carbon emission vessels may only start when the shipping market has settled on specific fuel types for the future. We expect this to put a lid on contracting activity in the coming years, although short-term opportunism could cause temporary spikes in new orders.

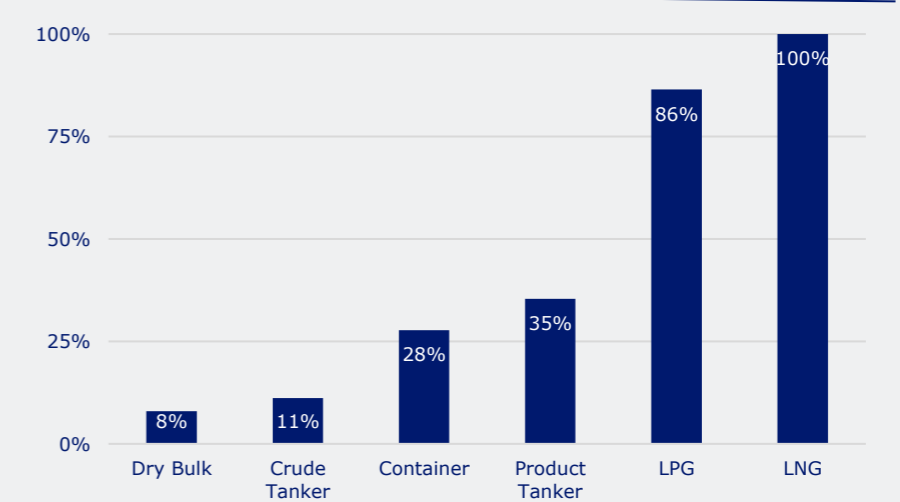
THE ORDERBOOK-TO-FLEET RATIO WILL RISE AGAIN

From a long-term perspective, we believe that the number of new contracts will increase. A push for greener transportation of Dry Bulk commodities from shareholders, regulators and cargo owners seems inevitable for vessel owners. We expect the call for new green vessels to be louder in the Dry Bulk segment than in other parts of the shipping industry due to the segment's low level of investment in bridging technologies currently. Demolition activity will have to surge, otherwise this could subsequently lead to a period of overcapacity. The Dry Bulk fleet is young, and the risk of shortened economic lifetimes will increase if we see a boom in new green vessels in the future.

ORDERBOOK-TO-FLEET RATIO (DWT)



TRANSITION FUEL IN 2020 AND CONTRACTING ACTIVITY IN 2021 (CAPACITY)



Source: Clarksons, Danish Ship Finance

DRY BULK DEMAND OUTLOOK

Changing demand dynamics could reshape the Dry Bulk market

The demand picture seems reasonable in the immediate future, but we expect this to change in the long term.

A SHORT-TERM REBOUND IN DRY BULK DEMAND

Seaborne Dry Bulk volumes are expected to grow by 1-3% in 2021 and 2022. Short-term demand volumes are being driven by a rebound in coal and minor bulk trade after a sharp decline in 2020. Longer distances could add around 0.5% to demand growth, as China is expected to increase iron ore imports from long-haul exporters at the expense of Australia. From a long-term perspective, we see a range of fundamental changes reshaping Dry Bulk demand.

A LESS STEEL-INTENSIVE CHINESE ECONOMY

Around 70% of all Capesize shipments go to China (of

which 90% are iron ore) and the fleet is currently enjoying increased iron ore demand, as Chinese fiscal stimulus is boosting steel production. This is likely to continue throughout 2021. In the long term, we expect the Chinese economy to be increasingly driven by advanced technology and less by building and construction activity. This will lower the Chinese economy's steel intensity, hampering demand growth for iron ore and putting pressure on the Capesize fleet.

DECREASING COAL TRADE CHALLENGES MID-SIZED VESSELS

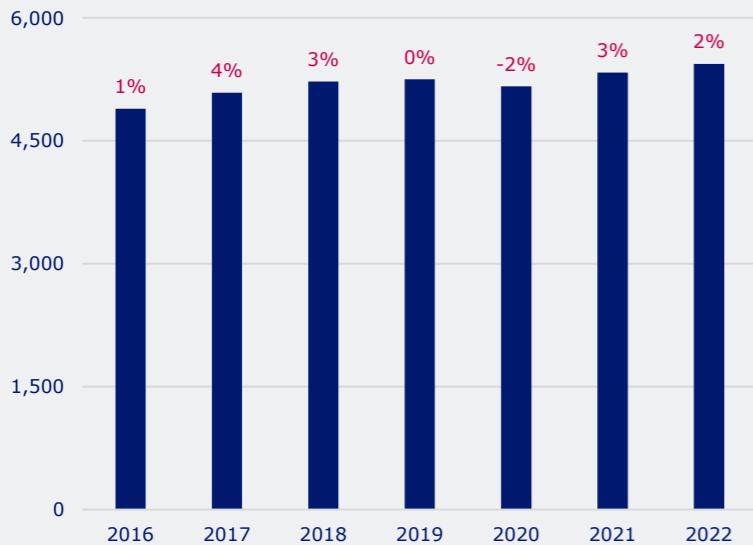
The Panamax and Handymax segments are heavily exposed to thermal coal trade, with steam coal accounting for around a third of transported volumes. We expect a short-term rise in coal demand as energy consumption

regains some of the lost territory from 2020. Nevertheless, the Panamax and Handymax segments face structural headwinds in the coming decades. As the energy transition takes off, coal's share of the global energy supply is projected to drop from 25% to 16% in 2040, potentially lowering volumes for these vessels by up to 19%.

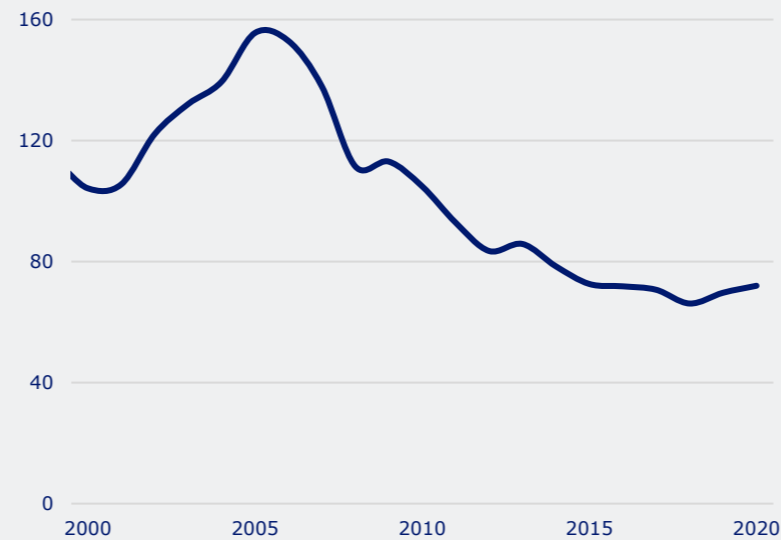
GROWTH IN NON-FERROUS METALS COULD MITIGATE THIS

The volume impact on the Panamax and Handymax segments, in case coal demand decline, could be mitigated by an increase in trade of nickel, copper, lithium, cobalt and bauxite of an estimated 144 million tonnes. This could limit the drop to 7%. Non-ferrous metals are essential to the fast-growing production of renewable technologies and are mainly transported by mid-sized vessels.

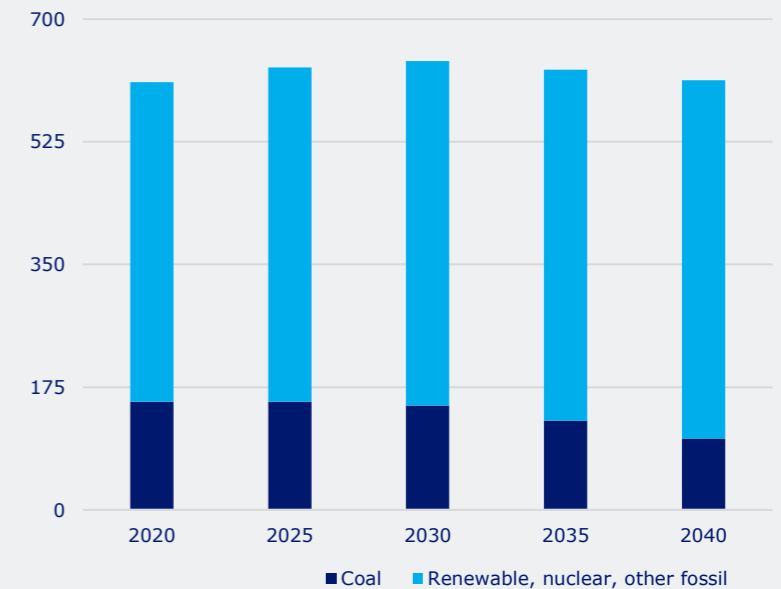
WORLD SEABORNE DRY BULK TRADE (MILLION TONNES)



CHINA GDP STEEL INTENSITY (TONNES STEEL PER USD MILL.)



GLOBAL ENERGY MIX (EJ/YR)



Source: AXS Marine, Clarksons, DNV GL, Wood Mackenzie World Bank, Danish Ship Finance

DEMAND DEEP DIVE: CHINA'S RACE FOR ENERGY INDEPENDENCE

China's carbon neutrality plan for 2060 will not only reduce carbon emissions, but also change the Dry Bulk market

China's plan for carbon neutrality by 2060 will pave the way for energy independence. The upcoming five-year plan will lay out China's vision for a complete transformation in how the country produces, transports and consumes energy. This is expected to have a negative impact on coal and iron ore demand and reshape supply chains.

CHINESE DEPENDENCE ON FOREIGN COMMODITIES

Today, China is highly dependent on imports of energy and metal commodities. It imports around 40%, 64% and 80% of its coal, bauxite and iron ore supply, respectively. In China's upcoming 14th five-year plan (2021-25), the government seems determined to use future innovation in energy efficiency and the circular economy to transform its demand for natural resources. Emerging green technologies within electrofuels, energy storage and high-energy-density batteries could increase the country's energy independence while lowering carbon emissions dramatically.

A FRONT-RUNNER IN THE PRODUCTION OF VITAL RENEWABLE TECHNOLOGY

Most non-ferrous metals for zero-carbon technology are processed in China. Thus, three-quarters of global lithium-ion battery production, half of all electric vehicles, and 70% of the world's solar panels are made in China. As a result, around 66% of all traded non-ferrous metals reach Chinese ports, which drives 5% of all Dry Bulk demand – primarily employing Panamax and Handymax vessels. Volumes of non-ferrous metals could increase by around 70% when China's investments in renewable technologies materialise.

ELECTRIFICATION IMPACTS DRY BULK DEMAND

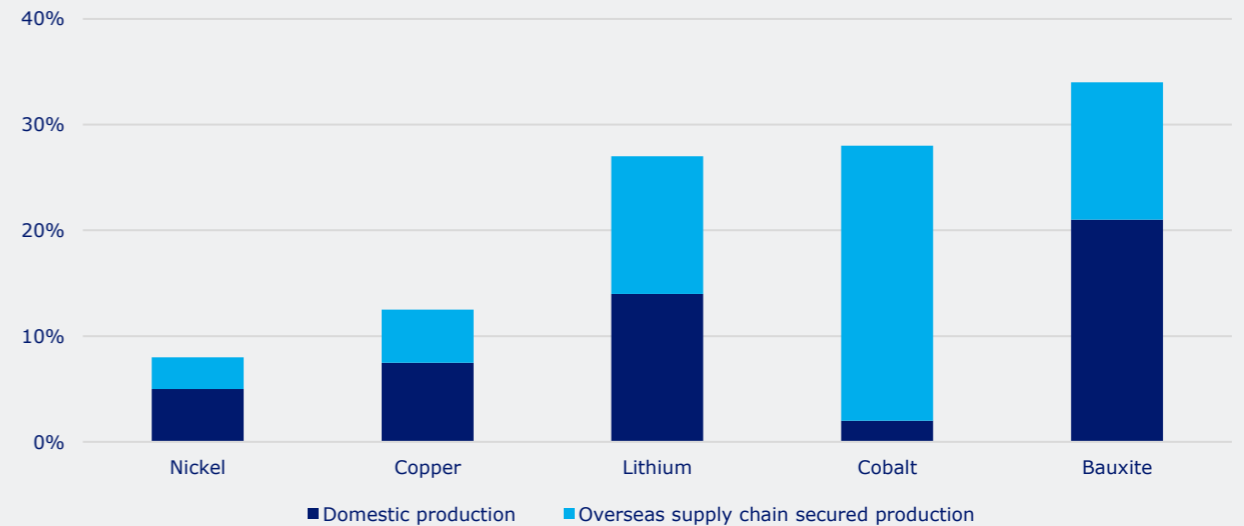
The investments in renewable technology will enable China to electrify its steel industry and economy – although this will require further technological innovation. Consequently, the country's electricity production is set to increase by 75% by 2060. This will directly impact the 191 million tonnes of seaborne coal imports, which will drop significantly. Nevertheless, the indirect effects are likely to impact iron ore even more. China produces around 60% of the world's steel, which drives demand for 1,200 million tonnes of iron ore and 41 million tonnes of coking coal annually. This accounted for 26% of all Dry Bulk demand in 2020. Increased electrification will boost the use of electric arc furnace (EAF) technology as a steel production method, which allows higher volumes of scrap steel in the steelmaking process than the basic oxygen furnace technology, where iron ore and

coking coal are the main inputs. If China reaches its target of 30% usage of scrap steel in the steelmaking process by 2025, iron ore demand will fall by around 200 million tonnes.

CHINA'S AIM FOR CONTROL OF SUPPLY CHAINS

The increased investment in renewable technologies will place China in an even more dominant position regarding trade of non-ferrous metals. The difficult part for China is to source the raw material without increasing its level of dependence. Take bauxite as an example. Bauxite is a main input in the production of wires and therefore crucial to the electrification transformation. Yet, the domestic mine output in China only provides 21% of its demand. In order to secure supply chains, China has invested in bauxite mines in Guinea, which has led to a surge in Chinese imports. Meanwhile, the share of Chinese-owned vessels transporting bauxite to China increased from 15% of all imports in 2017 to 21% in 2020. This highlights the risk of controlled transportation, which lowers demand growth for Dry Bulk vessels owned by others. Nevertheless, China's vision to become carbon neutral could completely alter the demand drivers for the Dry Bulk market.

NON-FERROUS METALS PRODUCED BY CHINA (SHARE OF GLOBAL PRODUCTION)



Source: AXS Marine, Clarksons, MIIT, Wood Mackenzie, Danish Ship Finance

CRUDE TANKER



CRUDE TANKER

A market recovery has begun, but growth in vessel supply needs to slow

After a steady month-on-month rebound towards the end of 2020, global oil demand plateaued in Q1 2021 as Covid-19 related restrictions around the world tightened. The impact on Crude Tankers has been massive, as the demand reduction has mostly been balanced by OPEC production cuts. This is weighing heavily on the VLCC market in particular. Demand for vessels is set to return strongly as summer approaches, but we expect the oversupply of vessels to prevent any extended surge in freight rates in 2021. Based on expectations that scrapping will offset deliveries in 2021 and 2022, we expect the market to rebalance sometime in the second half of 2022.

FREIGHT RATES AND SECONDHAND PRICES

Since our last report in November, spot earnings have remained soft for the most part, with some periods of higher rates seen primarily for smaller and fuel-efficient vessels. Ship prices have been rising due to positive sentiment in the wake of vaccine rollouts, but low timecharter rates indicate that the market is likely to be unbalanced during the next 12 months.

VLCC: A steady flow of vessels returning from floating storage coupled with strict oil production cuts in countries exporting crude oil on VLCCs has caused the segment to struggle more than the smaller vessel segments. Timecharter rates have decreased 10% in 2021, while secondhand values increased 10%. The one-year timecharter rate is USD 22,500 per day, while the five-year-old secondhand price was USD 69 million in April.

Suezmax: This segment has been greatly impacted by the weak oil demand and growth in the active fleet, but demand for smaller parcel sizes has offered some

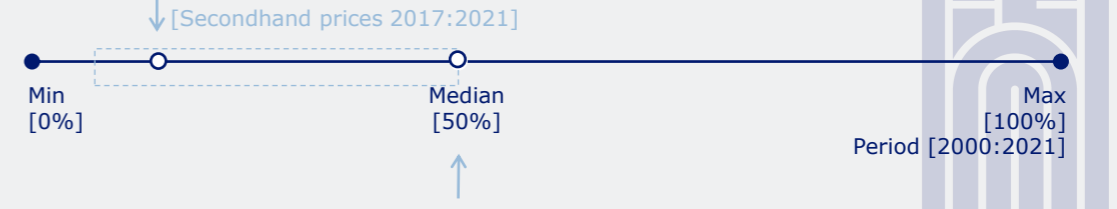
VLCC trades to Suezmaxes. Timecharter rates have risen 7% in 2021, while secondhand prices are up by 3%. The one-year timecharter rate is USD 17,500 per day, while the five-year-old secondhand price was USD 45 million in April.

Aframax: Strong LR2 demand and a rise in non-OPEC output has offered some respite for a troubled market. This has resulted in a 21% increase in five-year-old secondhand prices in the past six months. The one-year timecharter rate is USD 16,000 per day, while the five-year-old secondhand price was USD 40 million in April.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – APRIL 2021

Freight rates are close to the median, and have increased by 5% in the past six months



Secondhand prices are low, but have recovered 3% in the past six months

Demand for seaborne crude oil dropped by 7.7% in 2020, but travel distances increased, limiting the decline to 6.7% in tonne-miles. Fleet utilisation weakened further during the period, since the fleet expanded by 3.2%, while a steady flow of vessels returned from floating storage. Utilisation improved towards the end of 2020 but has declined slightly in 2021, and is still significantly below 2019 levels.

Deliveries: 17 million dwt was delivered in 2020 compared to 28 million in 2019. Deliveries are set to rise again slightly in 2021, after 7.5 million dwt in the first four months.

Orderbook: 38 million dwt is currently on order, unchanged from the start of 2020. This represents 9% of the fleet with 25% to be delivered within the next six months.

Scrapping: Just 4 million dwt has been scrapped since the start of 2020, and total demolitions in 2019, 2020 and 2021 still amount to just a third of the 17 million dwt scrapped in 2018.

Demand: Seaborne trade volumes fell by 8% in 2020, led by a decrease in demand for personal car fuel and jet fuel. Demand started to rebound in Q4 2020 but has plateaued at 5% below 2019 levels in 2021.

Contracting: Strong contracting activity towards the end of 2020 has continued in 2021. 18 million dwt has been contracted in the past eight months, compared to 7.5 million in the previous eight months.

Travel distances rose by 4% in 2020 following stable demand for long-haul cargoes to Asia, while many other trades plummeted. Average distances have shortened slightly in 2021.

MARKET DYNAMICS IN THE LAST SIX MONTHS

The rebound has been hampered by Covid-19 related restrictions being tightened again

The Q4 2020 recovery in global oil demand plateaued in Q1 2021. This kept production low in key export regions, putting further pressure on earnings in a market experiencing a significant rise in supply.

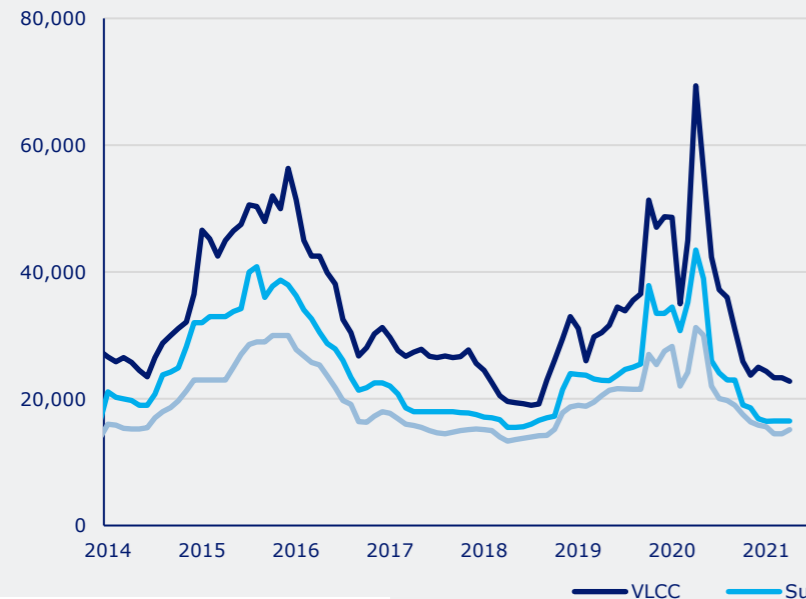
EARNINGS REMAIN LOW BUT SHIP PRICES REVEAL OPTIMISM

Spot rates have been subdued for most of the last six months, while the one-year timecharter rates have plateaued at low levels. Overall rising ship prices signal a more balanced market around mid-2022.

THE FLEET HAS CONTINUED TO GROW

The active fleet has grown by 6% in the past six months. A steady flow of vessels have returned from storage, while 9 million dwt were delivered and just 3 million dwt scrapped.

ONE-YEAR TIMECHARTER RATE (USD)



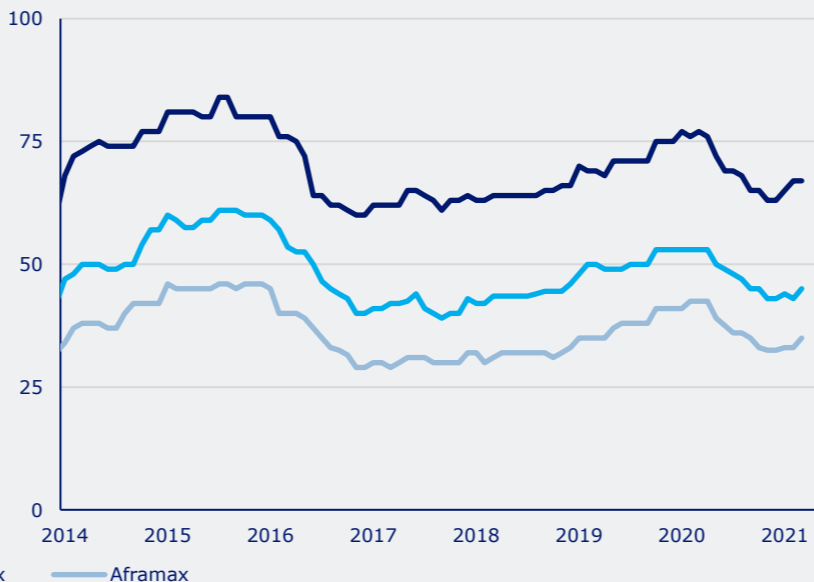
OPEC CUTS TYPIFY MARKET

The overriding impact on the Crude Tanker market has been OPEC's decision to leave production cuts in place throughout April. This has weighed heavily on VLCC earnings in particular, as Saudi Arabia has been the main contributor. The cuts mean that overall oil supply is down by 8 mbpd, but with demand down just 4 mbpd from 2019 levels, oil inventories have been drained, which may eventually prove beneficial for a quicker Tanker recovery.

DEMAND WITHIN THE OECD IS GROWING AT DIFFERENT SPEEDS

The second round of global lockdowns has not impacted mobility to the same extent as last year. Apart from jet fuel, the recovery in demand has continued for most uses of oil, but only naphtha demand is higher than 2019 levels.

SECONDHAND PRICES (USD MILLION)



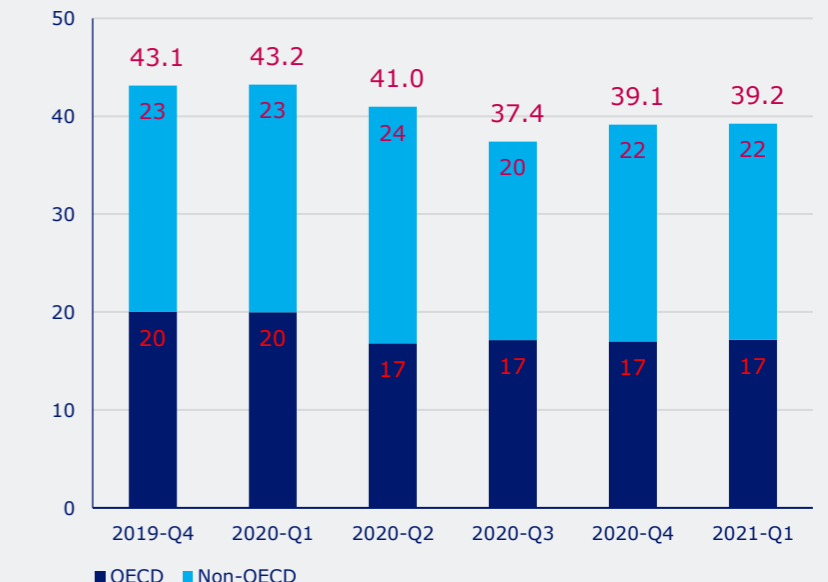
CHINA MOBILITY HAS TAKEN OVER FROM PRODUCTION DEMAND

Chinese crude oil imports have slowed slightly in 2021 as inventories are wound down, but oil demand remains strong. In the last six months, demand from production has been coupled with the return of personal mobility.

SMALLER TANKERS HAVE OUTEARNED LARGER VESSELS

Aframax Tanker prices have soared by 21% in the past six months in the wake of Libyan exports returning, but also due to increased shielding from LR2s as Middle Eastern oil product exports have surged. In large parts of the past six months, Aframax and Suezmax Tankers have outearned VLCCs, which are suffering severely from the low OPEC exports that cover 80% of VLCC volumes.

SEABORNE CRUDE OIL IMPORTS (MBPD)



Sources: Clarksons, Axs Marine, Danish Ship Finance

SUMMARY: CRUDE TANKER MARKET OUTLOOK

Eyeing the light at the end of the tunnel

The Crude Tanker market is set for a massive rebound in demand as summer approaches, but we expect the past six months' expansion in active supply to prevent any extended rise in freight rates. Going forward, deliveries in the rest of 2021 and in 2022 may be offset by scrapping, stoking hopes for a rebalancing in the market as demand surpasses 2019 levels in H2 2022.

RISING SUPPLY REQUIRES DEMAND TO RETURN MORE SWIFTLY THAN OUTLINED

In the short term, OPEC's decision to hike oil production and a slight return of other producers will increase cargo movements and overall fleet utilisation. However, we still expect excess vessel capacity to prevent freight rates from surging in 2021.

A MORE STABLE GEOPOLITICAL OUTLOOK MAY NOT BE GOOD FOR TANKERS

The past 12 months have strengthened OPEC and demonstrated the effectiveness of the organisation, which reduces the chances of another surge in floating storage. In addition, the potential lifting of US sanctions on Iran is a grey swan that would inflate the active fleet by restoring around 10 million dwt from illicit trades or idle vessels. A rise in Iran's oil production could potentially flood the market (about a year after relief of sanctions), but it is far more likely that OPEC would balance output by making additional cuts.

STRONG MEDIUM-TERM VLCC DEMAND OUTLOOK

Moving past the bleak short-term outlook, we expect the VLCC market to gradually recover as OPEC production rises. 40% of refinery expansion between 2021-2026 will take place in Asia, which will primarily boost VLCC demand. Any increase in North American and other non-OPEC production is likely to weaken the VLCC market, but we expect shale production to be significantly subdued for at least the next 24 months. The other 60% of refinery expansions will mostly lead to reduced cargo volumes carried by Suezmax and Aframax Tankers but also VLCCs, as the majority take place in oil-exporting countries.

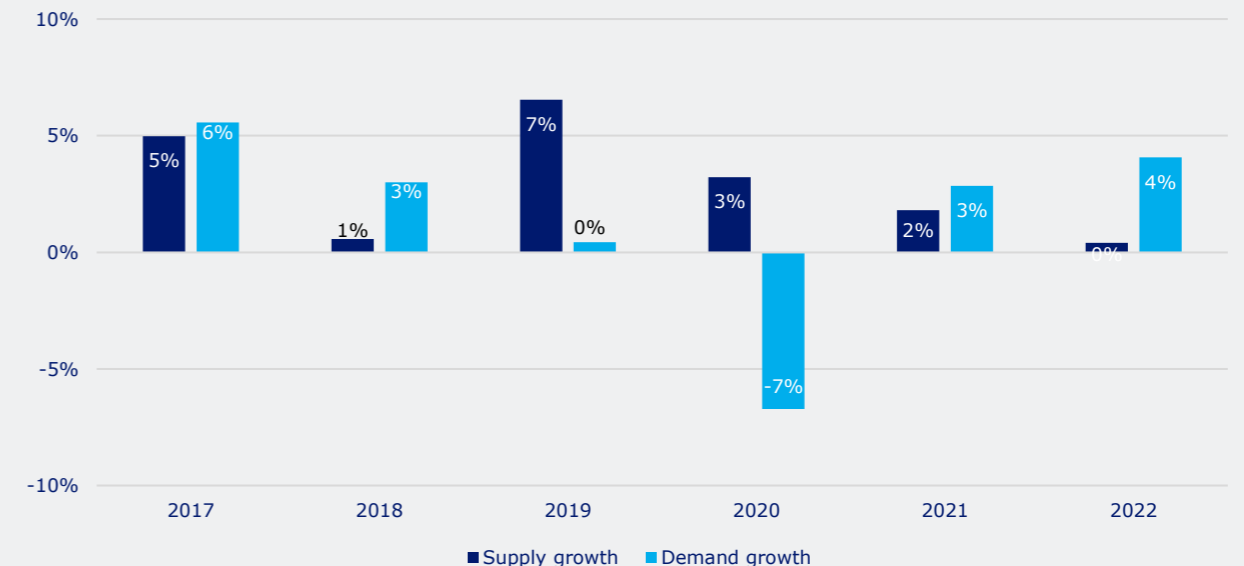
SCRAPPING ACTIVITY NEEDS TO ACCELERATE FOR DEMAND TO CATCH SUPPLY

Ordering of VLCCs and Suezmax Tankers soared between November and April, creating additional pressure for oil demand to rebound faster than anticipated or demolition activity to rise. We see a base case for 7% of the total fleet to be scrapped by 2022, which would slow fleet growth from year-end 2019 to 5.5%.

OWNERS NEED TO PREPARE FOR PEAK OIL

Just 40-45% of all crude oil is transported by sea. The production location therefore plays a significant role in predicting the long-term development in Crude Tanker demand. We believe North American production will be the first to descend when the peak in oil consumption reaches. This will have a small impact on seaborne volumes but significantly hurt Aframax Tankers. On the other hand, OPEC, and especially the Middle East, may be the winners given their low production costs. This will benefit VLCCs, as the long-term outlook is likely to be driven by long-haul crude trade, while expanding refinery capacity close to production sites may flip more Aframax and Suezmax trades to Product Tankers.

THE SUPPLY AND DEMAND BALANCE (DWT AND TONNES)



Sources: Clarksons, Danish Ship Finance

CRUDE TANKER FLEET OUTLOOK

Positive fleet outlook assuming scrapping does not stay muted

The initial impact on demand from Covid-19 related restrictions being lifted may be massive, but the active fleet is now 4.5% larger than in end-year 2019. Anything less than a full rebound, will keep pressure on the market.

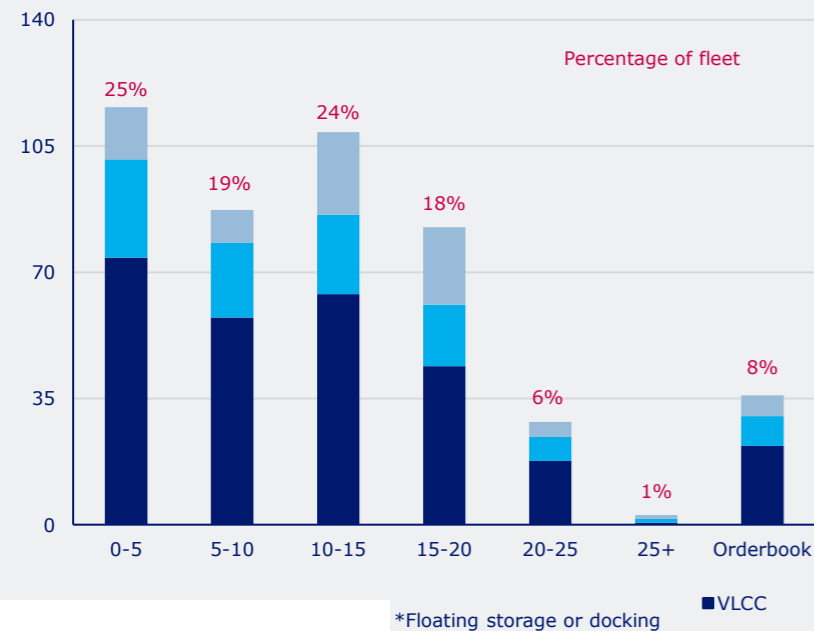
SURGE IN VESSEL ORDERING IS SHORT-TERM

The recent uptick in contracting activity is likely to be short-lived. We believe it is a reaction to a combination of newbuilding prices being low despite sky-high steel prices, and expectations of short-term rise in scrapping activity.

ORDERBOOK IS LOW BUT RECENT RISE IS WORRYING

Steady deliveries have resulted in the smallest orderbook since 2013. However, 18 and 20 million dwt are due to be delivered in 2021 and 2022, lifting the fleet 12% above year-end 2019 levels if no more vessels are scrapped.

AGE DISTRIBUTION (MILLION DWT)



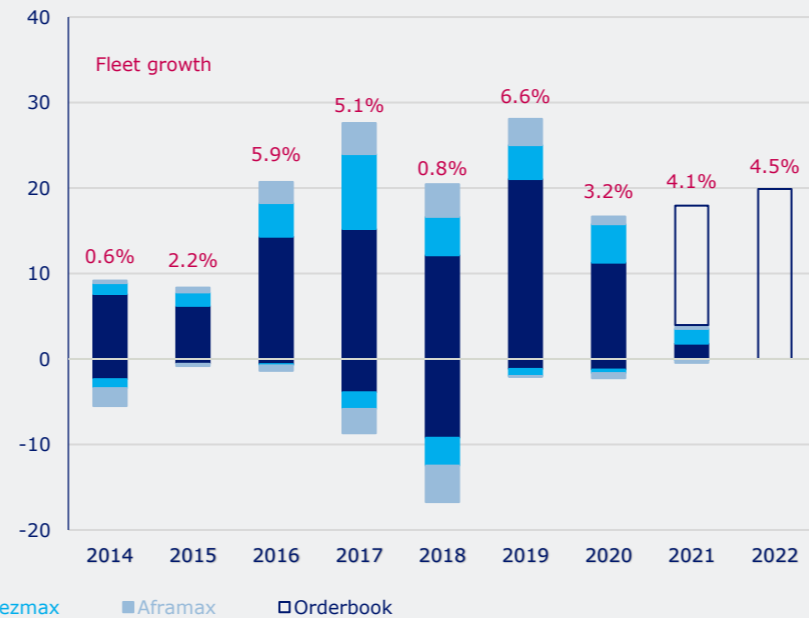
LARGE INFLOW OF AFRAMAXES IN 2021

Unsurprisingly, VLCCs constitute the majority of the orderbook. Asia is the only region to keep growing crude oil imports and 70% of seaborne crude oil imports to Asia is carried on a VLCC. However, in the rest of 2021, there will be an inflow of Aframax Tankers corresponding to 4% of the fleet. This is somewhat alarming due to the bleak outlook for typical Aframax trades and intense competition from LR2s. However, a significant amount of Aframax Tankers are likely to be scrapped in 2022.

THE ACTIVE FLEET WILL BE SUBSTANTIALLY HIGHER

We expect the fleet to be much less affected by temporary fleet contractions in 2021-22 than in 2019-20. Our predictions indicate reductions of 5% and 3.5% on

FLEET DEVELOPMENT (MILLION DWT)

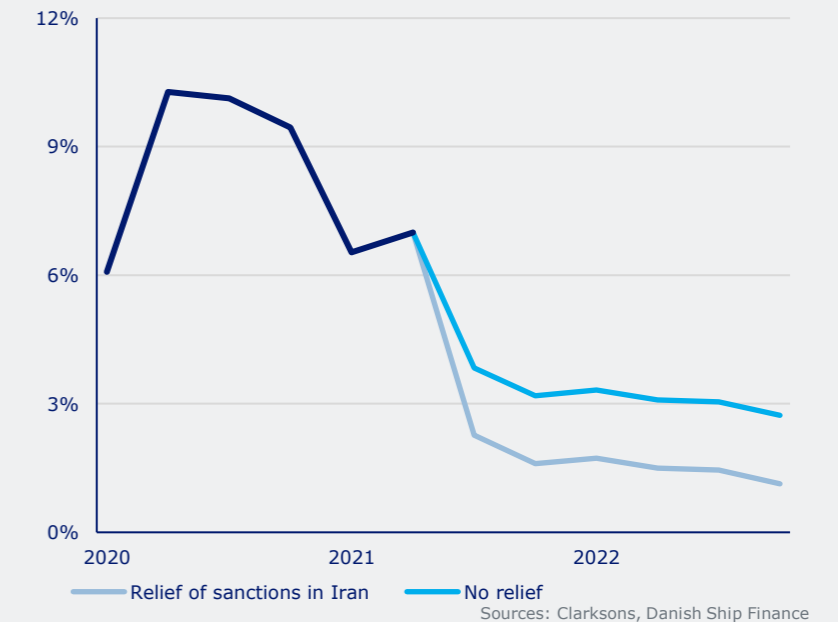


average in 2021 and 2022 due to docking and floating storage, compared to 6% and 10% in 2019 and 2020, respectively. Furthermore, port congestion seems likely to be less severe, as China is unlikely to buy excess oil to the same extent. A lifting of sanctions on Iranian Tankers is a grey swan that we believe could potentially occur in H2 2021. This would limit contractions in supply to 4% and 1.5% in 2021 and 2022, assuming that 20% of Iranian Tankers would be scrapped after sanctions are revoked.

SCRAPPING MAY RESTORE MARKET BALANCE IN MEDIUM-TERM

We see a base case for 9.5 and 18 million dwt being demolished in the rest of 2021 and 2022. This would bring fleet growth down to CAGR 1% in 2021-2022, which lights a hope a rebalance in the market in H2 2022.

SHARE OF FLEET CONSIDERED INACTIVE* (%)



FLEET DEEP DIVE: SCRAPPING ACTIVITY

All indications are for a boom in scrapping

After reaching a record-high 17 million dwt in 2018, scrapping was muted in 2019-20 due to periods of very strong earnings. We expect demand for seaborne crude oil to stay below 2019 levels at least until mid-2022, which will signal the need for scrapping to rise.

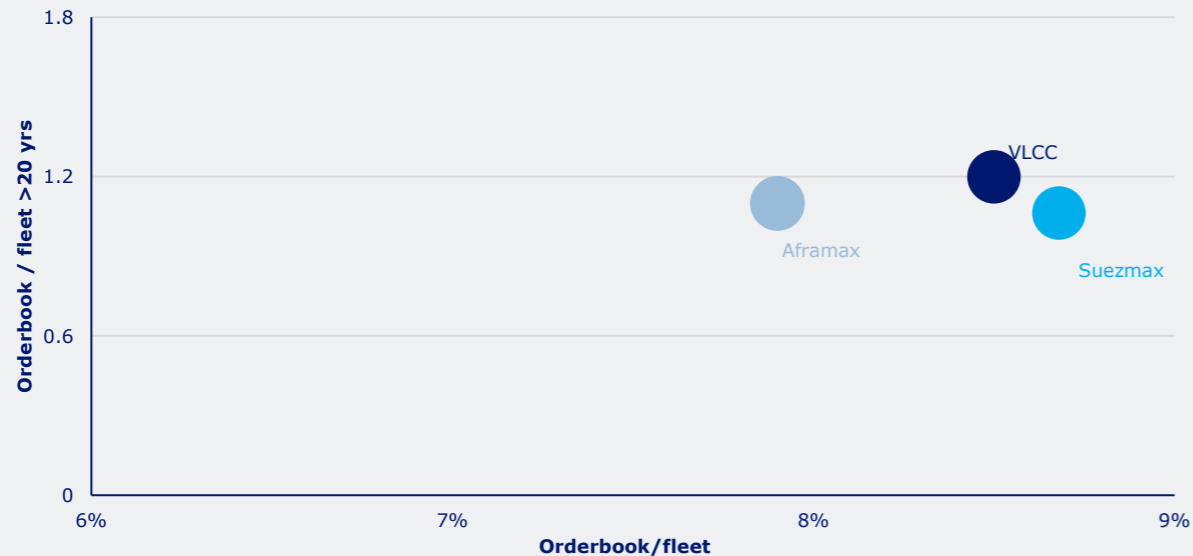
ECONOMICS POINT TOWARDS A SCRAPPING BOOM

We believe the rationale for scrapping can be boiled down to two factors: policy compliance and low earnings. A major reason for scrapping activity stalling has been high values for vessels aged over 15. In 2021, extremely low earnings and steep bunker prices have raised the premium on freight rates for young vessels massively, while record steel prices have inflated scrapping prices to a ten-year high. This has cut the premium on a 15-year-old VLCC relative to its scrap value by 22%. Recent policies put in place to lower emissions will raise scrapping but are unlikely to have an impact in the next 24 months.

COMPLIANT SCRAPPING IS STILL EXPENSIVE FOR EUROPEAN VESSELS

The EU Ship Recycling Regulation requires all vessels sailing under an EU Member State flag to use an approved ship recycling facility. The aim of the regulation is to ensure that

FLEET RENEWAL POTENTIAL (DWT)

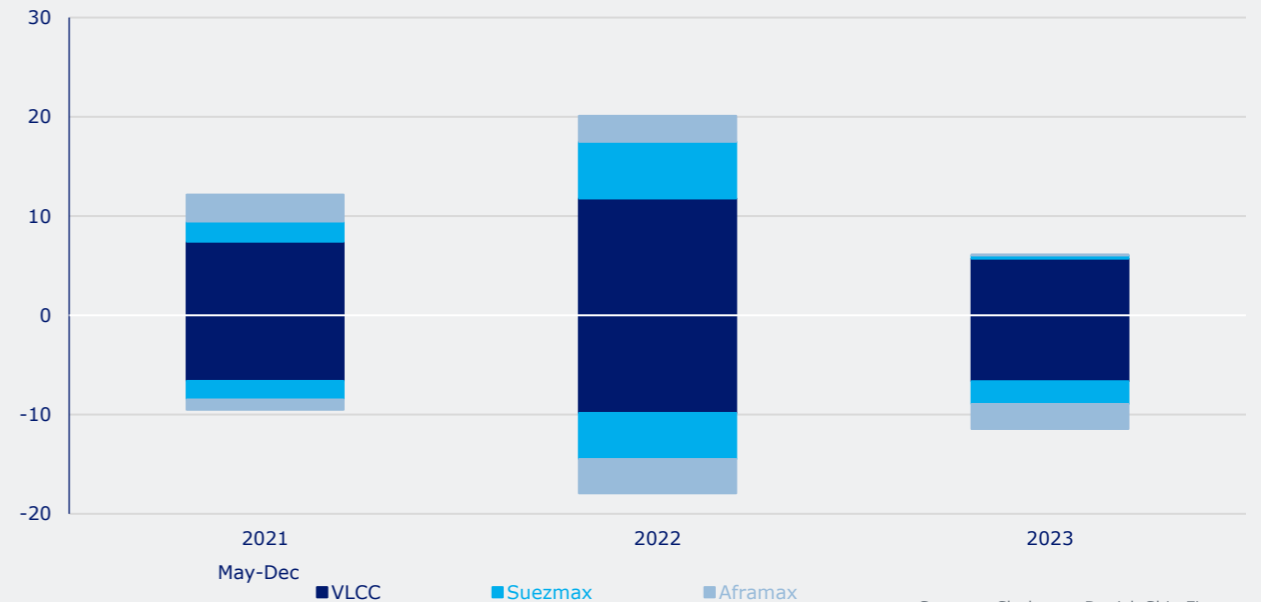


ships are recycled in facilities that are safe and environmentally sound, but the offered scrap price is often seen to be 50% lower than at non-approved facilities. This tends to complicate scrapping decisions for the almost half of the fleet owned by Europeans. Many European owners are sailing with non-EU flags which reduces the effect of the regulation to the tune where only 15% of European-owned vessels have been scrapped at approved facilities since 2019. We suspect growing pressure to scrap in compliance with regulations, coupled with another trend of a growing market for undisclosed sales for less regulated voyages, has stalled scrapping significantly and will continue to do so.

FOURTH OR FIFTH SPECIAL SURVEY WILL BE THE OBVIOUS TIME FOR SCRAPPING

Disregarding the above for a moment, we argue that scrapping will have to accelerate in 2021-22 for the market to rebalance. In a low freight rate environment, special surveys for ageing vessels present obvious opportunities for scrapping. Moreover, the deadline for installing a BWMS is approaching, which in most cases are done in conjunction with a survey and would be costly for a 20-year-old vessel. 6.9% of vessels are due for their fourth (or higher) special survey by the end of 2022, of which just 10% have a BWMS.

SCRAPPING EXPECTATIONS (MILLION DWT)



Sources: Clarksons, Danish Ship Finance

CRUDE TANKER DEMAND OUTLOOK

No full recovery in 2021

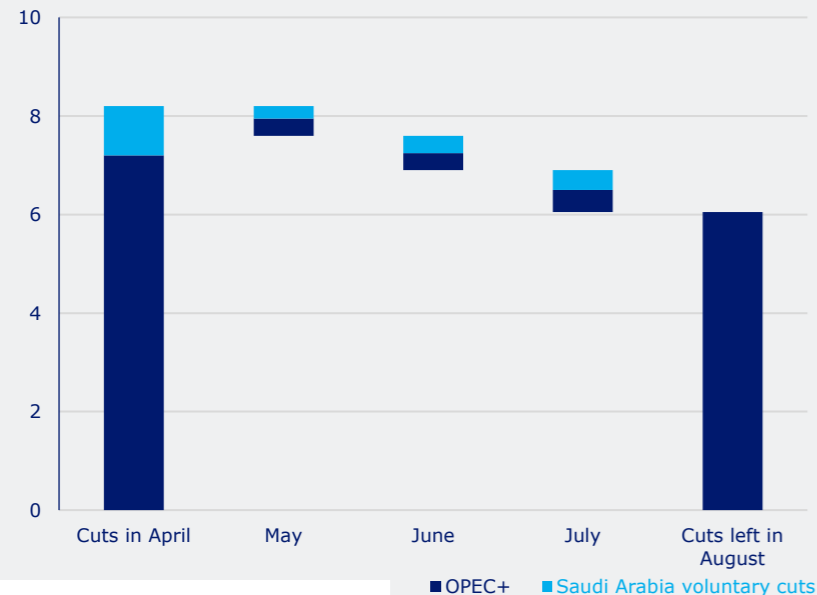
Increasing mobility and economic growth will benefit Crude Tankers, but slow vaccination rollouts in key regions and excess inventories seem to keep demand below 2019 levels until mid-2022.

NO SHORT-TERM SURGE IN SEABORNE OIL TRADE

OPEC's decision to gradually hike oil production until the end of July 2021 (by 2.1 mbpd) is good news for Tankers but still seems to leave oil production 5-6% below 2019 levels. Rocketing oil demand and more normal inventories as restrictions are lifted in H2 2021 will put pressure on OPEC to ease cuts further to keep oil prices from soaring.

OPEC+ STRATEGY IS RISKY BUT SEEMS TO BE WORKING

OPEC+' strategy allows outside producers to return, but despite a 60% increase in the number of active US rigs OPEC+ PLANNED EASING OF PRODUCTION CUTS

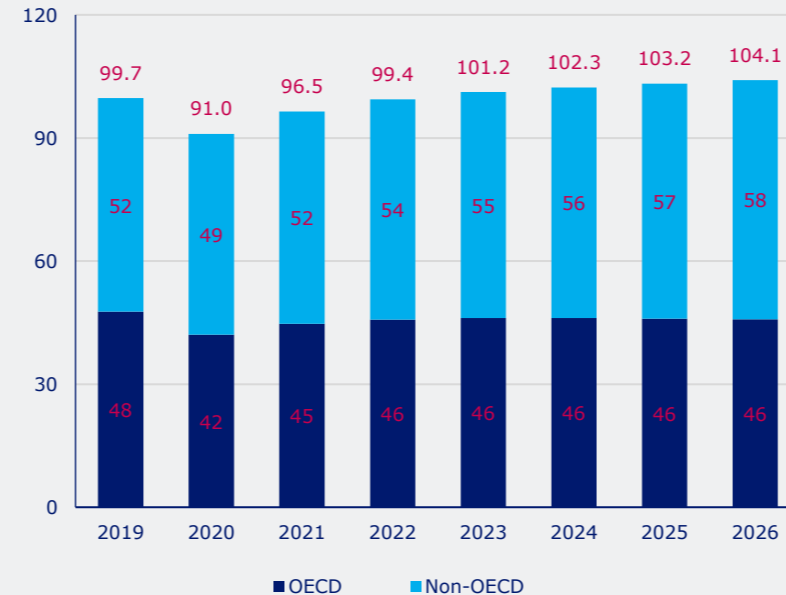


over the past six months, the shale production is 1.5-2 mbpd below the 2019 peak and we believe it will remain low for at least the next 24 months. Output from other producers that are exempt from output cuts may grow slightly. We expect OPEC+ to balance out the market. This seem to aid VLCC demand but reduce overall tonne-miles.

CHINESE DEMAND: WEAK SHORT TERM, STRONG LONG TERM

Chinese oil demand may grow 5-6% in 2021, but steep oil prices and an assumed elevation in undisclosed inventories could keep seaborne imports below 2020 levels. In the longer term, Chinese refineries will expand by 7% up to 2023. We expect this to mainly benefit VLCCs.

NON-ASIAN REFINERY EXPANSION IS BAD FOR CRUDE TANKERS



Asia, mainly in oil-exporting areas. This may reduce Crude Tanker demand markedly, especially on routes to the OECD, where refinery capacity and demand is contracting.

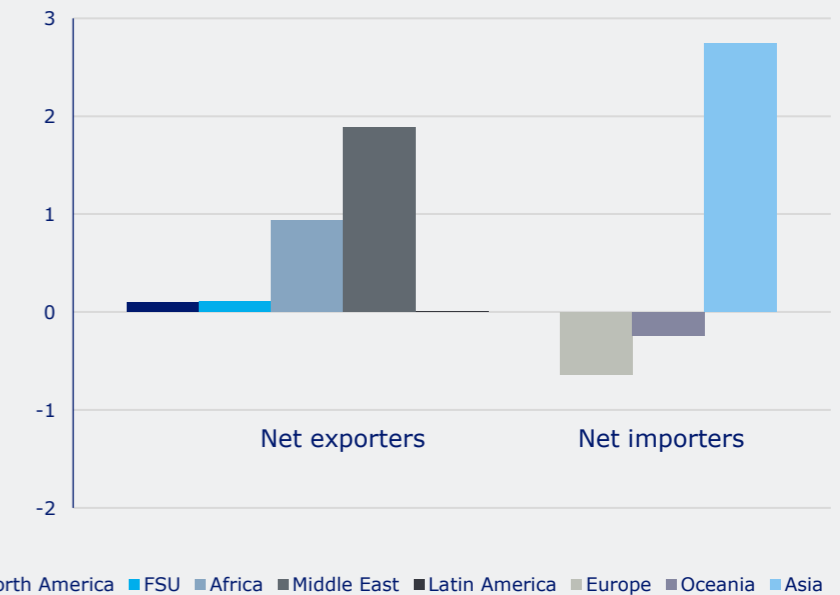
AMBIGUOUS OUTLOOK FOR AFRAMAX CRUDE TANKERS

OECD oil demand seems to be past the peak, which will exhaust key Aframax trades. Meanwhile the large LR2 fleet may cap freight rates. Rising Libyan and Canadian exports benefit Aframaxes, but the overall outlook seems difficult.

RETURN OF IRANIAN OIL PRODUCTION IS BAD FOR TANKERS

We believe the potential return of 1.5-2 mbpd of legitimate Iranian oil would be net negative for Crude Tankers, as it would be met by OPEC cuts while inflating vessel supply. In contrast to most OPEC oil, Iranian oil is carried on national Tankers. This would reduce available cargo.

PLANNED REFINERY EXPANSION (2020-2026) (MBPD)



DEMAND DEEP DIVE: PEAK SEABORNE OIL

Seaborne oil volumes to peak later than oil consumption

Most projections assume that 'peak oil' will not occur before 2028-32, but policies and changes in consumer behaviour could speed up the process and shift the focus to the more important question of the pace of the descent.

LESS THAN HALF OF ALL CRUDE OIL IS MOVED AT SEA

Crude Tankers are not necessarily exposed to declining trade volumes when oil consumption peaks, since only 40-45% of global crude oil supply is transported by sea annually. This scenario has unfolded in the coal market, where demand peaked in 2013 but seaborne transport rose 9% between 2013 and 2018, mainly a result of strong Chinese demand for electricity and steel production. Current forecasts predict rising coal volumes up to 2023.

SLOW REPLACEMENT TIME MAY RETAIN OIL DEMAND

The transition from oil could be more gradual than that from coal. This is because 60% of oil demand is consumed for transportation, and while alternatives to gasoline and diesel do exist, the energy switch requires consumers to replace their vehicles. In the example of alternatives to coal, all energy sources deliver kwh to end-users.

HIGH-COST PRODUCTION SITES WILL EXIT FIRST

In addition to the above, we expect further respite for the Crude Tanker market from the location of oil production. High-cost producers are likely to cease production when longer periods of surplus oil production drive oil prices below a certain threshold. This is especially likely for North American unconventional oil production (shale). North

American production may continue to gain market share until around the peak in global oil consumption, but we expect it to be the first to subside. Their share of seaborne crude oil volumes should be relatively small, but larger than what we see today. The descent will mainly hurt Aframax Tankers and may be exacerbated by expanding refinery capacity in Africa and Latin America.

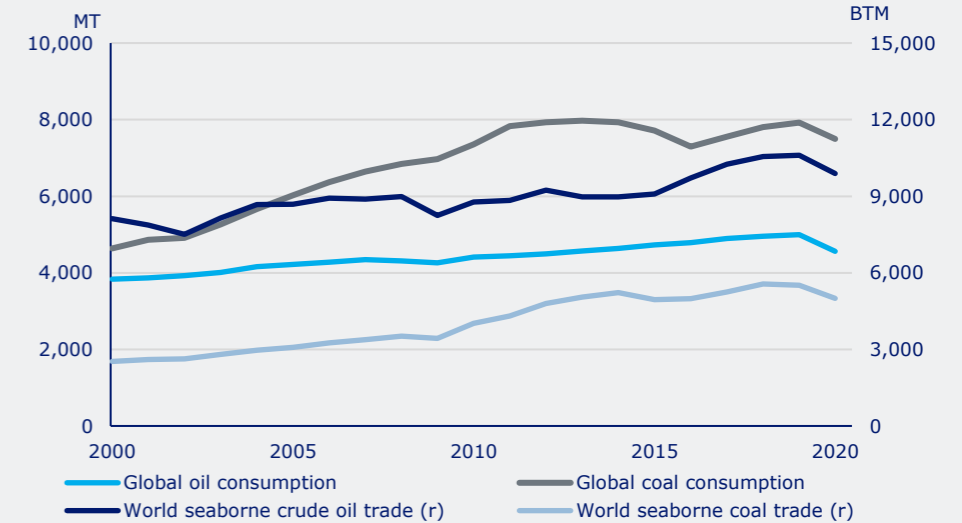
OPEC AND VLCCS MAY BE LONG-TERM WINNERS

OPEC producers may be long-term winners, as most have low production costs. This would also be hugely beneficial for Crude Tankers, as 75% of OPEC crude production is exported by sea and furthermore covers 80% of VLCC volumes. In general, we expect the market to rely even more on VLCCs, as growth areas unable to produce oil seem determined to refine themselves. The opposite is the case for Aframax Tankers. We expect a large share of these trades to be switched to Product Tankers. This is due to the trend of refining becoming a more integrated part of oil production, to limit price volatility, coupled with oil majors continuing to close refining operations in the OECD.

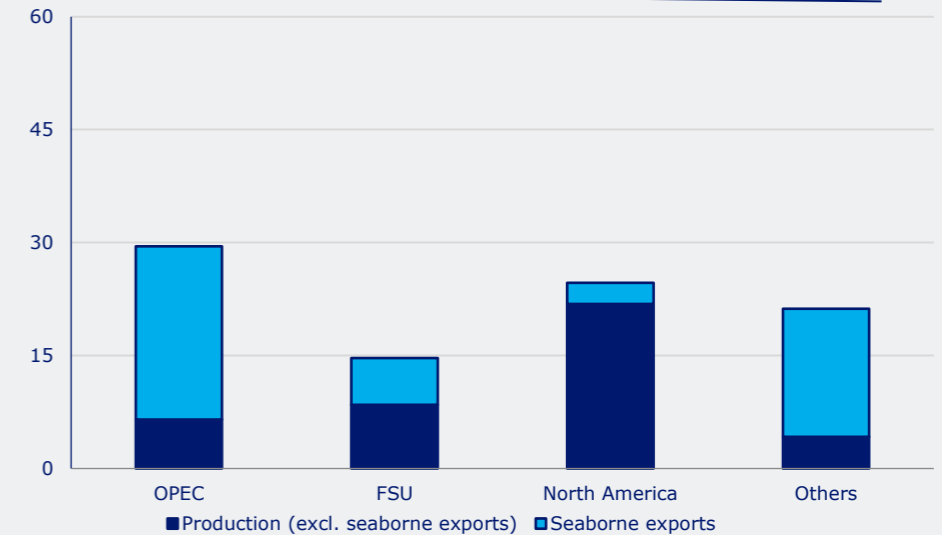
SEABORNE CRUDE OIL HAS LONG-TERM OUTLOOK

Global oil consumption is predicted to peak sometime between 2028 and 2032 while seaborne crude oil volumes are likely to peak later. This suggests that more than two-thirds of the current fleet will be candidates for demolition before volumes begin to shrink. Still, it goes without saying that vessels fueled by fossil fuels could begin trading at discounts beyond 2030 – maybe even earlier.

SEABORNE COAL AND OIL (BTM) VS CONSUMPTION (MILLION TONNES)



PRODUCTION AND SEABORNE EXPORTS



Sources: Clarksons, IEA, Axs Marine, Danish Ship Finance

PRODUCT TANKER



PRODUCT TANKER

A slow recovery following the initial rebound

Low oil demand has cast a shadow over the Product Tanker market for the past 12 months. The short-term recovery has begun, but progress is slow, being somewhat dependent on the vaccination rollout, which differs greatly between regions. Refinery capacity is moving closer to consumers and low margins have accelerated closures among OECD refineries. The latter could boost tonne-miles in the medium to long term, but the effect will be muted until oil demand rebounds in Africa and Latin America. Few new vessels are being ordered, since the highly uncertain long-term demand outlook combined with the call to decarbonise the shipping industry is increasing investment risks. Still, the dwindling orderbook is heavily frontloaded, which will put pressure on freight rates in the short term if demand fails to absorb the incoming capacity.

FREIGHT RATES AND SECONDHAND PRICES

Following our last report in November 2020, freight rates bottomed out but subsequently started to recover as positive sentiment spread in the wake of the vaccine rollout. Freight rates are still challenged, but ship prices have moved close to the median in a historical perspective. The one-year timecharter rate is now 5% higher than in November and the price of a five-year-old vessel is up by 10-20% led by LR2s.

LR2: The market is eyeing a return of key jet fuel trades as summer approaches, while hoping the strong demand for Middle Eastern naphtha continues. Secondhand prices are now 20% higher than at the start of the year. Timecharter rates are also on the rise, as the market expects a recovery in the fourth quarter 2021. The one-year timecharter rate was USD 17,250 per day in April, while the five-year secondhand price stood at USD 42 million.

LR1: This market has not seen the same recovery as LR2s, due to declining demand for this size. Timecharter rates have kept

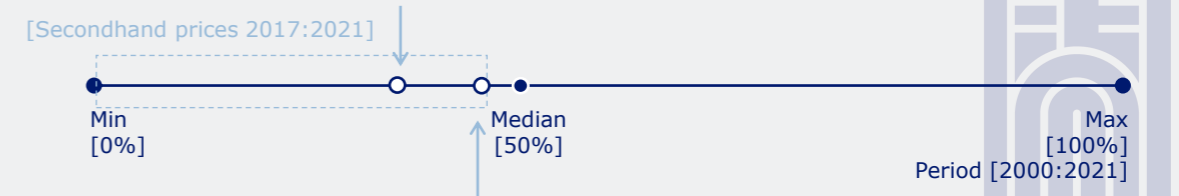
stable in 2021. Secondhand prices have risen 10%, but from low levels. The one-year timecharter rate was USD 15,000 per day in April, while the five-year secondhand price was USD 32 million.

MR: This market is the most correlated to economic recovery, and is showing the same trend with a 9% and 6% increase in timecharter rates and secondhand prices, respectively, during 2021. The one-year timecharter rate was USD 12,625 per day in April while the five-year secondhand price was USD 28 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – APRIL 2021

Freight rates are low, but have increased by 5% in the past six months



Secondhand prices are close to the median and have recovered 10-20% in the past six months

Demand for seaborne oil products dropped by 12% in 2020, but travel distances have increased, mitigating the decline to 10%. Fleet utilisation has weakened further, since the fleet expanded by 2.5%. Utilisation improved slightly towards year-end 2020 and going into 2021, but remain significantly below 2019 levels.

Deliveries: 5 million dwt was delivered in 2020 compared to 8.6 million in 2019. Deliveries seem on the rise again in 2021, with 3 million delivered in the first four months.

Scrapping: Less than 1 million dwt was scrapped in 2020, and the total amount scrapped in 2019, 2020 and 2021 combined is still less than the 2.8 million scrapped in 2018.

Contracting: Just 3 million dwt was contracted in 2020, down from 5.5 million in 2019. There was a slight increase in the fourth quarter, which has continued into 2021 with 1 million dwt ordered in the first four months.

Orderbook: 10.5 million dwt is currently on order, 5.5% less than at the start of 2019. This represents 5% of the fleet. 40% of the orderbook is due to be delivered within six months.

Demand: Seaborne trade fell by 10% in 2020, due to a decline in demand for personal car fuel and jet fuel. Demand has started to rebound in 2021 but remains 4% below the level at year-end 2019.

Travel distances surged 5% in 2020 owing to stable demand for long-haul cargoes to Asia, while other cargoes plummeted. The longer distances have been maintained in 2021.

MARKET DYNAMICS IN THE LAST SIX MONTHS

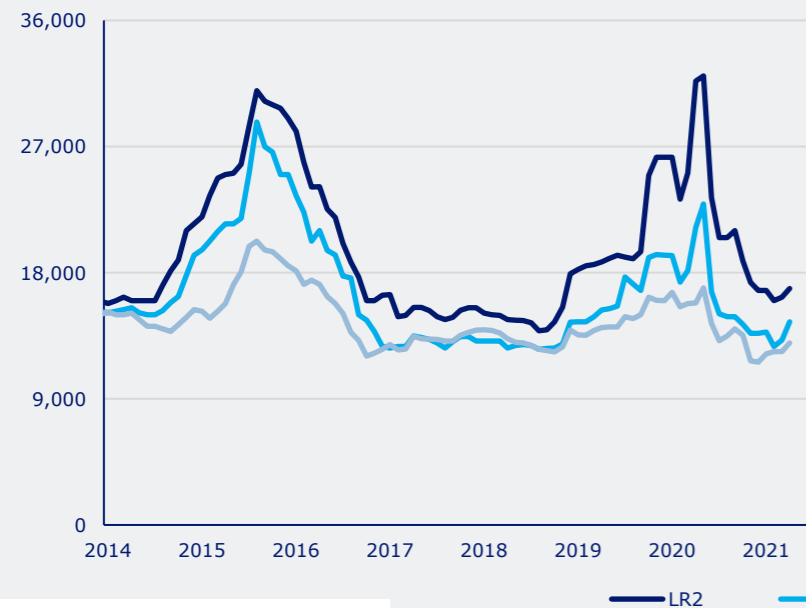
The market has been on hold, along with most of the world

In the winter, oil demand was low, due to high levels of restrictions in Europe and the US in the wake of the second and third waves of Covid-19. This held back demand for personal transportation fuels such as jet fuel and gasoline. As temperatures have become milder in the northern hemisphere and vaccination programmes have started to have an effect, demand has begun to regain some of the lost territory but is still below pre-crisis levels.

SHIP PRICES ARE ON THE RISE, BUT EARNINGS REMAIN LOW

Demand for two- to three-year timecharter contracts has boosted market sentiment. While spot earnings remain subdued, ship prices have started to recover, as owners believe the worst is over. High fuel prices have widened the earnings gap between eco and non-eco vessels.

ONE-YEAR TIME-CHARTER RATE (USD)



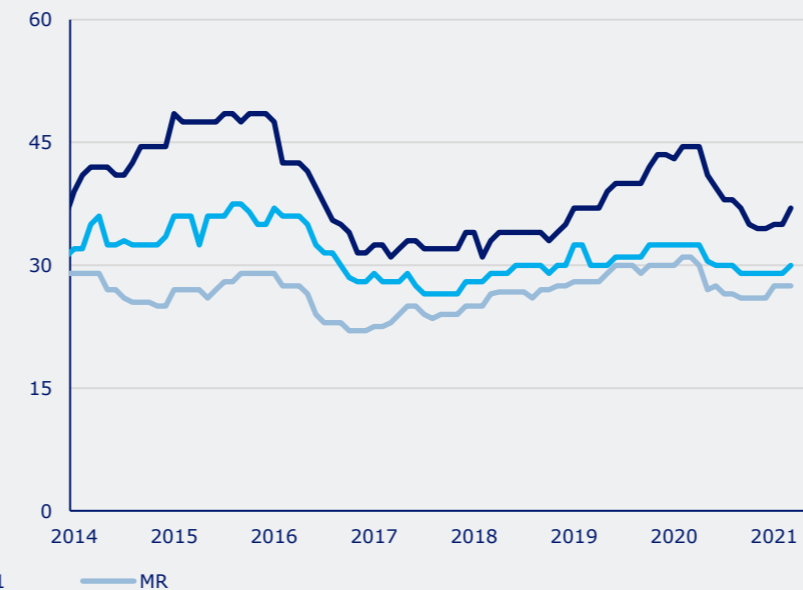
WEAK BUT IMPROVING MARKET FUNDAMENTALS

Restrictions in the OECD have continued to weigh on demand for aviation fuel and personal car fuel, but overall demand is increasing, with February exports higher than in the same month last year. High levels of crude stocks have served the refineries – making the continued OPEC cuts in April a near non-event in the Product Tanker market.

SUPPLY-SIDE MOVEMENTS HAVE CAPPED FREIGHT RATES

Overall vessel supply grew 0.8% in the last six months. 13 MR and five LR2 vessels have been delivered, while less than half of this number have been scrapped. Moreover, plateauing chemical and vegoil markets have not offered IMO-classed vessels extra trades – providing no relief for the Product Tanker oversupply.

SECONDHAND PRICES (USD MILLION)



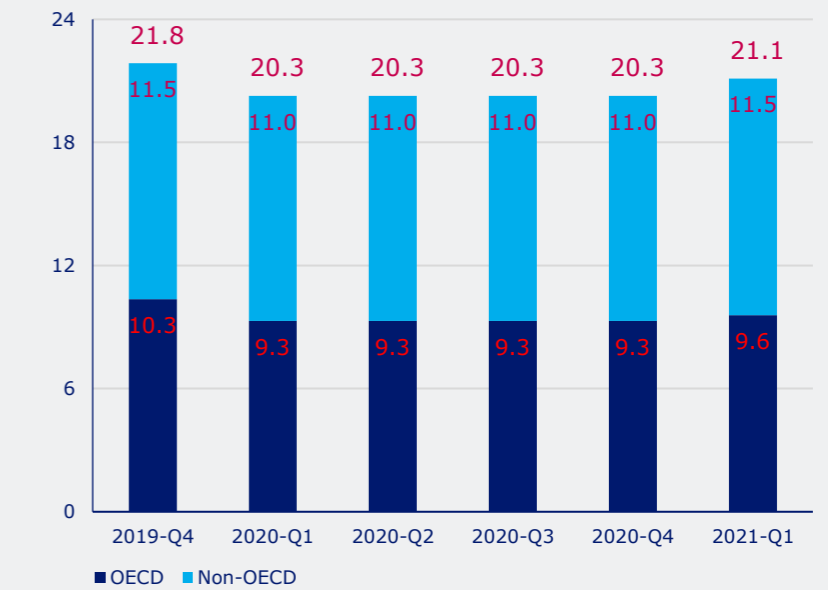
FAVOURABLE CONDITIONS HAVE FAILED TO MATERIALISE

A cold winter in the northern hemisphere spurred demand for heating oil. The weather also forced US refinery shutdowns and caused port congestion. This led to a short-term increase in tonne-miles for US and Latin American imports, while US domestic LPG demand inflated LPG prices – boosting demand for global naphtha volumes. However, vessel oversupply and elevated oil inventories as a result of the pandemic have limited the positive impact on earnings to a few well-positioned MR Tankers.

RESILIENT NAPHTHA DEMAND HAS BOOSTED DISTANCES

Overall naphtha demand has increased slightly, as demand for petchem feedstock has remained stable, while the LPG-naphtha spread has been favourable for most of the period.

SEABORNE PRODUCT TANKER IMPORTS (MILLION BPD)



Sources: Clarksons, Axs Marine, Danish Ship Finance

SUMMARY: PRODUCT TANKER MARKET OUTLOOK

The market is awaiting a recovery in oil demand in the short term and faces an uncertain refinery outlook in the long term

The global oil market faces an abundance of structural problems, both in the short and long term. This will inevitably have an impact on Product Tankers, but the outlook is not all doom and gloom. Ongoing repositioning of refinery capacity – some closer to demand but some destined to be export hubs – is bound to alter trade patterns, which could boost tonne-miles.

DEMAND IS RECOVERING BUT MAY NOT RETURN TO PRE-CRISIS LEVELS UNTIL LATE-2022

The base case for the Product Tanker market in the short term is a gradual recovery as the summer driving season approaches, economic activity returns in many parts of the world, and the winter heating season starts in November. We expect demand for road fuel in the OECD to recover as restrictions are eased, with most holidays being taken within driving distance or a short-haul flight away. Still, the impact on oil demand has varied in non-OECD countries. China has been back on track since mid-2020 and the rest of Asia followed at the start of 2021 but rising Covid-19 cases and slow vaccination rollouts in Latin America and Africa increase the probability of new cases, mutations and restrictions.

LARGE INFLOW OF NEW VESSELS IN 2021 BURDENS THE OUTLOOK

The orderbook is frontloaded and capacity equalling 4.7% of the fleet will enter service during 2021 while seaborne trade volumes start to recover the lost territory. The supply surplus will be difficult to absorb in the short term. Even if we assumed that all vessels heading for their fourth or fifth special surveys in 2021 were scrapped, the fleet would still be 5% larger than at year-end 2019, while demand is not expected to return to 2019 levels until sometime in 2022.

ECONOMIC LIFETIMES UNDER PRESSURE

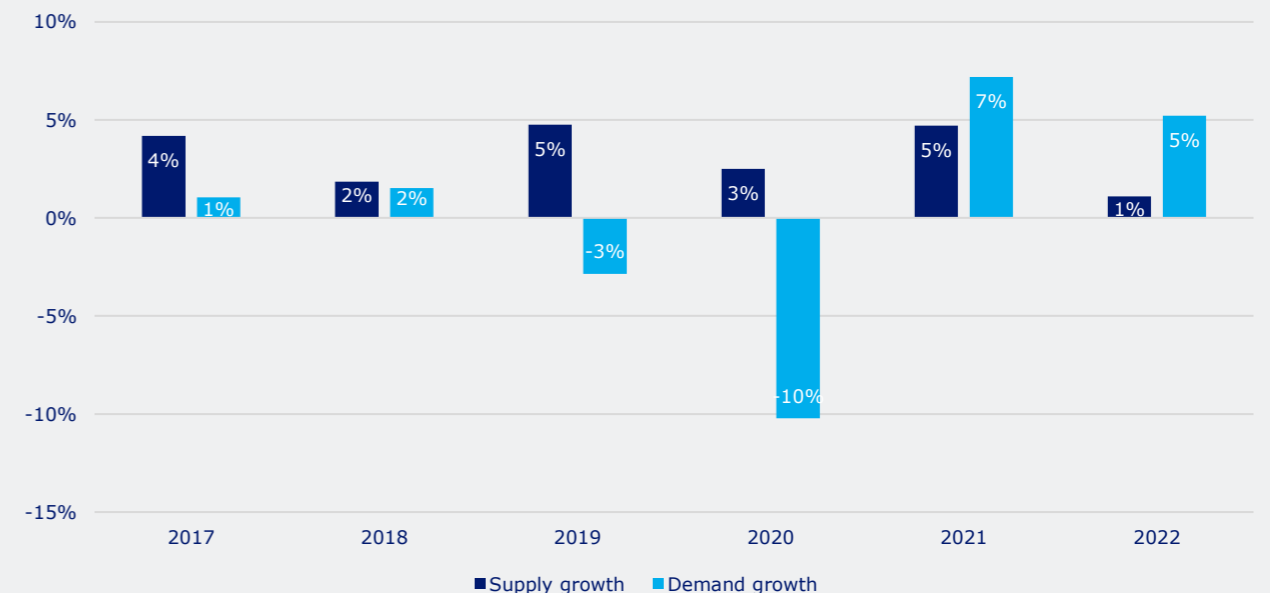
Owners' reluctance to invest in newbuilds and more traders accepting vessels older than 15 years have increased the fleet's average age to 11.7 years (+12%) since the start of 2018. This is the highest level since 2007. The trend is likely to reverse in the coming years, due to a combination of new environmental regulation (e.g. EEXI, CII) and short-term surplus capacity leading to increased demolition activity.

REFINERY RELOCATION WILL ALTER TRADE PATTERNS

Non-OECD countries continue to drive the demand outlook, but the decline in demand from the OECD has accelerated and growth is now likely to stem only from the immediate

impact of restrictions being lifted. Oil majors are relocating a lot of refinery capacity closer to demand. This will shorten distances for most trades, but reductions in OECD capacity may necessitate more long-haul OECD imports in the medium to long term. The short-term impact from the latter will be offset by low demand from areas with slow vaccination rollouts. Refinery expansions in Africa and Latin America could curb the need for OECD refineries further, but a shortage of funding and uncertainty regarding these areas' paths to lower emissions could stall decisions. The medium- to long-term outcome for Product Tankers will be negative unless OECD refinery capacity contracts ahead of demand.

THE SUPPLY & DEMAND BALANCE (DWT & TONNES)



Sources: Clarksons, Danish Ship Finance

PRODUCT TANKER FLEET OUTLOOK

Short-term pain, medium-term gain

A heavily frontloaded orderbook will continue to flood the market during H2 2021. Modest fleet growth is projected from 2022, but many vessels will need to be scrapped for the market to balance.

SHORT-TERM ORDERBOOK IS GEARED FOR DEMAND GROWTH

Six million dwt is scheduled to be delivered during the remainder of 2021, bringing the annual intake up to 7.8 million dwt, which is 3 million dwt more than in 2020. In 2022, the vessel inflow will slow to about 2-3 million dwt, reflecting the low number of orders placed in 2020.

FLEXIBILITY IS KEY FOR TANKER OWNERS

The fleet expansion is being driven by MR2 Tankers, representing 60% of the orderbook, many IMO classed.

This vessel segment offers flexibility in size and attractive triangulation options in South East Asia and South America with vegoil and chemicals.

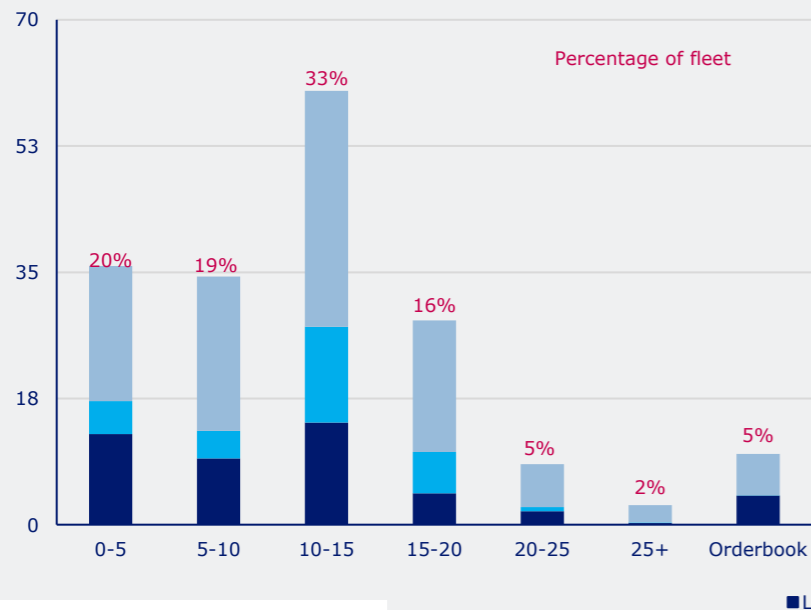
THE FLEET IS AGEING

A tight market tends to relax traders' preference for only trading vessels younger than 15 years. In 2020, many older vessels traded, while others were used for floating storage. Today, 23% of the fleet is older than 15 years, up from 13% in 2018. Vessels older than 15 years carried 14% of volumes, versus 6% in 2018. This trend is likely to reverse from 2021 onwards, when vessel availability increases, and fewer vessels are used for floating storage.

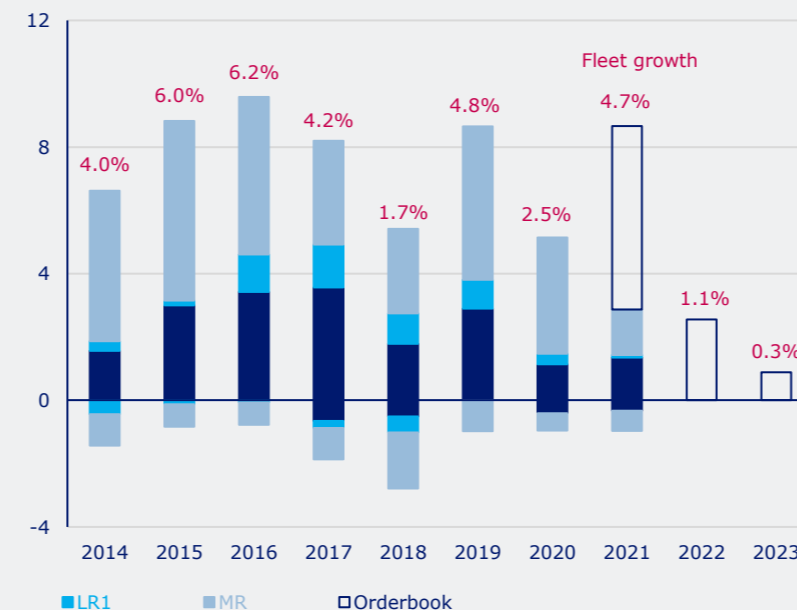
EXTRAORDINARY LEVELS OF SCRAPPING IN 2021 AND 2022

Approximately 100 vessels are approaching their fourth or fifth special surveys in each of 2021 and 2022. To illustrate the apparent overhang of supply, let us assume that they will all be scrapped. For MRs, this will offset all newbuilds entering service, while the corresponding figure for LR Tankers will be half. Fleet growth will, in this example, be reduced to 1.6% for MRs in 2021 (-1.5% in 2022) and 3.5% for LR2s in 2021 (-0.4% in 2022). In this case, the Product Tanker fleet will still be approximately 5% larger by year-end 2021 (4% at year-end 2022) than it was in 2019, while demand seems unlikely to recover until sometime in mid-2022.

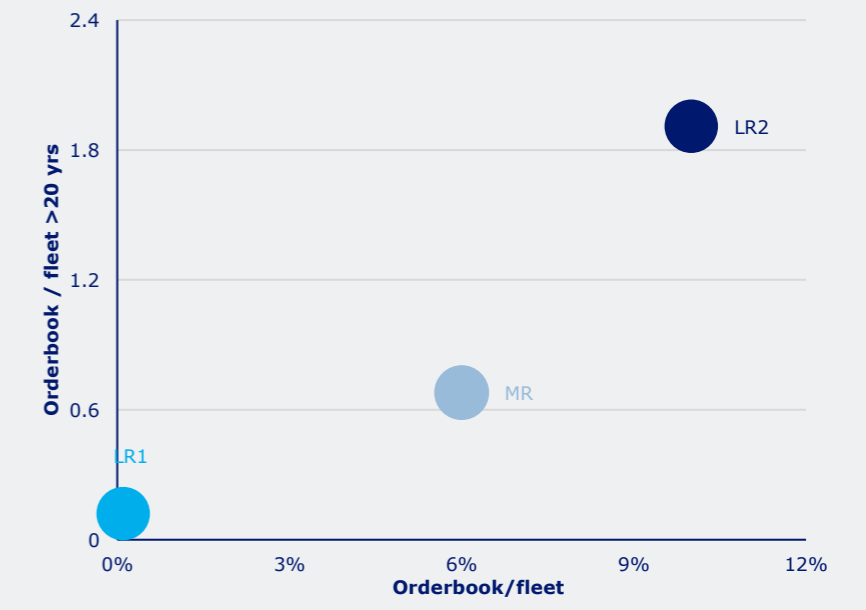
AGE DISTRIBUTION (MILLION DWT)



FLEET DEVELOPMENT (MILLION DWT)



FLEET RENEWAL POTENTIAL (DWT)



Sources: Clarksons, Danish Ship Finance

PRODUCT TANKER DEMAND OUTLOOK

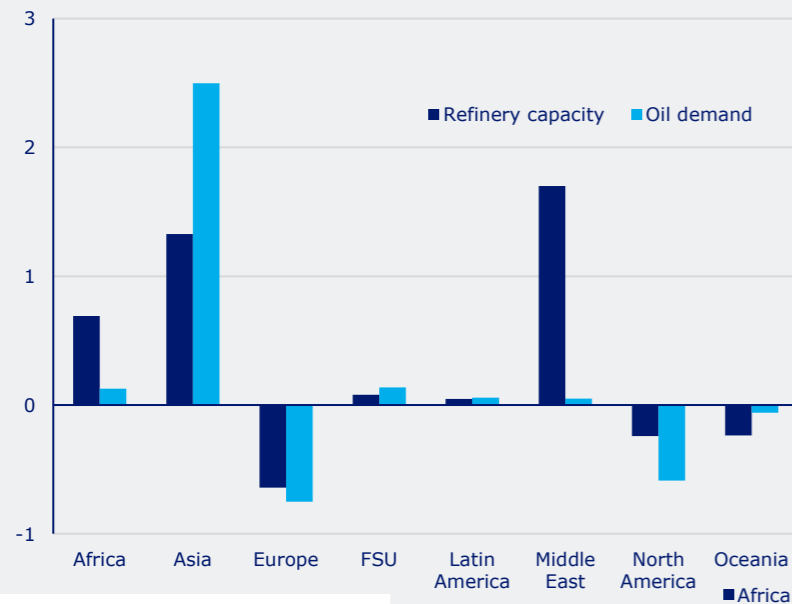
Recovery is getting closer, but uncertainty awaits

We do not expect a full rebound in demand for Product Tankers in 2021. While road fuels are expected to recover in the short term, long-distance aviation travel will remain significantly muted until sometime in 2022. More OECD-based refineries are likely to close – implying significant changes to trade patterns.

SHORT-TERM OUTLOOK REMAINS WEAK

We expect global oil demand to stay below 2019 levels until H2 2022, due to slow GDP growth following the initial rebound from restrictions being lifted. A positive effect on Product Tankers from OECD refinery closures may be offset by low demand from areas with high tonne-miles until mid-2022. We therefore expect seaborne volumes to remain below 2019 levels at least until mid-2022 as well.

EXPECTED CHANGE BETWEEN 2019 AND 2023 (MBPD)



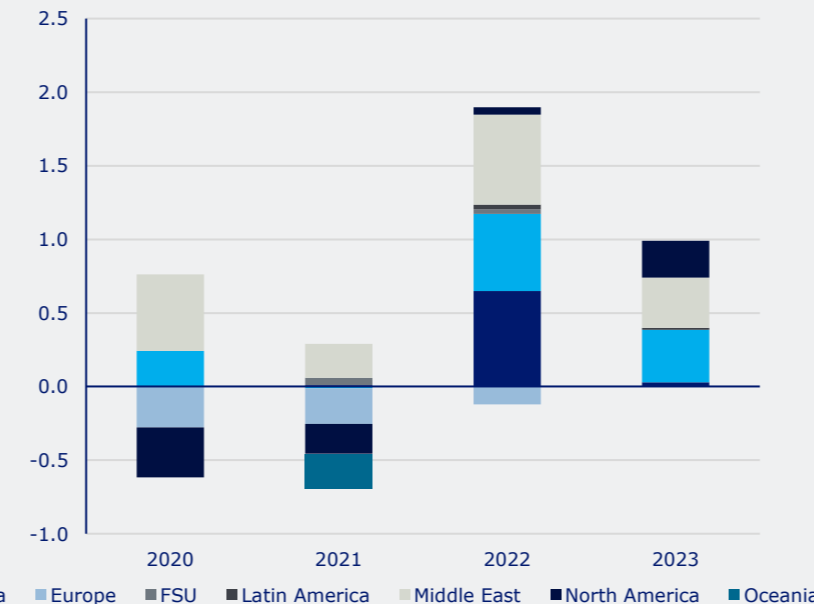
REBOUND FOR ROAD FUELS AS AVIATION REMAINS LOW

We expect government appeals for citizens to support domestic industries, the risk of virus mutations, and slow vaccination progress in developing countries to keep most OECD citizens in their own regions in 2021. This could boost road fuel demand nearer the summer but will also keep jet fuel demand low. We see some of the decline in business travel as permanent but expect tourism to normalise in 2022, restoring 85-90% of jet fuel demand.

FIERCE COMPETITION WILL FORCE MORE REFINERIES TO CLOSE

Low refinery runs and a change in the types of oil products desired as a result of the pandemic have caused the least efficient OECD refineries with capacity of 1.8-2.2 mbpd to be closed. The short-term impact seems limited to Oceania

ANNOUNCED REFINERY EXPANSION, 2020-23 (MBPD)

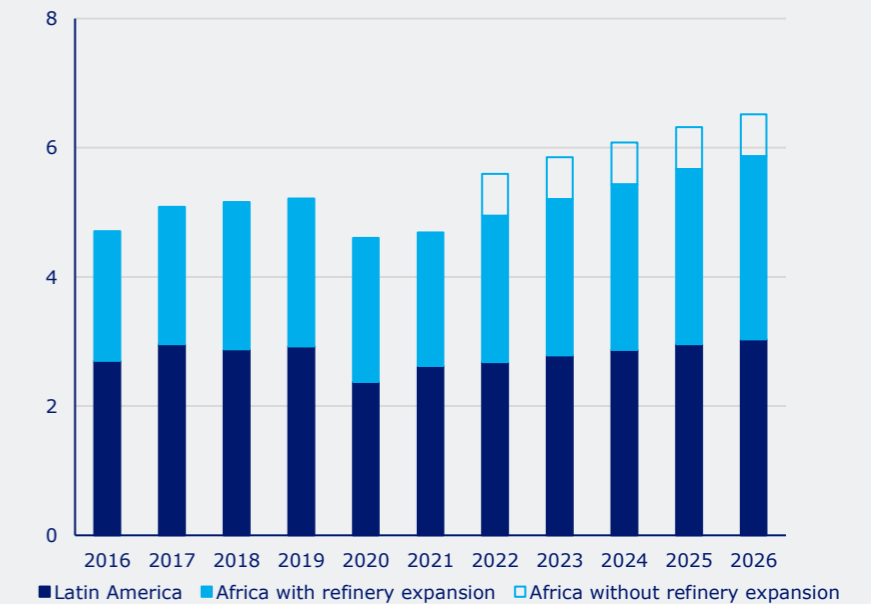


requiring 25-35 MR Tankers per month. However, we expect further closures, as pressure from Middle Eastern refineries will intensify, while most OECD governments dislike domestic refineries. This would boost distances for European, US, Latin American and African imports, but a new 650 kbpd refinery in West Africa in 2022 – as well as the fact that most of OECD have passed peak oil demand – weighs heavy on especially European oil product trade.

SLOWER ECONOMIC GROWTH IN AFRICA AND SOUTH AMERICA

Latin American and African imports represent 22-24% of volumes. Both regions are highly dependent on imports, as their refineries are outdated, but are predicted to see slow recoveries. Capacity expansion in Africa and repairment of old refineries in Latin America could further curb volumes.

AFRICA AND LAT. AMERICA OIL PRODUCT IMPORTS (MBPD)



Sources: Clarksons, IEA, Axs Marine, Danish Ship Finance

DEMAND DEEP DIVE: REFINERY OUTLOOK

Refineries are continuing to move closer to demand

In 2019 – we disregard the 2020 lows – tonne-miles for seaborne oil products were 4% higher than in 2016, while the fleet was an astonishing 25% larger. The rationale for ordering new vessels was a mix of increased parcel sizes, refinery capacity expansion being put on hold in Latin America and Africa, and increased long-haul trade as OECD countries retreated from the industry. The latter has so far failed to materialise significantly, as European refineries have proved resilient, and the shale boom has breathed new life into US refineries. However, poor earnings at OECD refineries in 2020 could be the straw that breaks the camel’s back.

DISTANCES WERE BECOMING SHORTER BEFORE COVID-19

Most capacity expansion has occurred in Asia, thereby moving closer to demand. Meanwhile most replacements following European refinery closures have been found intra-Europe. This resulted in steadily declining average travel distances during 2013-19 at a CAGR of -2%. Distances surged at the outbreak of Covid-19, as Asia absorbed excess oil products from long-haul OECD and Middle Eastern refineries.

MIDDLE EASTERN REFINERIES ARE SEARCHING FOR OFFTAKE CHANNELS

Middle Eastern refinery capacity is set to grow to 11.2 million bpd from 10 million up to 2023. Asian refinery capacity is expected to be 4-5% above 2019 levels in 2023, with demand growing 7-8%. This gap is not wide enough to cover the Middle Eastern expansion, meanwhile China also looks to diversify their oil portfolio. The Middle East is therefore relying on European refinery closures outpacing the demand reduction, as well as East African demand growth, but this effect will be small in the short term.

EUROPEAN REFINERY CAPACITY WILL BE REDUCED

The outlook for European refineries is not good. There is a risk that peak demand in Europe has passed, while new refineries in not only the Middle East but also North West Africa are increasing competition, making European exports less attractive. European refinery output (excl. Russia) accounts for 25% of Product Tanker volumes, including the 5% destined for North West Africa. Besides gasoline exports to the US, the rest is mostly inter-regional trade. If the refinery expansion in West Africa comes online, it will free up capacity at European refineries. This will tap into some of the expected growth in imports from the Middle East until this capacity has been closed too. However, European refineries’ inability to produce sufficient middle distillates could mean this is short-lived.

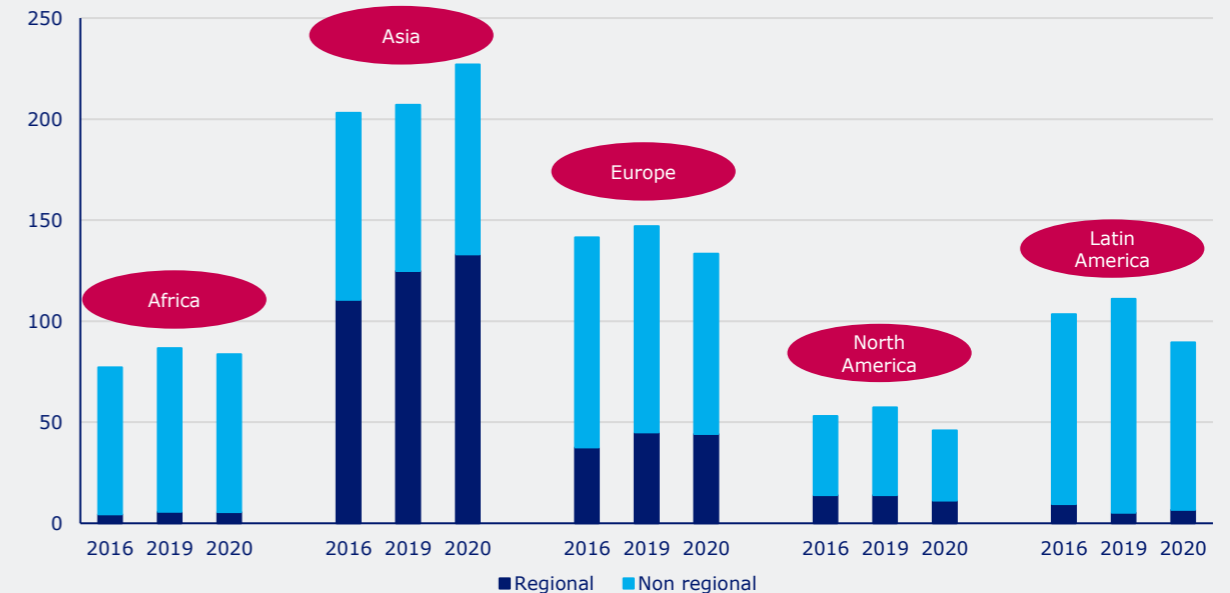
US REFINERY CLOSURES WILL HAVE A SIGNIFICANT IMPACT ON DISTANCES

In 2019-20, one in five international Product Tanker trades involved the US. The average distance was 4,300 NM, with imports travelling 20-40% further than exports. US refineries are depending on a quick rebound for the shale industry, and although current oil prices would have appealed to the old shale industry, a new breed of shale owners seem determined to avoid overinvestment. This could prove beneficial for Product Tankers, as refineries will battle with low margins, meaning reductions in capacity, in turn leading to increased US imports and longer travel distances for Latin American imports.

MR TANKERS STAND TO GAIN THE MOST

Half of all clean LR2 trades are loaded in the Middle East. This is due to growing naphtha demand in Asia. However, we expect most future naphtha demand growth to be sourced closer to consumers, meaning that LR2s may not see the full impact but will depend on the Middle Eastern expansion providing other destinations. Large MR Tankers seem to be benefiting the most from the trend of larger refineries being located closer to consumers.

SEABORNE OIL PRODUCT IMPORTS (MILLION MT)



Sources: Clarksons, IEA, Axs Marine, Danish Ship Finance

LPG CARRIER



LPG CARRIER

A volatile market is set for a recovery that will benefit modern vessels

A range of extreme but temporary factors created an unusually volatile LPG market at the beginning of 2021. The repercussions from this will keep a lid on earnings potential in the short term. Despite the current challenges, Asian demand for US LPG is set to rise, which will increase long-haul trade volumes and power a recovery in the LPG market. Large modern vessels equipped to be fuel efficient are best positioned to take advantage of the growing long-haul trade. The impending large fleet expansions in the VLGC and MGC segments are likely to generate headwinds for older vessels, as operational costs for these will increase compared to the younger competitors. In the smaller segments, oversupply persists, which may delay a recovery for these vessels.

FREIGHT RATES AND SECONDHAND PRICES

Since our last report in November 2020, VLGC spot rates have decreased by 40%, while timecharter rates have followed suit. For the MGC and SGC segments, freight rates have increased to the tune of 5-10%. The average secondhand price of a five-year-old vessel remained steady during the period, reflecting market optimism as recovering fundamentals fuel hopes for increased earnings.

VLGC: The segment is driven by just a few factors, largely US export volumes and Asian imports. Disruptions in the supply chain can create high volatility. Spot rates dropped by 66% from December 2020 to April 2021. Still, timecharter rates and secondhand prices remain well above median levels, signaling strong market expectations despite the volatility. Timecharter rates have declined by 29% in 2021 to USD 34,000 per day, while the five-year secondhand price stood steady at USD 70 million in March.

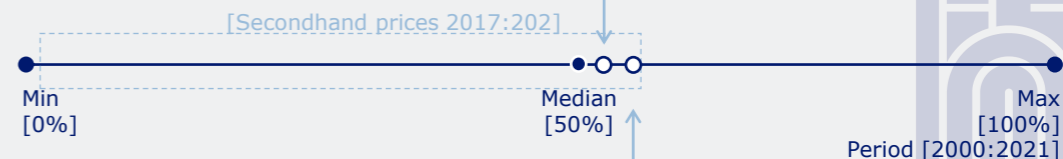
MGC: Secondhand prices have gained 9%, while timecharter rates have gained 2% in 2021. The one-year timecharter rate is USD 22,000 per day, while the five-year secondhand price stood at USD 47 million in March.

SGC: Secondhand prices have been increasing since 2016, although prices dropped 4% in 2020. Timecharter rates are low but steady.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – APRIL 2021

Freight rates are close to the median, and have increased by 9% in the past six months



Secondhand prices are above the median, and have increased 3% in the past six months

Global demand for seaborne LPG dropped by 3.5% in 2020, but travel distances increased by 4%, absorbing the decline. Fleet utilisation weakened during the year, since the LPG fleet grew by 4.5%. The supply of LPG vessels was slightly reduced by slower speeds (-1%), but the effect was counterbalanced by more vessels returning from docking (+1.7%). Freight rates declined accordingly.

Deliveries increased by 17% in 2020 versus 2019, with 3 million cbm added to the fleet. The high inflow of new vessels continued in the first 4 months of 2021.

Scrapping: Few vessels were scrapped in 2020: only 0.6 million cbm compared to 1.6 million cbm in 2019. Activity has been low during the first few months of 2021.

Contracting activity remained high in 2020 but declined slightly from 2019's peak. 2.26 million cbm was contracted in 2020. Activity accelerated at the start of 2021, with 2.1 million cbm contracted in only three months.

The **orderbook** is up by 1.3 million cbm (since January 2021) and now represents 17.5% of the fleet. 23% is to be delivered within six months.

Demand: Seaborne trade volumes declined by 3.5% in 2020, primarily driven by a 11% fall in Chinese LPG imports. In the first two months of 2021, Chinese demand returned and volumes were up 10% compared to the same period in 2020.

Travel distances increased by 4% in 2020, driven by growing LPG trade between the US and Asia. This pattern seems to be continuing in 2021.

MARKET DYNAMICS IN THE LAST SIX MONTHS

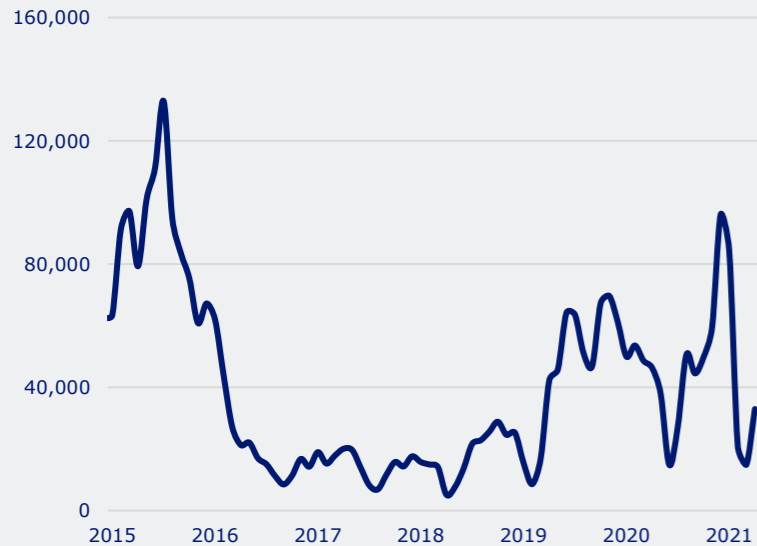
A rollercoaster ride

The LPG market has been characterised by unusually high volatility since our last report in November. Within just weeks, freight rates reached the highest level in more than five years only to drop to the lowest level in two years.

FREIGHT RATES SKYROCKETED BUT DROPPED SOON AFTER

Freight markets started 2021 on a high note. TCE earnings from The Middle East to Japan reached USD 108,000 per day – up USD 45,000 per day compared to the same period last year. The one-year timecharter rate followed the same trajectory. However, a historically cold winter storm in Texas led to disruption in cargo supply, which caused a decline in VLGC spot rates of approximately 70%. This clearly illustrates that the segment is highly vulnerable to short-term infrastructure disruptions.

TCE EARNINGS, TANURA-CHIBA (USD PER DAY)



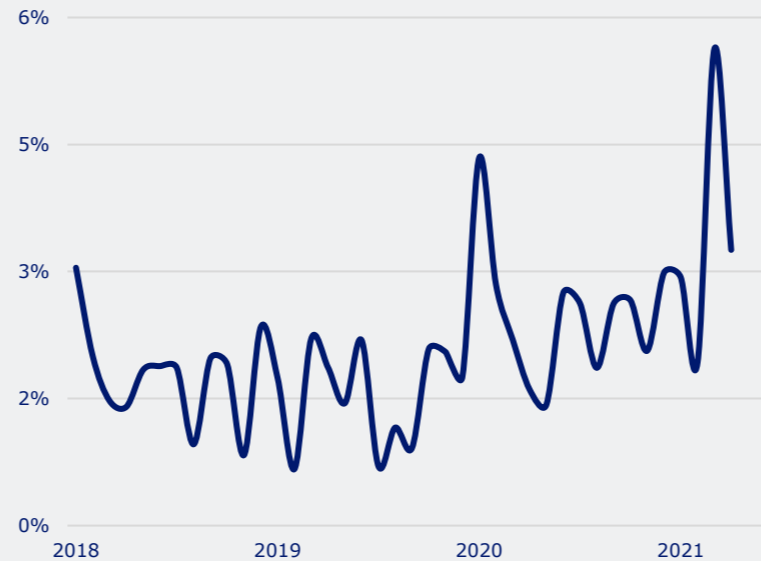
WEAKENED FUNDAMENTALS

Fundamentals weakened during 2020. An inflow of 23 new VLGCs was enough to destabilise freight markets during a period of industrial lockdowns and low LPG demand.

EXTRAORDINARY AMOUNT OF CAPACITY OUT OF SERVICE

In the first four months of 2021, the fleet grew by 2%, but available capacity was reduced by two factors. Firstly, docking activity took off. Between January and April, 80 vessels went for docking or for scrubber retrofits, corresponding to 2.1% of the fleet on a monthly basis. Secondly, congestion at the Panama Canal increased overall market travel times by up to 50% in January and February.

VESSELS OUT OF SERVICE (PERCENTAGE OF FLEET)



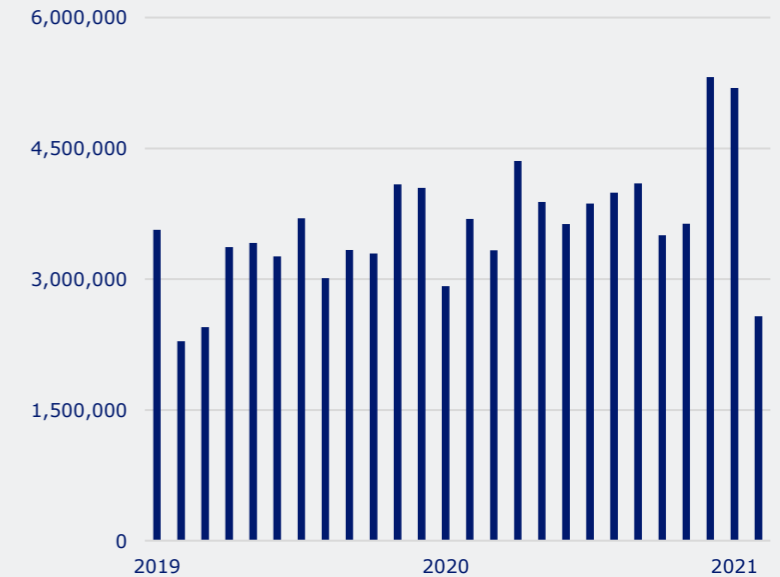
LARGE VARIATIONS IN LONG-HAUL TRADE VOLUMES

While available capacity declined, demand rose fast in the first two months of 2021. A favourable LPG price spread between the US and Asia, combined with cold weather in Asia, propelled an increase in tonne-miles of 14% versus the previous two months. However, volumes declined by 15% in March, due to the cargo supply shortage.

A VOLATILE MARKET

Between 2018 and 2020, the supply-demand balance improved by 5%, positioning the market for growing earnings under the right circumstances. Nevertheless, the dependence on a small number of load and discharge countries increases the risk of large fluctuations in freight rates.

US-ASIA LPG TRADE VOLUMES (CBM)



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

LPG OUTLOOK SUMMARY

The market faces short-term challenges, but there are opportunities on the horizon

The LPG market faces considerable change in the coming years. Driven by a large inflow of LPG-powered VLGCs, the LPG fleet will expand on a large scale. Alignment of available capacity and cargo supply could prove difficult in 2021. Seaborne LPG volumes are expected to regain the lost territory during 2021, but it remains to be seen whether the tariff exemption on US exports to China can continue to drive growth in distance-adjusted demand.

A cargo supply shortage and capacity oversupply are likely to create a tough competitive market for owners from a short-term perspective. Investor appetite signals strong confidence in the future LPG market beyond 2021, but the fleet – in particular VLGCs – could be heading for a period of surplus vessel capacity until older, less efficient vessels have been substituted by the LPG-powered vessels on order. VLGC freight rates are likely to experience high volatility and periods at low levels.

A MARKED EXPANSION OF THE FLEET

The fleet is set to see an inflow of a massive 2 million cbm in 2021 (equivalent to 6% of the fleet) and another 2.3 million cbm in 2022 (5% of the fleet). VLGC deliveries of 3.6 million cbm in 2021 and 2022 (14% of the VLGC fleet) will drive the fleet expansion.

HIGHER MARKET MATURITY LOWERS FUTURE GROWTH POTENTIAL

The LPG market is becoming more mature. This could lower growth in Asian import volumes in the short to medium term. Yet, it is also assumed currently that the capacity expansion in the Chinese petrochemical industry will translate into increased LPG import volumes up to 2025.

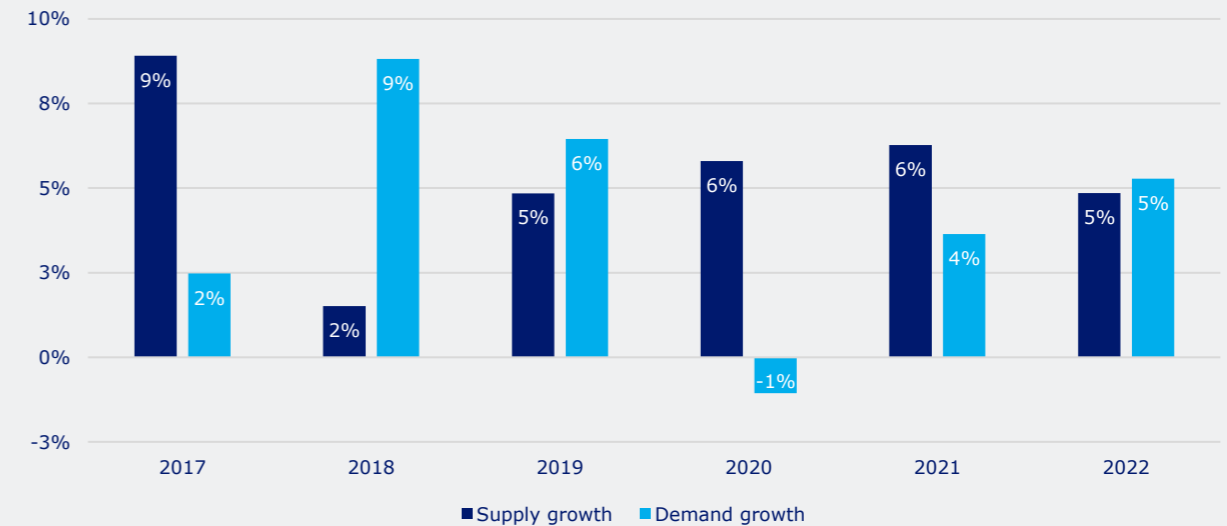
LONGER TRAVEL DISTANCES COULD BALANCE THE MARKET

There are factors that could constrain trade growth significantly, most notably the ongoing OPEC+ oil production cuts and lower growth in US oil production. Still, longer travel distances could continue to drive demand for LPG vessels. US exports are double the volume of China's imports, creating ample room for longer travel distances should China increase its dependence on US LPG. The Chinese tariff exemption on US LPG will stimulate long-haul LPG trade. Seaborne LPG volumes are estimated to grow by 3-4% and 4-5% in 2021 and 2022, respectively.

EXTRAORDINARY LEVELS OF SCRAPPING COULD BE NECESSARY IN 2021 AND 2022

The market outlook for 2021 and 2022 looks challenged unless demolition of older, less efficient vessels can balance the market. Volumes could undershoot current projections if the capacity expansion of the Chinese petrochemical sector is not converted into LPG imports. Moreover, travel distances could decrease once again if the American and Chinese relationship worsens.

SUPPLY AND DEMAND BALANCE (CBM AND TONNES)



Source: Clarksons, Danish Ship Finance

LPG FLEET OUTLOOK

Inflow of new VLGCs will drive significant expansion of the LPG fleet

Strong investor appetite for LPG vessels continues to increase annual deliveries. LPG propulsion seems to be the latest feature aimed at hedging new vessels against the risk of stranded assets, since these vessels are easier to retrofit for zero-carbon fuels.

The number of vessels on order is accelerating

On the back of growing contracting activity, the orderbook-to-fleet ratio has reached the highest level in four years. Investments in LPG-fuelled VLGCs and MGCs are driving the growing contracting activity (see supply deep dive at page 5). The size of the orderbook reflects high market expectations for growing demand volumes.

In the unlikely event of no additional demand growth,

premature scrapping will be needed to balance the market for freight rates to yield a return on invested capital. For VLGCs, the economic lifetime would need to drop to 20 years, while MGCs and SGCs could achieve a balanced market without seeing their economic lifetimes drop below 30 years. Still, vessels older than 25 years may need to be scrapped.

A large inflow of vessels in 2021

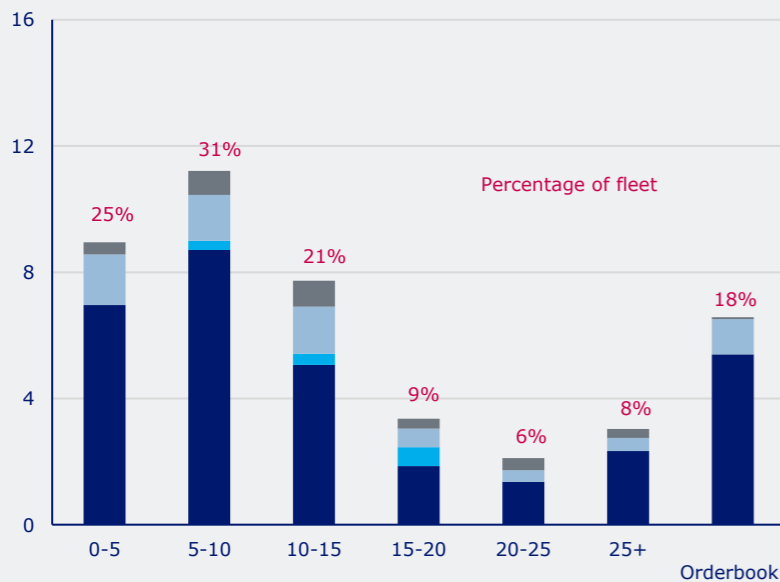
The large and frontloaded orderbook guarantees fleet growth. In 2021, the equivalent of 7% of the fleet is scheduled to be delivered, while the active fleet will increase by another 1.7% due to vessels returning from dockings.

The VLGC segment will see capacity equivalent to 9% of the fleet being delivered. The large inflow of new vessels increases the risk of freight rate volatility in the event that demand or cargo availability become out of sync. It is mainly older and less efficient vessels that are exposed in periods of surplus capacity.

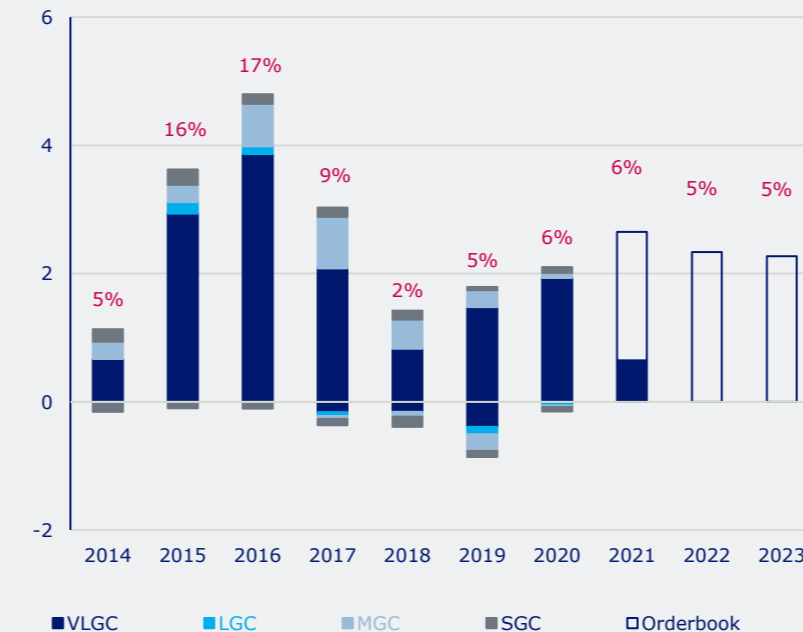
The rapid fleet expansion could continue

Contracting activity is likely to remain high for deliveries in 2023 and beyond. Shipowners seem to be favouring LPG-fuelled vessels that can be retrofitted for zero-carbon fuels. The orderbook is currently scheduled to add another 5% to the fleet in 2023. This figure is likely to increase by another 2-3 percentage points before then.

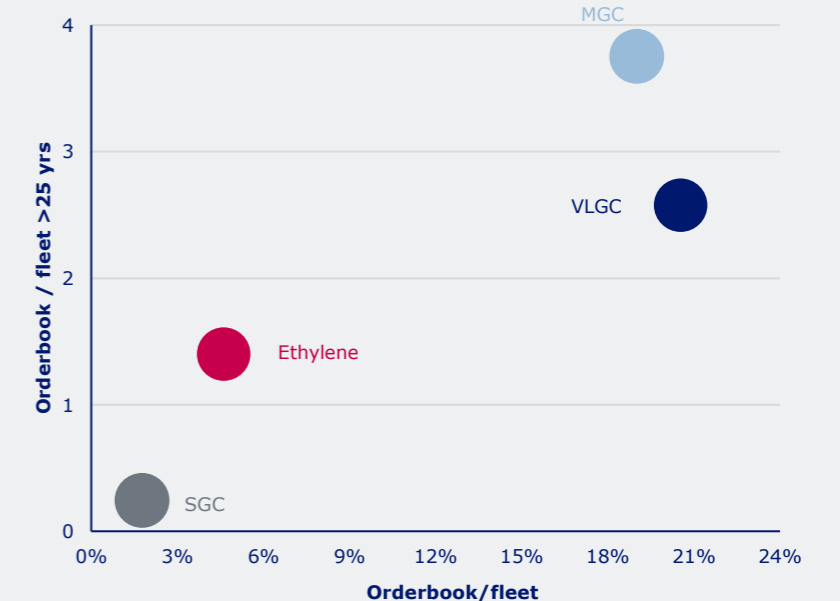
AGE DISTRIBUTION OF FLEET (MILLION CBM)



FLEET DEVELOPMENT (MILLION CBM)



FLEET RENEWAL POTENTIAL (DWT)



Source: Clarksons, Danish Ship Finance

FLEET DEEP DIVE: THE ORDERBOOK IS BEING FUELLED BY LPG

Increasing numbers of LPG vessels are set to be fuelled by the same commodity and risk is building for older vessels

LPG-powered engines are increasingly being installed on both existing and vessels on order.

61% OF THE ORDERBOOK IS POWERED BY LPG

LPG as a bunker fuel is a relatively new thing – the first vessel entered service in January 2021 – but the trend is expected to rise steeply: in numbers, vessels with LPG-powered engines (including ethane) account for 61% of the orderbook. When the orderbook is delivered, 15% of the fleet will be powered by LPG.

91% OF VLGC ORDERS ARE POWERED BY LPG

For the VLGCs, the trend is even more astonishing: 91% of the VLGC orderbook is for vessels powered by LPG. This translates into 16% of the fleet or 28% of vessels younger than ten years when the orderbook is delivered.

MANY VESSELS ARE LIKELY TO BE RETROFITTED

This trend intensifies when we include vessels scheduled to be retrofitted with dual-fuel engines (LPG compliant). The business case hinges on the price spread for bunker fuels and consumption, but retrofitting seems most appealing for young and larger vessels; older vessels find themselves in a less advantageous position.

LOWER EMISSIONS

LPG as a fuel produces lower CO₂, SO_x and NO_x emissions than HSFO with a scrubber, or VLSFO. LPG-powered vessels can therefore expect a better Energy Efficiency Existing Ship Index (EEXI) than vessels propelled by conventional fuel. Last but not

least, LPG can work as a bridging fuel for future zero-emission fuels, such as green ammonia, since LPG tanks and systems in most will be suitable for ammonia.

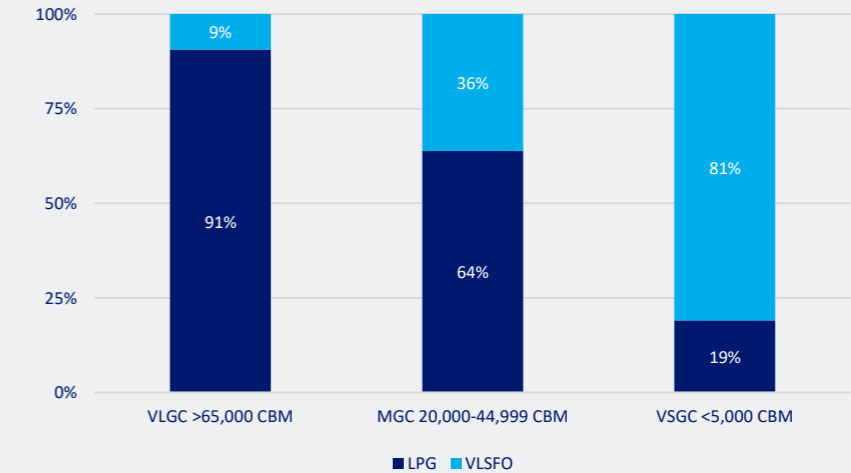
HIGHER CAPEX BUT LOWER VOYAGE COSTS

The hedge against the risk of stranded assets does not come for free. Vessels powered by LPG are more expensive than their traditional counterparts. Take VLGCs as an example: LPG-powered vessels are approximately 8% more expensive than vessels powered by heavy bunker fuel oil. The higher CAPEX is somehow compensated for by lower voyage costs, however, which explains why VLGCs dominate the trend. LPG-driven vessels can load and discharge cargo and fuel at the same terminals, which reduces the time in port.

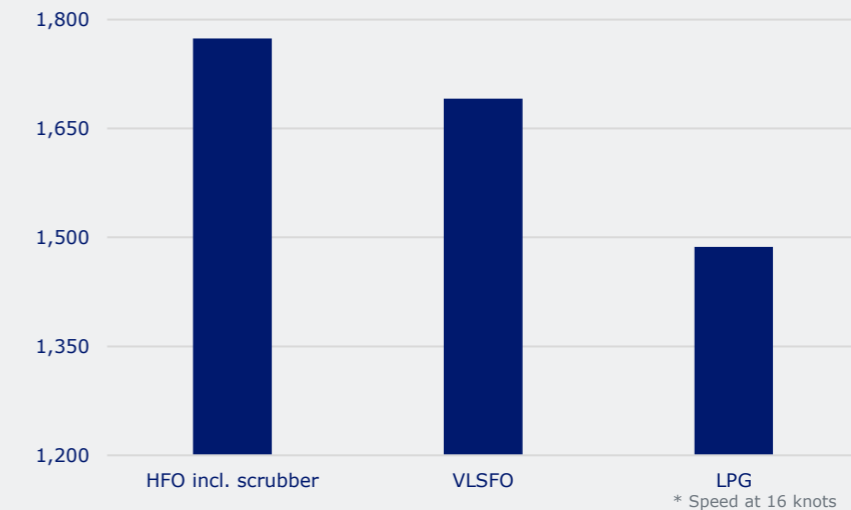
INCREASED RISK OF PREMATURE SCRAPPING

The larger vessels benefit the most from LPG-fuelled engines due to their size, voyage distances and from carrying only LPG. However, the payback period after retrofitting existing vessels makes it unattractive for vessels older than 15 years. These vessels represent 22% of the fleet. Many of the non-retrofitted vessels will find it increasingly difficult to compete, which means that they may become candidates for premature scrapping in periods of surplus vessel capacity.

THE ORDERBOOK BY FUEL TYPE (SHARE OF VESSELS ON ORDER)



FUEL CONSUMPTION (TONNES PER VOYAGE (VLGC*: AG-JAPAN))



Source: Clarksons, Drewry, MAN Energy, Steem 1960, Danish Ship Finance

LPG DEMAND OUTLOOK

Asia will continue to drive demand volumes

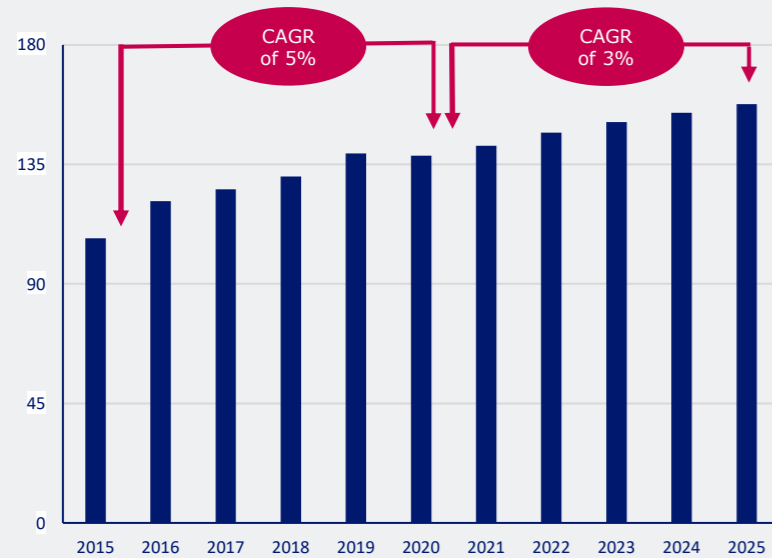
Demand growth is set to be centered around a growing Chinese petrochemical sector fueled by US LPG, boosting long-haul trade.

3% ANNUAL GROWTH IN LPG VOLUMES UP TO 2025

Growth in seaborne LPG volumes is expected to decline, as the LPG market in Asia is becoming more mature. Seaborne LPG volumes are set to grow at a CAGR of 3% between 2020 and 2025, compared with a CAGR of 5% between 2015 and 2020. Most of future LPG demand growth will be driven by China and India.

CHINA WILL DRIVE HALF THE TRADE EXPANSION

The Chinese petrochemical sector is expected to increase LPG imports from 20 million tonnes to approximately 30 million tonnes. This implies an additional 208 VLGC port calls in 2025 after 1.400 loaded port calls in 2020. If the capacity expansion is fully utilised, it could translate into annual growth in LPG imports of 13%. China would then drive half the annual expansion in LPG trade up to 2025.



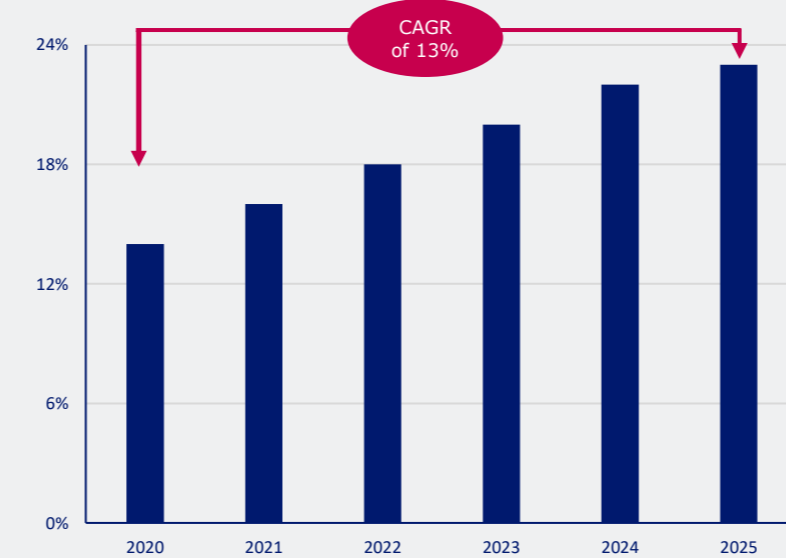
calls in 2025 after 1.400 loaded port calls in 2020. If the capacity expansion is fully utilised, it could translate into annual growth in LPG imports of 13%. China would then drive half the annual expansion in LPG trade up to 2025.

HIGH LPG COVERAGE IN INDIA BUT CONTINUED GROWTH

In India, the residential sector has reached an LPG coverage rate of 97% of the population. Import growth seems likely to continue, although this is highly dependent on future subsidies. Current estimates expect a CAGR of 9%, driven 35% of volume growth in towards 2025.

THE GROWTH PACE FOR US EXPORT VOLUMES IS SLOWING

US LPG exports increased at a CAGR of 19% between 2015 and 2020 but are expected to grow at significant lower rates up to 2025. Still, longer travel distances could

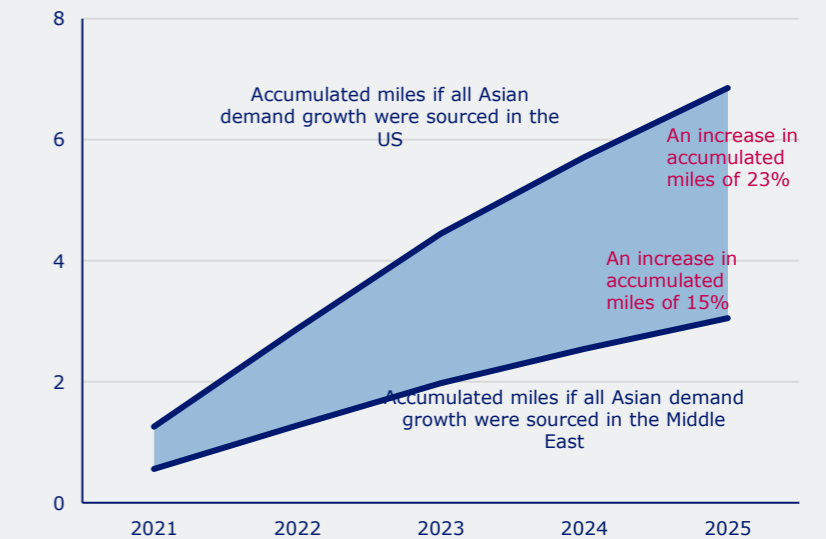


continue to drive seaborne demand, as China and India are likely to source a larger share of their imports from the US, although short-term cargo supply shortages could occur.

OPEC CUTS ARE KEEPING EXPORT GROWTH LOW

India and China are major importers of Middle Eastern LPG, but additional sourcing could prove difficult in the short-term given that the OPEC cuts in oil production seem likely to continue with oil demand staying low. This creates an opportunity for the US to increase its export share to Asia. If all future Asian demand growth up to 2025 were sourced from the US, the accumulated voyage miles would be 8% higher compared to Middle Eastern sourcing.

ACCUMULATED VOYAGE DISTANCES (MILLION MILES)



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

DEMAND DEEP DIVE: US LPG EXPORTS

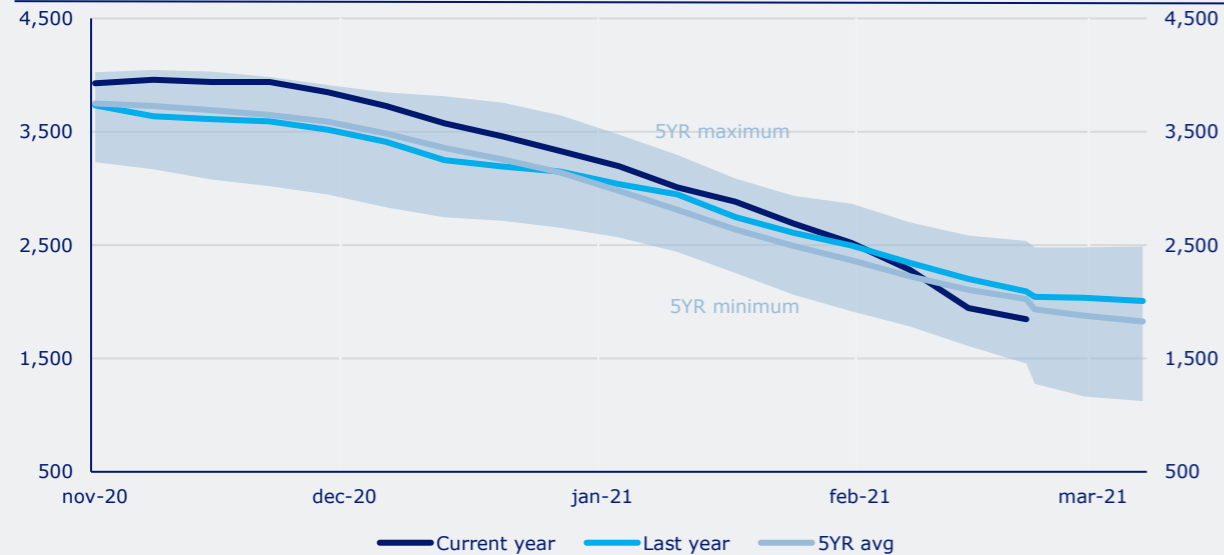
Trends in US LPG production and trade set the course for LPG vessel demand

The US is the world's largest exporter of LPG, and changes in production capacity, storage and export partners have severe consequences for demand for LPG Carriers. In the foreseeable future, market movements in the US are likely to create a supply shortage as well as longer distances for LPG Carriers.

Shortage of US LPG supply

Between 2010 and 2020, US field production of natural gas liquids (NGL) grew from 2.1 to 5.3 million b/d. Consequently, the US is today the largest exporter of LPG. US NGL production will continue to expand, but the pace is expected to slow to a CAGR of 2% in the coming five years. Nevertheless, the extreme weather in Texas and the Covid-19 pandemic are likely to cause a temporary shortage of US LPG. The winter storms in Texas resulted in a decline of around 40% in US LPG inventories (to levels below the five-year average), reducing the amount available for export. Meanwhile, US export terminal and fractionator projects for up to 1 mbpd have been shelved or delayed due to the pandemic. In combination with the continuation of OPEC cuts, the US LPG shortage is likely to

US LPG INVENTORIES (BCF)

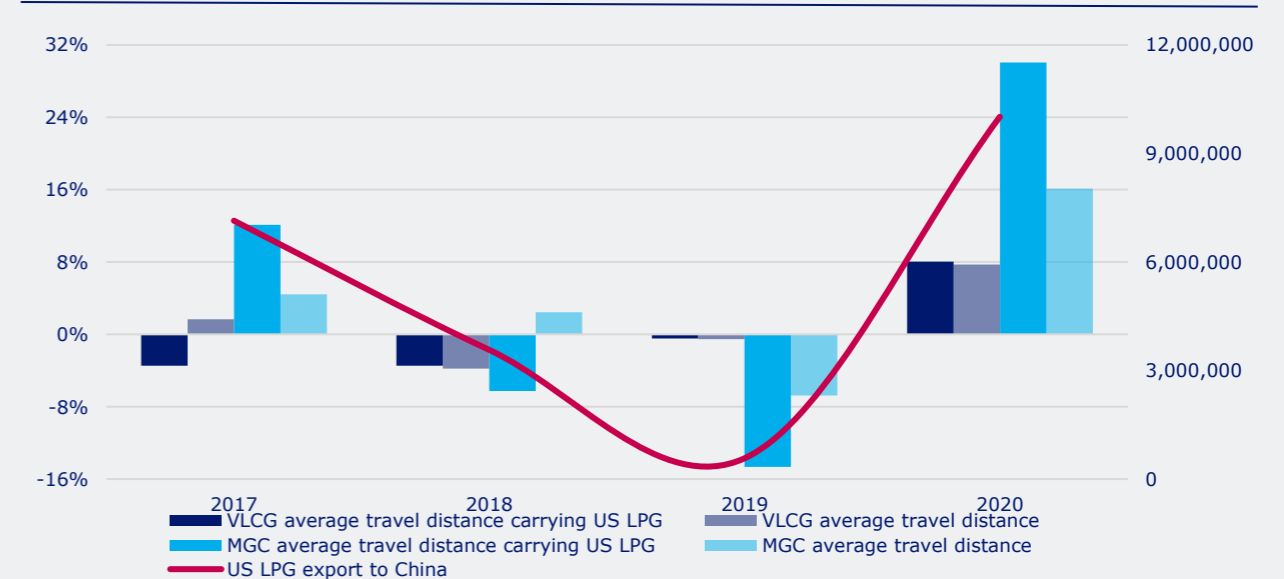


hamper cargo supply across the LPG market in 2021. We expect this to put a lid on demand growth in the VLGC and MGC segments in the coming months.

US-China LPG trade could increase voyage distances

The introduction of tariffs on US LPG in 2017 almost eliminated LPG trade between the US and China. The US increased its exports to Central America, South Korea and Japan, while China imported a larger share of Middle Eastern LPG – and the average voyage distance declined accordingly. The Chinese exemption of tariffs in 2020 led to a reversal of the trade patterns, with large volumes of US LPG once again steered to China. Consequently, the average voyage distance increased again. This illustrates the correlation between US-China trade and the average voyage distance in the LPG market. If the import potential related to the Chinese petrochemical sector materializes and the political relationship between the two countries does not deteriorate again, we expect a growing share of US LPG export volumes to go to China instead of to geographically closer countries. This could boost long-haul trade and vessel employment in the MGC and VLGC segments.

CHANGES IN AVERAGE TRAVEL DISTANCES (MILES) AND US LPG EXPORTS TO CHINA (CBM)



Source: Argus, Clarksons, Drewry, EIA, Refinitiv, Danish Ship Finance



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