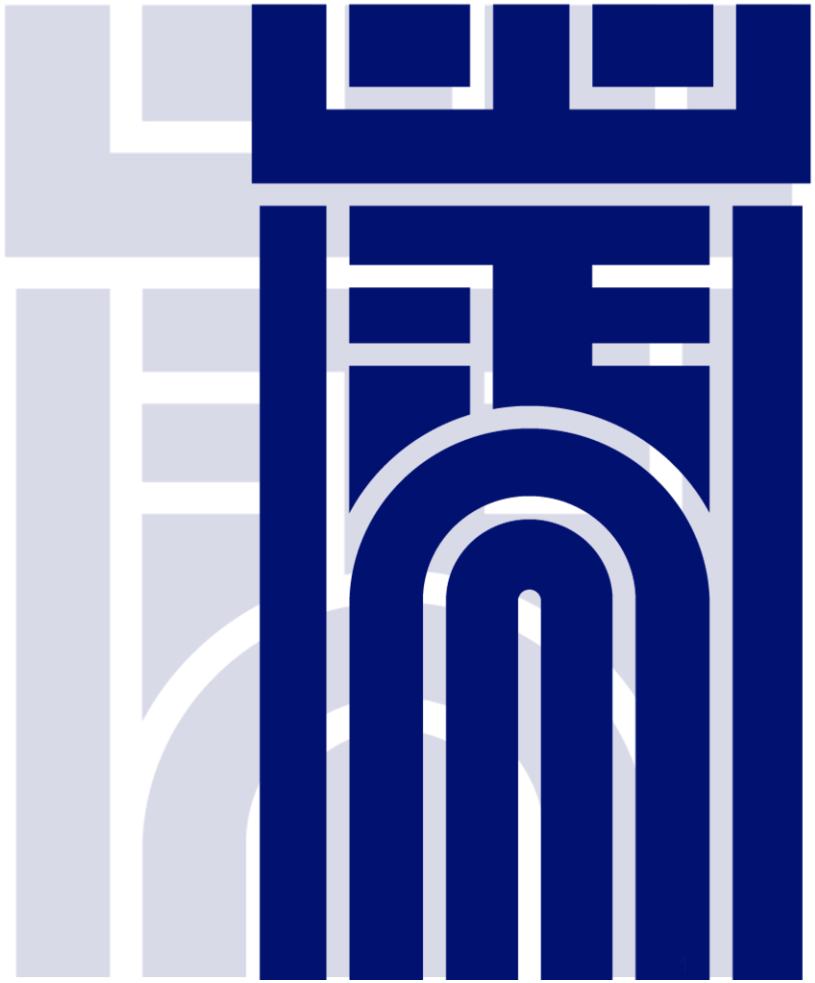
SHIPPING MARKET REVIEW

DECEMBER 2019



DANISH SHIP FINANCE

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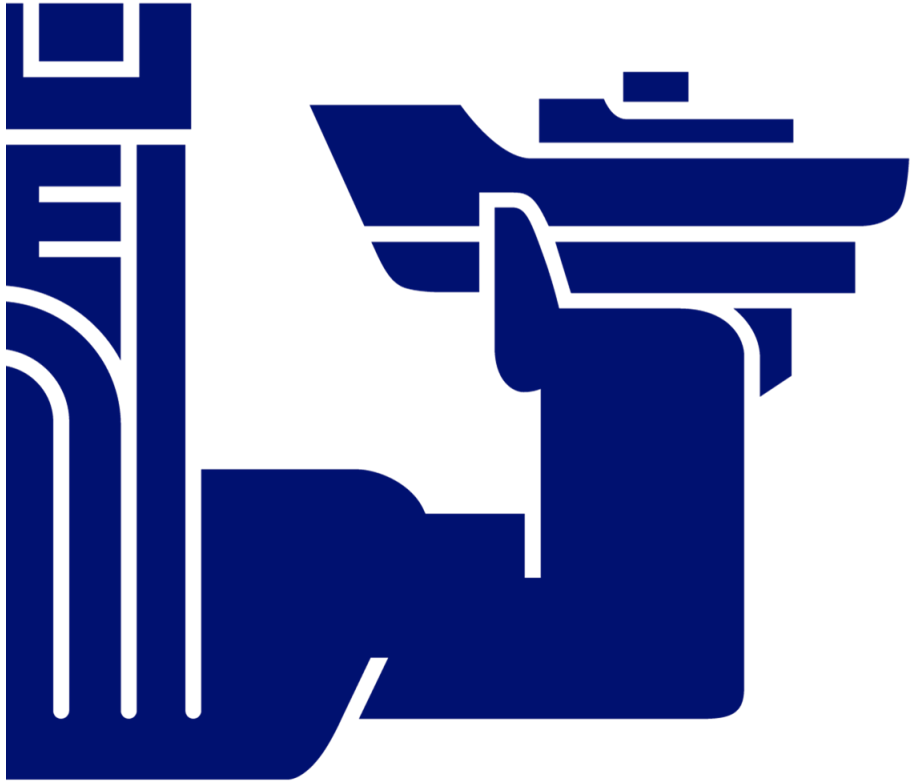

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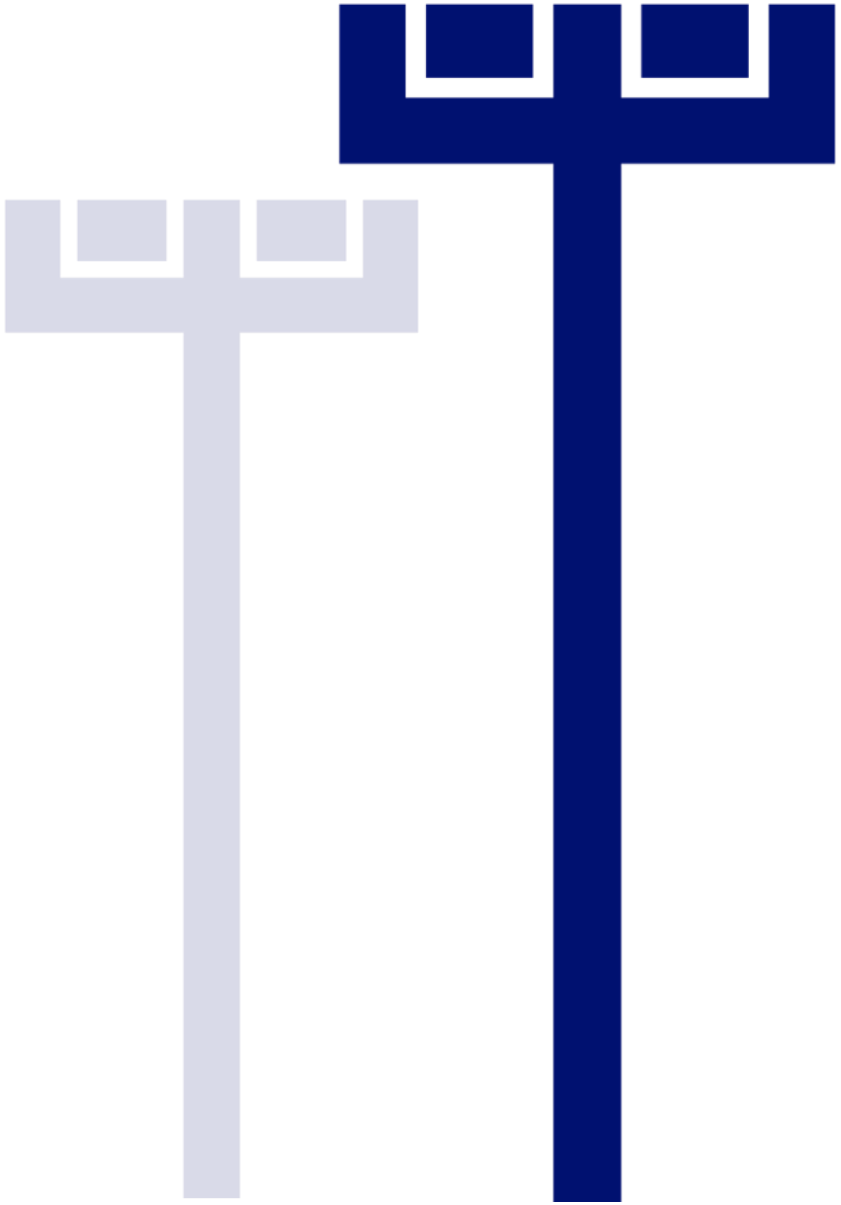

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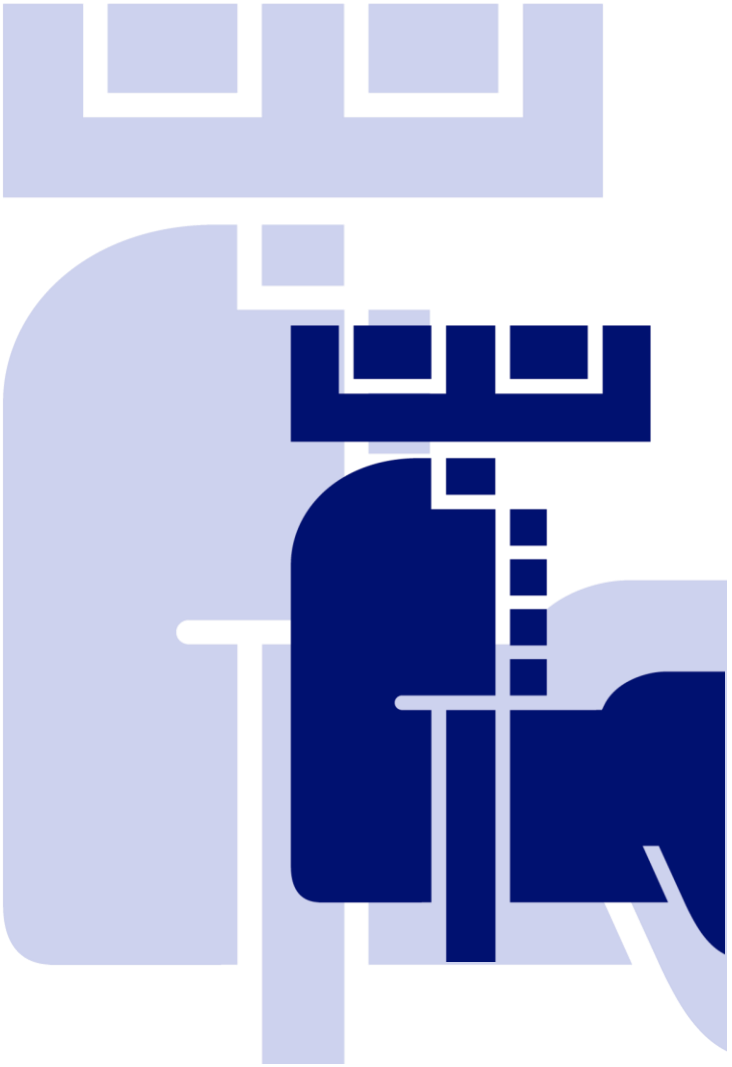


EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The report reviews key developments in shipping markets and the main shipping segments during 2019 and indicates possible future market directions. Please read the disclaimer at the beginning of this report carefully.

The first section of this report – our General Review and Outlook – is intended to promote discussion of the medium to long-term drivers for the shipping industry. We urge our readers to consider some of the structural challenges that we, among others, believe are transforming the long-term outlook for many parts of the shipping industry. We highlight some global perspectives that might serve as an outlook.

The next generation of technologies may reduce trade flows by changing the economics and location of production and transforming the actual content of what is traded across borders: from energy to manufacturing to construction. New technologies are disrupting some very basic mechanisms that have been facilitating massive growth in seaborne trade volumes over the past decades. These mechanisms could become outdated sooner than many people expect.

We present a discussion of the potential developments that may come into play within the lifetime of vessels currently trading. Throughout this section, we apply a macroeconomic perspective to the shipping industry. This methodology allows us to analyse the main long-term trends, rather than to focus on the short-term industry outlook. Accordingly, our approach is not intended to identify short-term opportunities related to sudden market improvements. Rather, we present prospective trends that may have a major impact on the shipping industry: some of these will play out, while others will be overtaken by alternative scenarios or the status quo will prevail, although the latter is less likely.

We strive to provide a clear-eyed perspective on how to navigate the changing tides caused by the implementation of new environmental regulation, new demand dynamics, new value drivers and consolidation on the asset-owning side. Still, it is important to keep in mind that long-term trends only define the dynamics in play. These dynamics may easily be outgunned by temporary forces defining short-term demand. Even in oversupplied markets, the temporary forces may become sufficiently powerful to raise freight rates and secondhand values over several months, sometimes even longer.

GENERAL REVIEW AND OUTLOOK

The shipping industry is on the brink of a massive shift in value distribution. The introduction of new environmental regulation and the push to digitalise expose shipowners to the risk of stranded assets. The highly fragmented structure of the industry makes it ill prepared to take advantage of the emerging changes. This calls for business model innovation and significant investments in new technologies and fuel types. Costs are rising but there is little to indicate that revenues will follow suit.

Some traditional players may be facing difficult times, while others are investing to prepare for the future. Value is likely to be redistributed and the competitive landscape is likely to change.

SHIPBUILDING

The shipbuilding industry has been burdened by surplus capacity for the past decade. The industry is consolidating, but it will take time. There are currently 281 yards with a combined capacity of 55 million cgt.

The global orderbook is at its lowest level in 15 years with just 2,600 vessels or 70 million cgt on order. It is very frontloaded with

two out of three (66%) vessels scheduled to be delivered within the next 18 months.

The average yard has utilised approximately 48% of its capacity in 2019, but there is huge variation between yards. The group of yards with order cover beyond one year, representing 60% of capacity distributed among 121 yards, have had average utilisation of 60%, while the remining 160 yards have only utilised 30% of their capacity.
Global yard capacity is set to be utilised at an average rate of 61% in 2020, since 34 million cgt is scheduled to be delivered. The 121 yards that have order cover beyond one year, are due to utilise 84% of their capacity in 2020, while the remaining 160 yards are only scheduled to utilise 29%.

Few new vessels are likely to be ordered in the coming years until there is more clarity on future propulsion systems, fuel composition and the overall blueprints for next-generation vessels. The consolidation of the shipbuilding industry is therefore likely to continue.

Smaller, less-efficient and less sophisticated yards are likely to close. But the super-large yards are also vulnerable, since their mere size requires them to build many vessels in a low market. Time will tell which survive and which do not, but it seems beyond doubt that the years to come will be very challenging for most shipyards.

CONTAINER

The Container market is working to absorb a large inflow of super-large vessels while distributing as much surplus capacity across smaller vessels' routes as possible. Without extensive use of cascading, supply expansion would move significantly ahead of demand growth.

Our research suggests that some vessel segments may prove too big for further cascading but too small to be employed. These vessels, together with older vessels and those with high fuel consumption, are likely to become scrapping candidates in 2020 and beyond.

Demolition activity is likely to increase, which may reduce the economic lifetimes in several vessel segments and lower the value of older vessels.

The market outlook for the smaller vessel segments is significantly better than for the larger vessels.

DRY BULK

The Dry Bulk market is characterised by rapid fleet expansion and slow demand growth in the larger segments, while supply and demand are better balanced in the smaller segments. The 1-year timecharter rates declined temporarily across all four segments but are currently trading slightly above their January levels.

The Capesize and Panamax segments are heading for a period of strong supply growth, while demand for iron ore and coal is likely to face structural headwinds in the years to come. Both segments will soon run out of older vessels to scrap, which could signal increased risk of unexpected value depreciations for older vessels. Freight rates are likely to decline in the event of too few vessels being scrapped.

The smaller vessel segments seem well positioned for a period of higher freight rates and secondhand prices. Demand growth is expected to outpace supply growth. The combination of an older fleet

and a more flexible and versatile demand composition leaves more room for managing unexpected market developments.

CRUDE TANKER

The Crude Tanker market seems to be heading towards structural overcapacity, since the fleet is expanding much faster than underlying demand. Seaborne crude oil volumes have remained flat during 2019, but longer travel distances and a range of temporal factors have allowed timecharter rates and secondhand prices to increase. In October, US sanctions on Chinese entities caused short-lived fears of more widespread sanctions being imposed, pushing spot rates up to historical highs for a few weeks.

The supply outlook is clearly improving but is likely to run ahead of demand in 2020. The implementation of the IMO 2020 regulation will continue to create brief periods of reduced fleet availability in 2020 but will not result in any lasting improvements to the supply and demand balance.

The demand outlook is uncertain, but most drivers seem to be dampening expectations. Travel distances are artificially long due to the OPEC+ oil production cut and seaborne crude oil volumes have failed to increase despite positive economic growth. There is little to suggest that the oil intensity of the global economy will improve in the years to come.

Freight rates and secondhand prices face downside risk when the IMO 2020 effects evaporate. Short travel distances – should OPEC lift the production cut – will only weaken the outlook even further.

PRODUCT TANKER

Weak growth in cargo volumes combined with a large inflow of new vessels created surplus vessel capacity during the first nine months of 2019. Spot earnings weakened accordingly. Timecharter rates and secondhand prices have increased throughout the year in anticipation of a demand push prior to the implementation of the IMO 2020 regulation. Since October, cargo volumes have begun to increase significantly, reflecting the repositioning of oil stocks.

Our research suggests that the new regulation is causing some cargo volumes to be structurally shifted from Crude Tankers to Product Tankers. The short-term repositioning of product stocks is expected to lift Product Tanker demand in 2020 only. The market outlook for 2020 is therefore strong, but freight rates could begin to decline again in 2021.

Sale and purchase activity have been high during the year. Vessels older than ten years have dominated the transactions and contracting has remained low. This could suggest that buyers are seeking to limit their long-term exposure.

LPG

The LPG market is being propelled by moderate fleet growth and strong demand growth stimulated by increasing volumes of low-cost US LPG. On average, timecharter rates increased by 50% during the first ten months of the year. The larger segments (VLGC and LGC) have experienced the strongest recovery powered by increased long-haul trade from the US to Asia. In the smaller segments (MGC and SGC), the recovery has been lacklustre and vessel oversupply persists. We expect the fleet to expand by 12% over the next two years with growth being concentrated to the VLGC segment. Demand is projected to be slightly lower than fleet growth on a volume basis, but a massive expansion of US LPG export capacity is set to push distance-adjusted demand ahead of

supply. Seaborne LPG demand could exceed our projections if the US-China trade conflict is resolved.

LNG

The LNG market is enjoying stable growth. New export capacity coming online has enabled newbuild deliveries to enter into their designated long-term charter contracts. The limited ship availability has led to upward pressure on freight rates. We expect the fleet to expand by 22% over the next three years, while growth in new export capacity will decline. The massive inflow of new vessels is likely to push the market into oversupply, and we expect freight rates to come under pressure by late 2020 or early 2021. We anticipate the market staying oversupplied until 2024 when strong growth in export capacity is set to return. ▪

GENERAL REVIEW & OUTLOOK

GENERAL REVIEW AND OUTLOOK

THE SHIPPING INDUSTRY'S PERFORMANCE HAS BEEN FALTERING SINCE 2008. SOME ARGUE THAT THIS IS JUST ANOTHER CYCLICAL SETBACK, WHILE OTHERS ARE WORRIED THAT A NEW SET OF DISRUPTIVE TRENDS ARE AT WORK. OUR RESEARCH SUGGESTS THAT THE INDUSTRY IS INDEED ENTERING NEW TERRITORY AND THAT THE CHALLENGES ARE MORE PROFOUND THIS TIME.

LOW RETURN ON INVESTED CAPITAL

The core operation, transporting cargo from A to B, is struggling to extract value from a volatile freight market, where long periods of surplus capacity have been driving down income potential. The asset play has been able to create some additional value, but the average return across business models and vessel segments has been low for the past decade.

SHIPPING IS AN IMPORTANT PART OF GLOBAL INFRASTRUCTURES

The service performed by the shipping industry is considered lifeblood to the global economy, and the industry has been a key enabler of many of the past century's most extraordinary gains. The agility of the complex global infrastructure that forms the networks of global supply chains has made the industry an essential engine for economic development and GDP growth.

MASSIVE CHANGES ARE EXPECTED

However, the introduction of new technologies combined with the environmental sustainability agenda requires some vital reconfigurations to global value chains that may have fundamental implications for the shipping industry.

OFFERING SPECIALISED OPERATIONS BUT TREATED AS UTILITIES

The shipping industry is primarily operated by small and medium-sized players, which in total operate more than 50,000 vessels with few common standards. Many shipowners offer specialised operations to the market, but most are treated as utilities.

STANDARDISATION IS REQUIRED

The fragmented asset base leaves little room for the industry to achieve cost savings from economics of scale. The absence of a standardised asset base makes it vulnerable to the transformations that are emerging as the global economy becomes more digital and decarbonised.

COST SAVINGS ARE NOT ENOUGH

True, shipowners have been following a cost-savings narrative for the past decade. Most initiatives have been targeted to deliver results to the bottom line fast. Few players have advanced the potential offered by standardisation within vessel segments and across sectors.

NEW SERVICES NEED TO BE DEVELOPED

The industry's complex structures have often put an end to experiments with more disruptive business model innovation; most efforts have been devoted to fighting agency problems rather than unlocking value by addressing the industry's underlying challenges. Few seem to have identified and developed new services that could deliver additional streams of revenue.

FEW SEEM WELL PREPARED

The shipping industry's inability to identify growth opportunities combined with, or maybe even caused by, their slow adoption of new technologies lowers the likelihood that it will begin to derive greater benefits from digital transformation efforts. Digital transformation is about more than implementing discrete technologies that have been developed by third parties and distributed across industries. Rather, it involves developing a broad array of

technology-related asset and business capabilities that can help propel the journey towards additional value creation.

BUSINESS MODEL INNOVATION BEYOND COST SAVINGS

We expect the shipping industry to undergo profound changes over the next decade as these trends prompt changes to the industry's modus operandi. This transformation calls for business model innovation and significant investments, not only in new technologies and new fuel types but in time also in next-generation standardised, digital and decarbonised vessels.

INCREASED RISK OF STRANDED ASSETS

The path towards digitalisation and decarbonisation exposes the shipping industry to the risk of stranded assets. Costs are rising, but there is little to indicate that revenues will strengthen in the short term. Many traditional players may be facing difficult times, while others are investing to prepare for the future.

THE COMPETITIVE LANDSCAPE IS LIKELY TO CHANGE

Our intention is to spark discussion by presenting some challenging views on how today's shipping industry could be transformed by the emerging changes. These are not only redefining existing players' licence to operate but are also significantly altering how value is created and distributed. The entire competitive landscape is likely to shift when the borders of industries, the role of assets and the types of competitor come up for review.

A NEW INDUSTRY NARRATIVE

Some players will begin orchestrating new ecosystems or operating platforms with an ambition to continue gradually expanding into adjacent domains. A variety of services and vendors are likely to be combined to serve customers not only from port to port but across global supply chains. Some will own standardised physical assets at scale, while others will monetise and excel via data supremacy. Few are likely to do both.

SEABORNE DEMAND OUTLOOK

Most long-term forecasts are based on the assumption that the millions of people entering the global labour force will generate significant seaborne trade volumes when they start work and begin to urbanise, consume and create new ripples of economic growth.

TRADE VOLUMES AND TRAVEL DISTANCES ARE LIKELY TO CHANGE

However, the global labour market's barriers to entry may continue to rise when industries, ranging from textiles to automotive manufacturing, decentralise production facilities by increasingly producing at zero-labour factories close to consumers. This trend is already gaining pace. Technological advances within robotics, artificial intelligence and advanced manufacturing allow corporates to reduce the importance of labour costs and economics of scale to the benefit of localised production. Trade volumes and travel distances are likely to change not just for containerised goods but also for energy, chemicals and building materials. Global supply chains are up for review.

LOW FREIGHT RATES COULD BECOME STRUCTURAL

Many emerging economies are finding themselves in a demographic sweet spot with population trends favouring economic growth. In the past, economic growth has also fuelled growth in seaborne trade volumes. But if their populations have no jobs, few will be able to deliver on any of these expectations. This represents a significant challenge for many cargo-carrying vessels, since most fleets are young and geared towards further growth in trade volumes.

SEABORNE TRADE VOLUMES COULD BEGIN TO DECLINE

Our research suggests that the medium to long-term demand outlook for a number of vessel segments indicates structural downside risks. For example, while the history of trade reflects the ongoing march of technological innovation, the next generation of technologies may reduce trade flows by changing the economics and location of production and transforming the actual content of what is traded across borders.

THE ENERGY TRANSITION IS WORKING TO LOWER TRADE VOLUMES

Trends in the energy sector are another example. Transportation of fossil fuels represents up to 40% of seaborne trade volumes per year. There is little dispute about the forthcoming energy transition, whereby renewable energy sources are set to substitute fossil fuels in many sectors and industries, but the timing and navigation of the transition remains unclear. Still, energy producers are adjusting their strategies and rebalancing their investment portfolios.

TANKER VESSELS ARE SURFING A WAVE OF TEMPORAL FACTORS

Tanker vessels are currently benefiting from oil flows trading longer distances and more volumes being lifted, since oil is being repositioned and refineries are being retrofitted to prepare for IMO 2020. Gas volumes are abundant, which has created a supply-driven market whose connection to underlying demand is becoming less evident. But these effects may begin to lose steam. The medium to long-term demand outlook is burdened by the advances in energy efficiency, ageing global consumers, and new sources of (renewable) energy. The outlook for the fossil fuel-carrying part of the shipping industry could therefore be beset by a new round of challenges after the effects of lower fleet availability related to the installation of scrubbers wear off.

THE COMPETITIVE LANDSCAPE

The climate agenda and the enforcement of new regulations are taking up much of the attention of the shipping industry. And for good reason – decarbonising is hardly a matter of choice in the medium term; it has become business critical. Led by IMO 2020 targets, investors, banks, cargo owners and consumers are demanding clear and transparent business strategies to lower emissions. Access to cargo, capital and even ports could become significantly constrained for companies and vessels that do not actively engage in decarbonising their operations.

DECARBONISATION IS NOT A BUSINESS STRATEGY

The road to decarbonisation may reshape the competitive landscape. Many investments may prove unsuccessful if they have not been placed in the winning technologies. Still, it is important to recognise that changing fuel composition will not significantly strengthen the value proposition to customers once decarbonisation has become the industry standard.

A NEW VALUE PROPOSITION TO CUSTOMERS...

Our research (please see our Maritime Trend Report (Nov 2018) and The Circular Shipping Initiative (Sept 2019)) suggests that a new business model for vessel ownership may find its way to some markets. It will work to consolidate, scale and standardise the asset base to align the cost structure with the revenue stream. It may supply capacity to the market that is earmarked for specific cargo volumes and requirements (e.g. climate and digital). Spot volumes could shrink accordingly, and the entry barriers could be raised in tandem with a higher degree of cash-flow stability being attained. Some parts of the shipping industry may become an integrated infrastructure underpinning the global economy, with seaborne cargo supplied to the market as a utility.

...THAT ALSO CREATES VALUE FROM THE DATA EXHAUST

A consolidated, standardised and digital asset base will allow another ecosystem play to develop. Whoever owns the data exhaust arising from this asset base can orchestrate this ecosystem, operating data platforms on which a variety of services and vendors are combined to serve suppliers (OEMs, shipyards, etc.). This data will be a highly valuable asset that will enable additional efficiency improvements including fuel savings, predictive maintenance, vessel operation, end-of-life disposal, reuse and recycling.

NOT A SEA CHANGE FOR EVERY COMPANY

Still, the transformation of the shipping industry does not necessarily mean a sea change for every company in every part of the industry at the same time. Different business models will be affected in different ways, although all players in all ship segments are expected to be impacted at some point. The more traditional owners may continue to earn most of their income during periods of seasonally high demand or temporal imbalances that may continue to allow some room for the asset game.

SHIPPING MARKETS AT A GLANCE

A MORE BALANCED SUPPLY SIDE AND THE IMPENDING IMPLEMENTATION OF NEW ENVIRONMENTAL LEGISLATION ARE RAISING EXPECTATIONS FOR FREIGHT RATES. STILL, MANY VESSELS ARE SCHEDULED FOR DELIVERY WITHIN THE NEXT 18 MONTHS, WHICH MAY COUNTERACT THE TEMPORARY REDUCTION IN FLEET AVAILABILITY. THERE ARE FEW SIGNS OF FUNDAMENTAL IMPROVEMENTS IN FLEET UTILISATION.

Market conditions in the major shipping segments continue to be mixed, but the supply side is becoming more manageable with a shrinking orderbook and consolidation in the yard industry. Still, many segments have seen extensive fleet renewal in recent years, which has left few older vessels in the fleets. Seaborne trade volumes continue to grow, although the outlook is shrouded in uncertainty. The escalating trade tensions, geopolitical risks, weakening macro conditions and technologies transforming the underlying industries are all elements that could impact seaborne trade volumes significantly in the years to come.

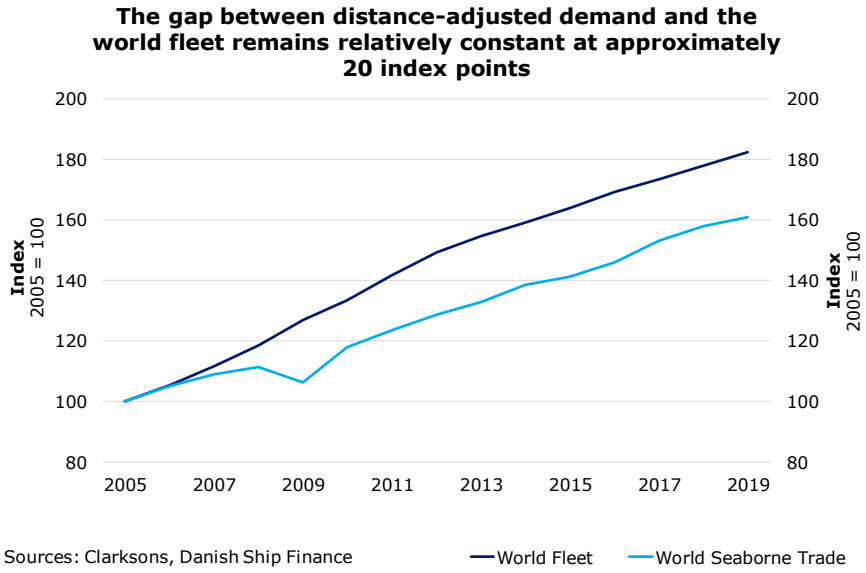
SUPPLY IS RUNNING AHEAD OF DEMAND

The supply side has been running ahead of demand for more than a decade. The world fleet has seen a net expansion of 82% since 2005, while distance-adjusted seaborne demand has grown by approximately 61%. The gap between supply and demand has remained relatively constant since 2012, although the various vessel segments have seen variations in fleet utilisation throughout the period (fig. 1). The average speed across the world fleet was reduced by approximately 16% between 2008 and 2018 to narrow the supply gap. Clarksons estimates that a 1 knot reduction in speed absorbs approximately 5% of capacity.

IMPROVED BALANCE BETWEEN SUPPLY AND DEMAND

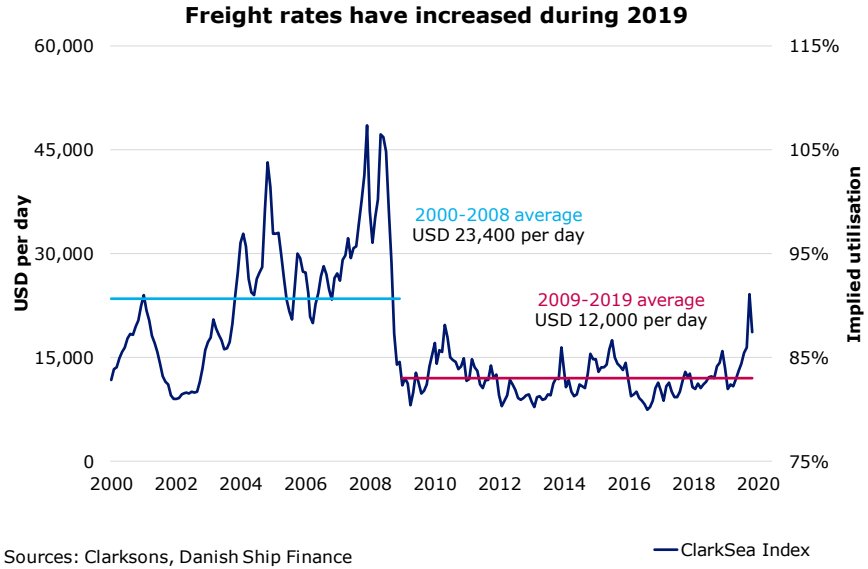
The ClarkSea Index, a weighted average of earnings across the major shipping segments, has been trending around USD 12,000

Figure GRO.1



Sources: Clarksons, Danish Ship Finance

Figure GRO.2



Sources: Clarksons, Danish Ship Finance

per day since 2009. This is approximately half the level of the extraordinarily high cycle seen between China's entry into the WTO in 2001 and the financial crisis in 2008. The index ended 2018 above USD 15,800 per day and dropped somewhat in the early months of 2019, but is by November 2019 above USD 18,600 per day, which indicates that some segments are seeing clear signs of improved market conditions (fig. 2).

HIGHER EXPECTATIONS FOR FUTURE EARNINGS

Secondhand prices reflect current earnings and future market expectations. The average secondhand price index was fundamentally on a depreciating trend from its extraordinary peak in 2008 to its lowest point in 30 years registered in November 2016. The index has since increased 30% and is now approaching index 100 (fig. 3). The average price spread between a five-year-old and a ten-year-old vessel halved between 2008 and 2016 but has now widened by 30%. This indicates that market players are raising their expectations for future earnings. This trend continued during the first eight months of 2019, with the price spread increasing by 5%.

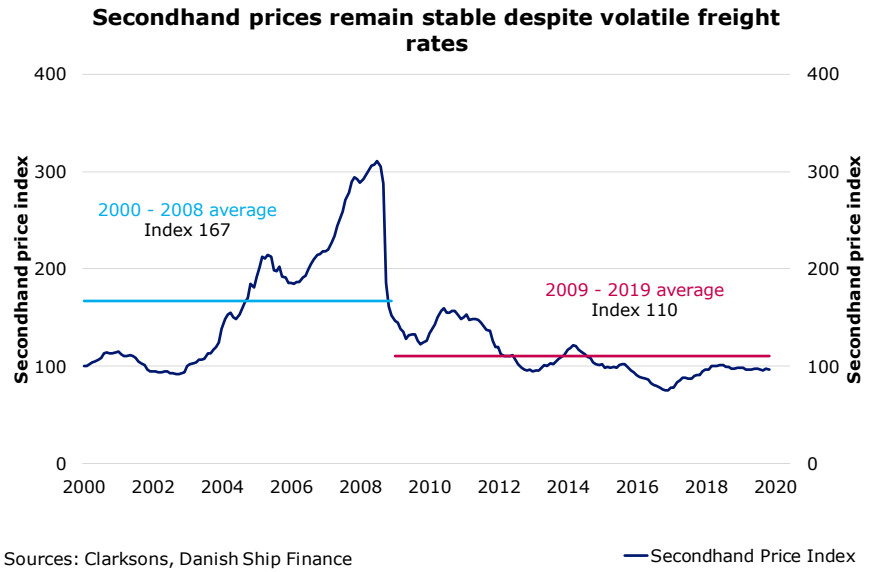
LIMITED APPETITE FOR ORDERING NEW VESSELS

Higher freight rates and higher expectations for future earnings did not supercharge the ordering of new vessels during the first ten months of 2019. A total of 45 million dwt was ordered, which is significantly lower than in the same period in previous years. Owners' appetites for ordering new vessels are being dampened by the uncertainty over the future blueprints for vessels, their degree of digital adaptation and the introduction of targets to substantially reduce emissions of carbon and hazardous particles.

THE ORDERBOOK IS SHRINKING QUICKLY

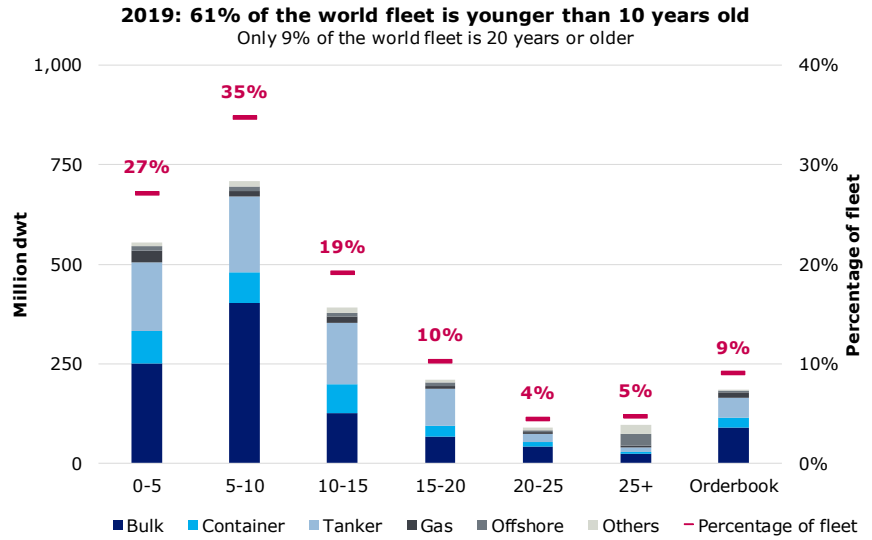
Deliveries outpaced contracting by a factor of two during the first ten months of 2019. The low contracting activity has pushed the orderbook-to-fleet ratio below 10% (fig. 4), which suggests that the supply side will continue to become more manageable in the

Figure GRO.3



Sources: Clarksons, Danish Ship Finance

Figure GRO.4



Sources: Clarksons, Danish Ship Finance

years to come. The primary concern on the supply side relates to the timetabling of the orderbook. A total of 2,100 vessels of the 3,700 currently on order are scheduled to be delivered before the end of 2020. If most orders are delivered according to schedule, supply can overtake demand in 2020.

SHORT-TERM SUPPLY GROWTH DOMINATES THE OUTLOOK

Many market participants seem to be expecting freight rates to increase in 2020. This mainly seems to be based on the argument that short-term fleet availability will be reduced due to temporal factors; either because vessels are being retrofitted with scrubbers, fleets are slow steaming to a greater degree or vessels are trading longer distances.

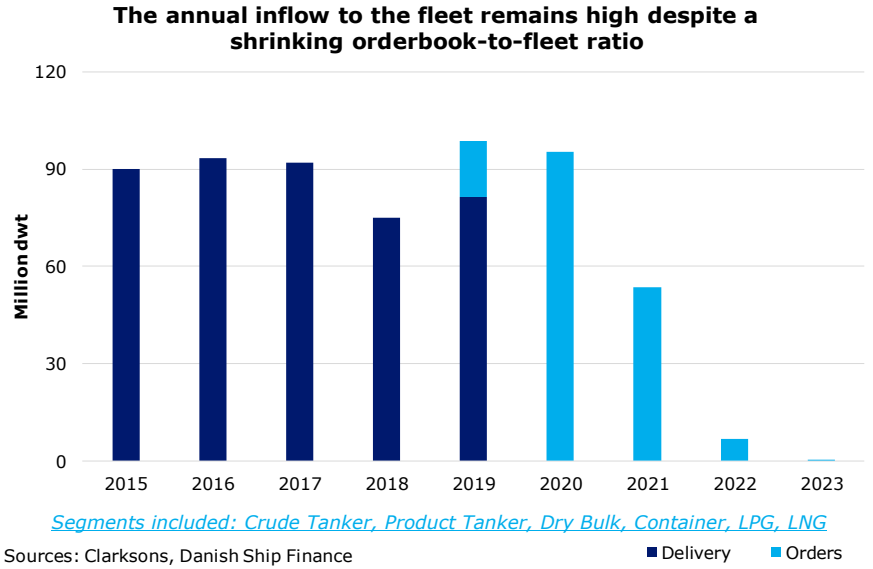
REDUCED FLEET AVAILABILITY DURING 1H2020

Approximately 2,200 vessels are projected to be retrofitted with scrubbers by year-end 2021. Almost half the installations are scheduled to take place over three quarters, from the fourth quarter of 2019 to the second quarter of 2020. This will clearly lower the cargo-carrying capacity of individual fleets, but the effect is only temporal. The larger vessels within the Dry Bulk, Crude Tanker and Container segments are set to benefit the most. Freight rates could improve temporarily, but the effect seems unlikely to impact secondhand prices outside the Product Tanker space. Let us hope that a few months with higher earnings do not encourage owners to order an excessive number of new vessels.

UNCERTAIN DEMAND OUTLOOK

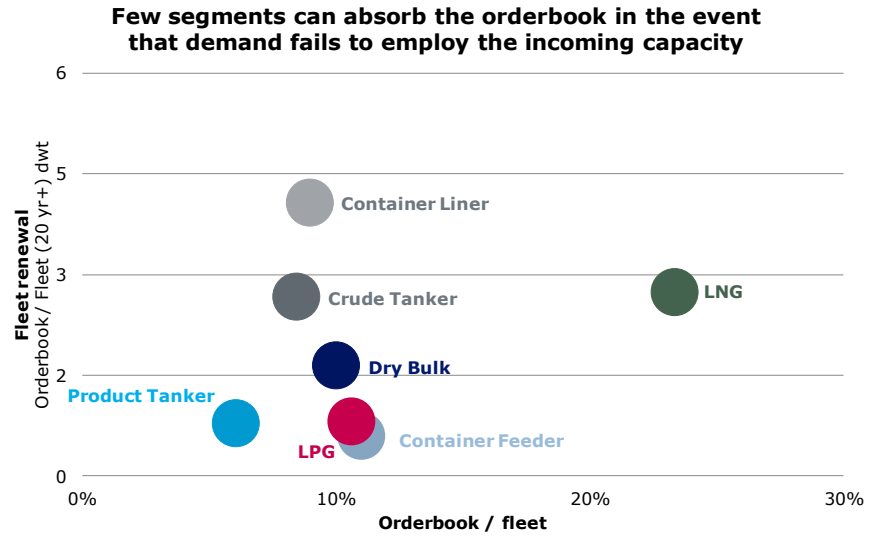
The challenge is that all shipping segments are geared towards further growth in trade volumes. Few segments are capable of handling significant negative surprises in demand or absorbing another round of new vessels (fig. 5). The shrinking orderbooks are currently improving the outlook, but structural shifts in the underlying industries (e.g. the energy transition, regional manufacturing, shortening global supply chains, circular material flows, etc.) are raising concerns about seaborne trade volumes in the

Figure GRO.5



Sources: Clarksons, Danish Ship Finance

Figure GRO.6



Sources: Clarksons, Danish Ship Finance

medium to long term. China's Belt and Road Initiative and the low interest rate environment have not managed to prevent seaborne iron ore volumes from falling in the last year or two. The lower iron ore volumes could signify an increased risk of lower growth in fossil fuel consumption and lower economic activity ahead.

IT IS MOSTLY LARGER VESSELS THAT ARE EXPOSED

When we look at the individual segments, it is clear that some segments are more exposed to the supply-side expansion than others. The fleets of larger vessels are generally younger than their smaller cousins, while the more niche segments are coping with a more fragile equilibrium than their more regular counterparts. The LNG segment is still subject to a large orderbook and a young fleet that leaves little room for ordinary scrapping to balance the market in times of surplus capacity. The larger Container vessels face similar problems, together with VLCCs, Suezmaxes, VLGCs, LRs and Capesize vessels (fig. 7).

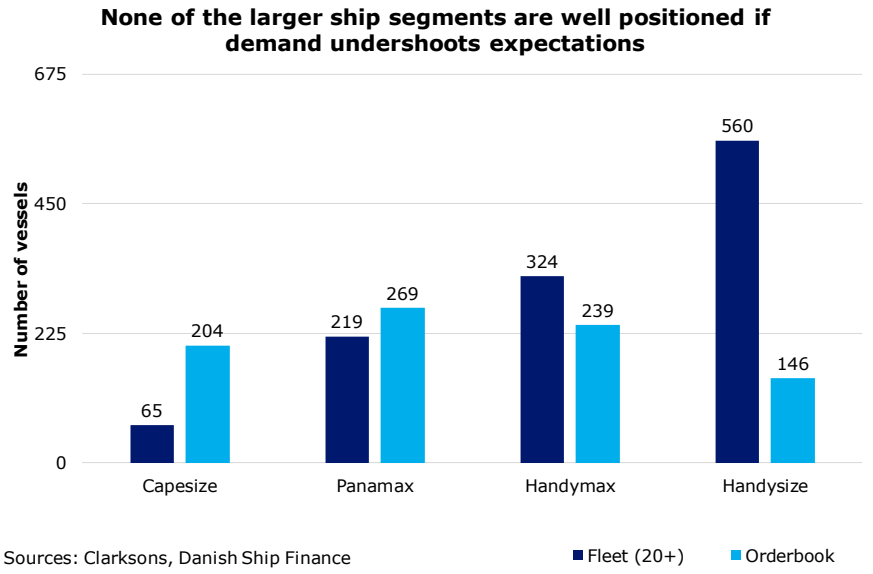
EXTRAORDINARY DEMOLITION ACTIVITY IN 2020

Market conditions are the main driver determining scrapping activity. The many vessels scheduled to be delivered in 2020 could reduce fleet utilisation in many segments and inspire more owners to scrap more vessels in 2020-2021. Owners may have limited incentive to retrofit elderly vessels with high fuel consumption.

OLDER VESSELS COULD SEE UNEXPECTED VALUE DEPRECIATIONS

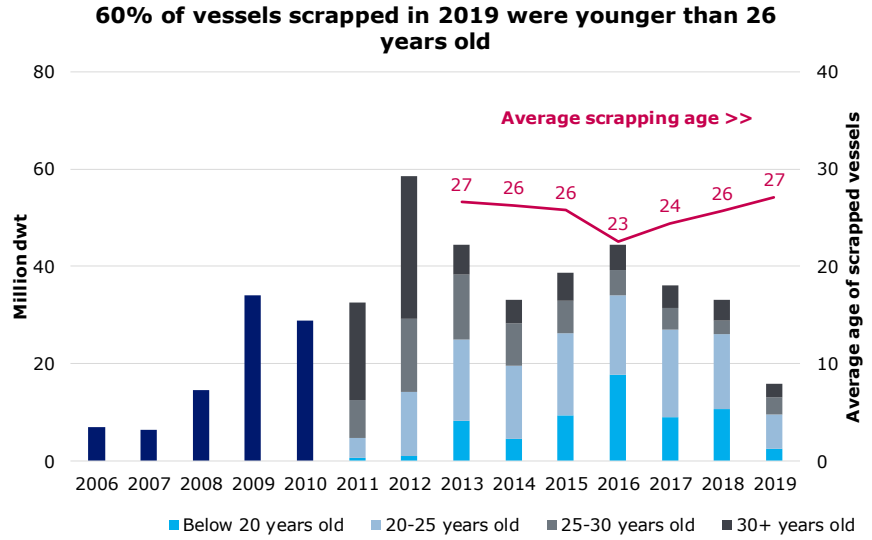
Secondhand prices of older vessels have been supported by an increase in the average scrapping age from 23 years in 2016 to 27 years in 2019 (fig. 7). This increase has on average added two years of additional earnings to older vessels' secondhand prices. However, this trend is masking a structural challenge that may unexpectedly cause value depreciations in many of the larger segments: these could potentially run out of older vessels to scrap within the next year or two. Take the Capesize segment as an example. There are currently about 200 vessels in the orderbook

Figure GRO.7



Sources: Clarksons, Danish Ship Finance

Figure GRO.8



Sources: Clarksons, Danish Ship Finance

(11% of the fleet), of which 140 vessels are scheduled to be delivered before year-end 2020. The fleet has only 65 vessels that are older than 20 years and 180 that are older than 15 years (fig. 6). The economic lifetimes of older vessels could drop significantly, maybe by more than five years within the next 18 months. This could be the case if demand fails to employ the incoming vessels and owners begin to scrap to balance the market. It remains to be seen whether such a drop will only impact the secondhand prices of older vessels or if the absence of old vessels in the fleet will affect the economic lifetimes of the entire fleet.

CO_2 TARGETS ARE LOWERING THE VALUE OF OLDER VESSELS

At present, we are seeing older vessels priced more in line with the current market, while younger vessels are being priced to reflect high expectations for future earnings. The introduction of CO_2 targets may exert additional price pressure on vessels with higher bunker consumption (often older vessels), since they may become less bankable than their more fuel-efficient counterparts. This effect is clearly expected – fleet renewal is a vital element in the journey towards a greener and cleaner world fleet – but for individual owners, it may come as an unpleasant surprise which raises the barriers for fleet renewal. ▪

SHIPBUILDING

SHIPBUILDING

THE SHIPBUILDING INDUSTRY HAS BEEN BURDENED BY SURPLUS CAPACITY FOR THE PAST DECADE. YARDS HAVE MANAGED TO CREATE PERIODS OF EXTRAORDINARY DEMAND BY INTRODUCING MORE ENERGY-EFFICIENT VESSELS AT LOW PRICES. THE INDUSTRY IS PROGRESSING TOWARDS A MORE CONSOLIDATED MARKET STRUCTURE THAT IN TIME MAY BEGIN TO BUILD THE NEXT-GENERATION STANDARDISED, DIGITAL AND DECARBONISED VESSELS WHICH FOR NOW KEEPS ORDERING LOW.

NEWBUILDING PRICES

NEWBUILDING PRICES REMAIN LOW AND STABLE, WHILE THE INDUSTRY IS CONSOLIDATING AND YARD CAPACITY IS CLOSING.

NEWBUILDING PRICES REMAIN FAIRLY STABLE

Newbuilding prices in the major shipping segments have been largely stable since 2012. In fact, prices have fluctuated from one year to another, between vessel segments, regions and yards, but the overriding trend signals a yard industry with low utilisation that is struggling to secure new orders – even at low prices – while it consolidates (fig. 1).

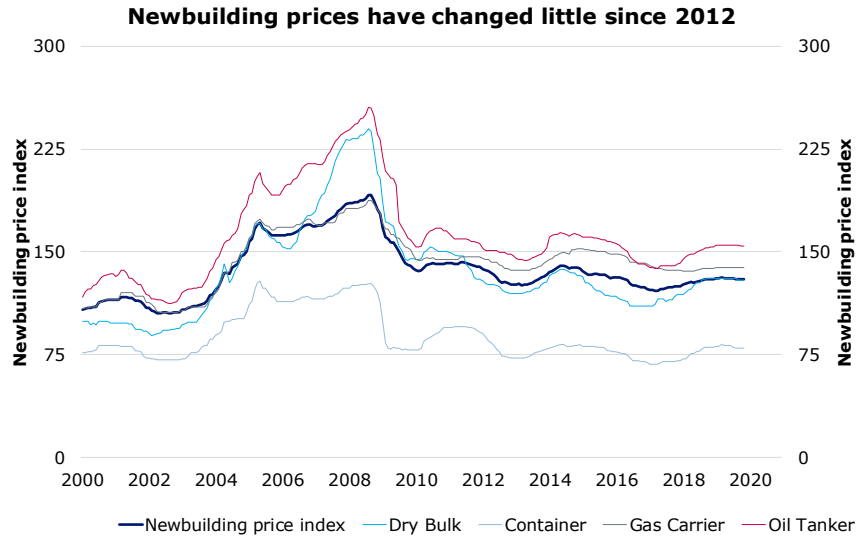
PRICES ARE BEING SETTLED AMONG FEWER YARDS

The development in steel prices, currency fluctuations, cost pressure and equipment costs are clearly playing a part in the regional competition between yards, but these trends fail to overshadow the fact that newbuilding prices are being settled among ever fewer yards that are struggling to utilise their capacity. It is hard to raise prices when many yards are competing to secure orders.

SURPLUS CAPACITY DICTATES PRICES

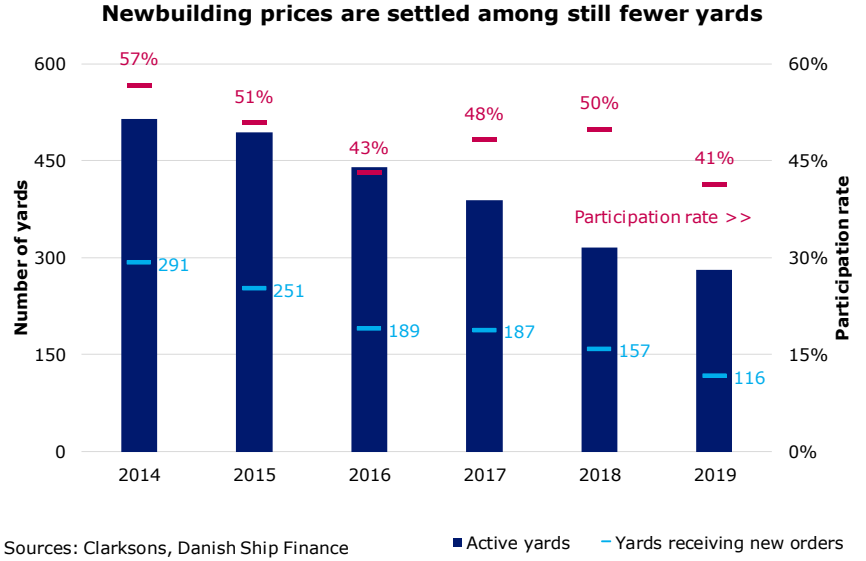
In 2019, newbuilding prices have been settled among 116 yards that received new orders, while 281 yards currently have an orderbook. A group of 74 yards have received 87% of all orders measured in cgt, but they have restocked only enough to employ their yard capacity for half a year. The surplus capacity continues to dictate low and relatively stable prices.

Figure SB.1



Sources: Clarksons, Danish Ship Finance

Figure SB.2



Sources: Clarksons, Danish Ship Finance

A SMALL GROUP OF YARDS ARE RECEIVING THE LION'S SHARE OF ORDERS, BUT CONTRACTING ACTIVITY IN 2019 HAS HARDLY BEEN ENOUGH TO KEEP CAPACITY EMPLOYED FOR LONG.

Global contracting activity has been low in 2019. The global fleet is young, and few segments have a direct need to renew their fleets beyond their current orderbooks. There is considerable uncertainty concerning future propulsion systems, fuel composition and the overall blueprints for the next-generation vessels.

THE CONSOLIDATION PROCESS CONTINUES

The shipbuilding industry continues to consolidate to reduce surplus capacity. Yards are being acquired or merged and capacity is being closed. More than 200 yards have closed during the past five years and there are now 281 yards recorded as having an orderbook. More yards are expected to close, but the consolidation process will take time.

A SMALL GROUP OF YARDS SEEM TO BE OUTPERFORMING THEIR PEERS

In 2019, 116 yards have received new orders, dominated by a group of 74. These yards have secured 87% of contracted capacity, while a total of 48 yards have restocked their delivered capacity. Ten yards received half of all orders (fig. 3).

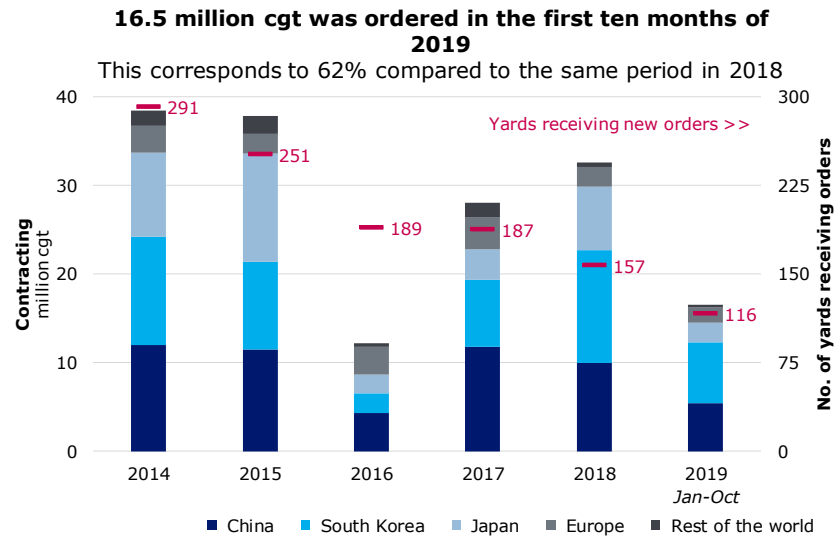
30% OF GLOBAL CAPACITY HAS NOT ATTRACTED ANY NEW ORDERS

A group of 165 yards, representing 30% of global capacity, have not landed any new orders in 2019. 118 of these, accounting for 20% of global capacity, will run out of orders within the next year.

SOUTH KOREAN YARDS RANK FIRST

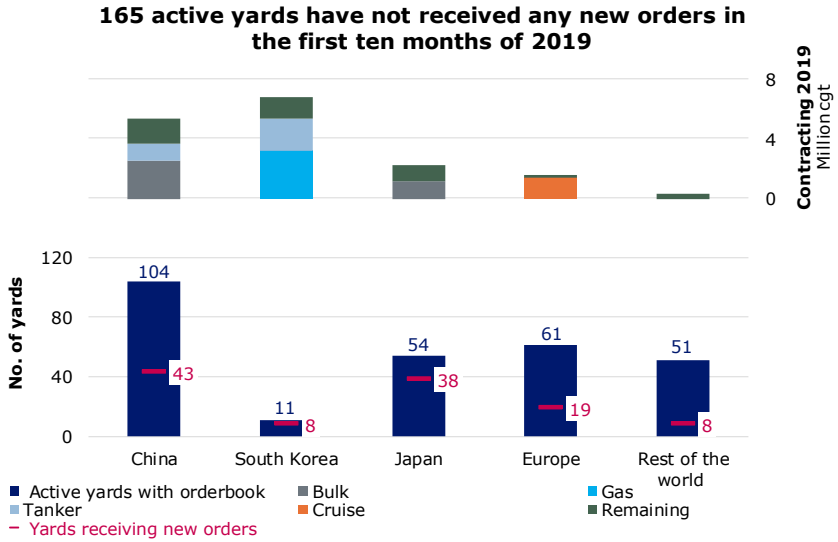
South Korea has secured new orders with a combined capacity of 6.9 million cgt distributed among only eight yards, while China has attracted new orders to the tune of 5.4 million cgt split between 43 yards. Orders from state interests at domestic yards have dominated Chinese contracting activity during 2019 (fig. 4).

Figure SB.3



Sources: Clarksons, Danish Ship Finance

Figure SB.4



Sources: Clarksons, Danish Ship Finance

YARDS' CONSOLIDATION EFFORTS ARE BEGINNING TO SHOW IN THEIR OUTPUT, WITH MORE ORDERS BEING DELIVERED ACCORDING TO SCHEDULE. THE NUMBER OF YARDS DELIVERING HAS FALLEN FROM 350 IN 2014 TO 215 IN 2019.

Deliveries for the first ten months of 2019 were higher than for the same period in 2018. If the current delivery performance continues, delivered capacity should end up above the 2018 level for this year. A total of 27.5 million cgt was delivered in the first ten months from 215 yards (fig. 5). A group of 74 yards, representing half the capacity, delivered 64% of the capacity in 2019.

FEWER YARDS ARE DELIVERING NEW VESSELS

The consolidation process is clearly visible when we look at the number of yards building new vessels. The number of yards building new vessels has halved between 2014 and 2019 in both South Korea and Europe, while in China the number has dropped from 142 in 2014 to 94 in 2019. Japan stands out with a relatively stable group of yards that have increased deliveries by 10% during the period.

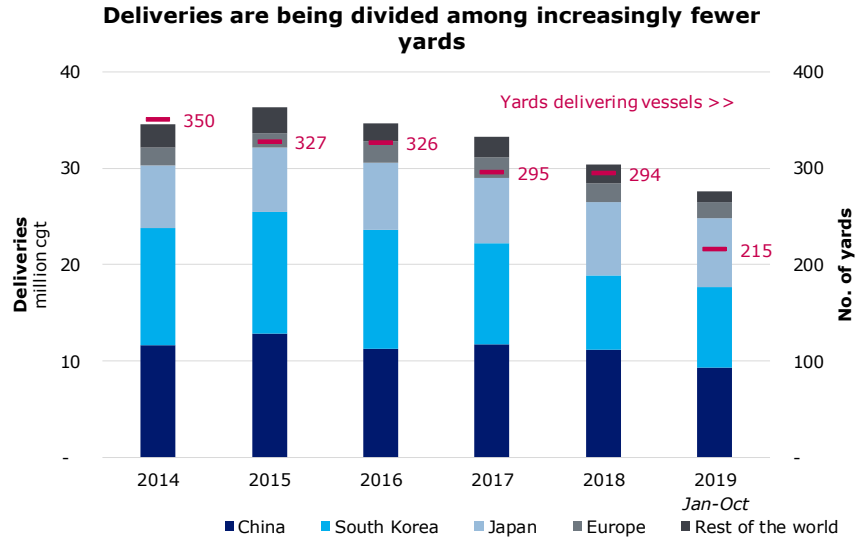
MORE VESSELS ARE BEING DELIVERED ACCORDING TO SCHEDULE

The delivery performance has improved since 2014. Only two-thirds of orders were delivered on schedule between 2014 and 2018. In 2019, this figure has increased to almost 90%, which could signal that some of the worst-performing yards have left the scene (fig. 6).

SURPRISING MOVEMENTS WITHIN THE ORDERBOOK

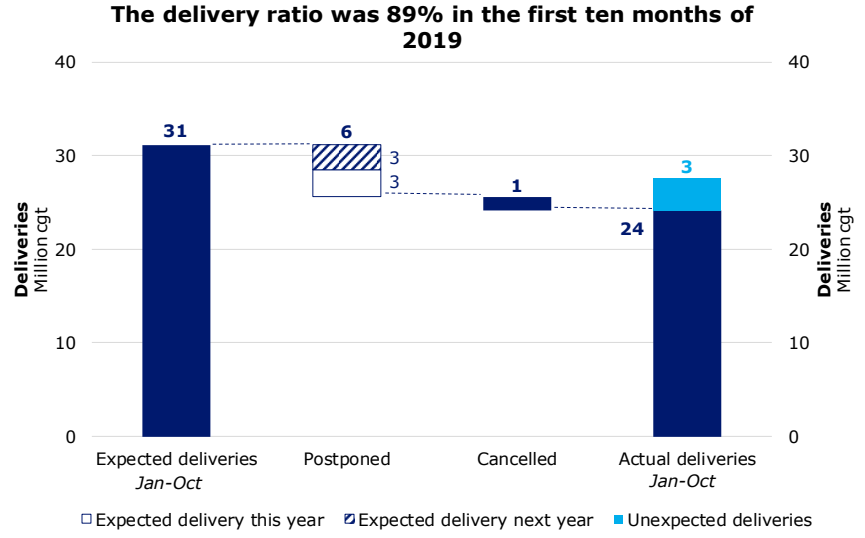
We have seen some surprising movements within the orderbook this year, with 3 million cgt scheduled for 2020 delivery materialising during 2019 and vice versa for another 3 million cgt. Only 5% of the vessels scheduled for delivery in 2019 have been outright cancelled. Japanese yards received half the cancellations.

Figure SB.5



Sources: Clarksons, Danish Ship Finance

Figure SB.6



Sources: Clarksons, Danish Ship Finance

THE ORDERBOOK CONTINUES TO SHRINK AND FEWER YARDS ARE BUILDING NEW VESSELS. TWO-THIRDS OF THE ORDERBOOK IS SCHEDULED TO BE DELIVERED WITHIN THE NEXT 18 MONTHS.

The orderbook is at its lowest level in 15 years with just 2,600 vessels or 70 million cgt on order. This corresponds to 9% of the global fleet measured in dwt. The orderbook has declined by 12% during 2019; 16.5 million cgt has been ordered while 27.5 million cgt has left the orderbook.

FEW YARDS ARE BUILDING MOST OF THE VESSELS

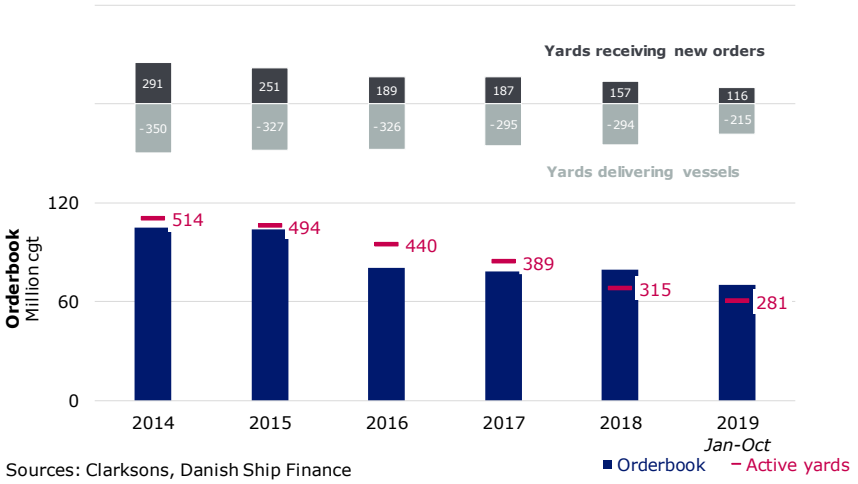
The number of yards with orderbooks has declined by more than 200 since 2014. The orderbook is currently allocated between 281 yards but is unevenly distributed. A group of 74 yards, representing 51% of yard capacity, account for 72% of the orderbook. The 165 yards that have not received any orders in 2019 represent 30% of global yard capacity but only 19% of the orderbook. The remaining 42 yards have received new orders in 2019, representing 20% of yard capacity, but account for only 9% of orders, all of which are scheduled to be delivered within the next year (fig. 8).

MANY YARDS WILL SOON RUN OUT OF ORDERS

The orderbook stretches beyond 2024 but is heavily frontloaded. Two out of three vessels are due to be delivered within the next 18 months. Japanese yards are scheduled to deliver 85% of their orderbook in this period, China 71% and South Korea 63%. European yards are better positioned with only 31% of the orderbook scheduled to be delivered within the next 18 months.

Figure SB.7

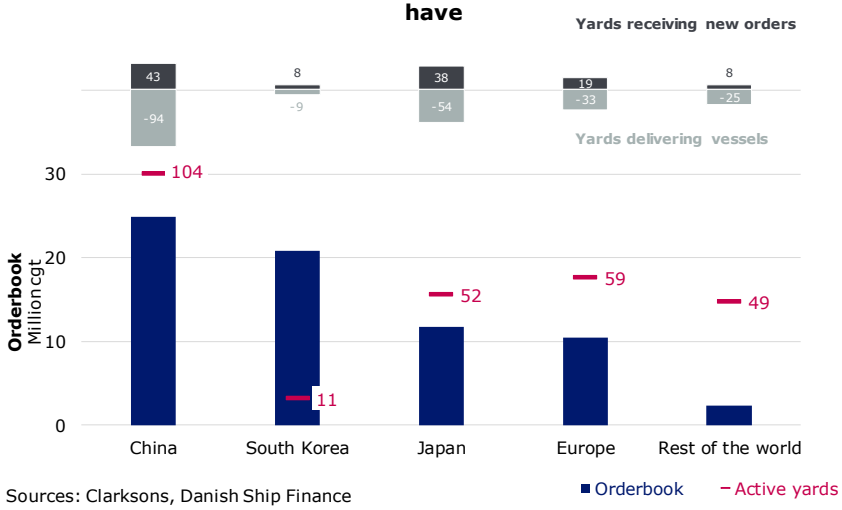
215 yards have delivered new vessels in 2019 while only 116 have received new orders



Sources: Clarksons, Danish Ship Finance

Figure SB.8

Seven out of ten South Korean yards have received new orders in 2019 while fewer than half of Chinese yards have



Sources: Clarksons, Danish Ship Finance

GLOBAL YARD UTILISATION HAS AVERAGED 50% IN 2019, BUT A GROUP OF 121 YARDS, REPRESENTING 60% OF YARD CAPACITY, HAVE UTILISED 60% OF THEIR CAPACITY. THE REMAINING 160 YARDS HAVE ONLY HAD UTILISATION OF 30%.

Global yard capacity is currently estimated at 55 million cgt divided between 281 yards. The 30 largest yards represent more than 50% of the capacity. The largest yard has an estimated annual capacity of 4 million cgt, while the smallest of the top 30 yards has one-tenth of that.

CONSOLIDATION CONTINUES TO PROGRESS

The consolidation process has resulted in the closure of more than 230 yards with a combined capacity of 20 million cgt since 2014. This corresponds to an annual average of 4 million cgt divided between almost 50 yards.

YARD CAPACITY HAS DECLINED BY 6% IN 2019

In 2019, 34 shipyards with a combined capacity of 3 million cgt have closed. Chinese yards have contributed the most with 2 million cgt closed, distributed among 16 yards. The Chinese yards that have shut down in 2019 have thereby been almost 40% larger than the average size of the yards closed.

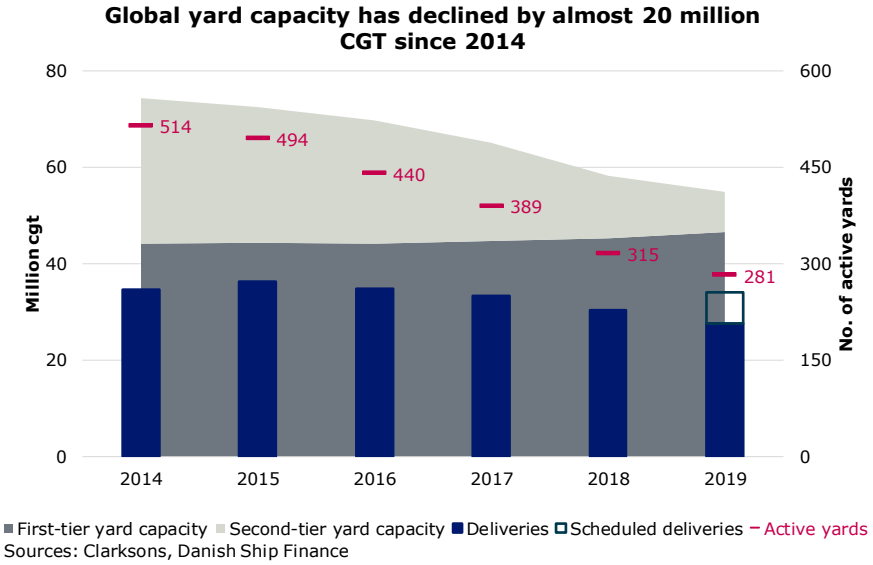
50% OF YARD CAPACITY UTILISED IN 2019

Utilisation has averaged 50% in 2019, but there are large variations. The 121 yards with order cover beyond one year, representing 59% of capacity, have had average utilisation of 60%, while the other 160 yards have only utilised 30% of their capacity.

74 YARDS SEEM TO STAND OUT FROM THE CROWD

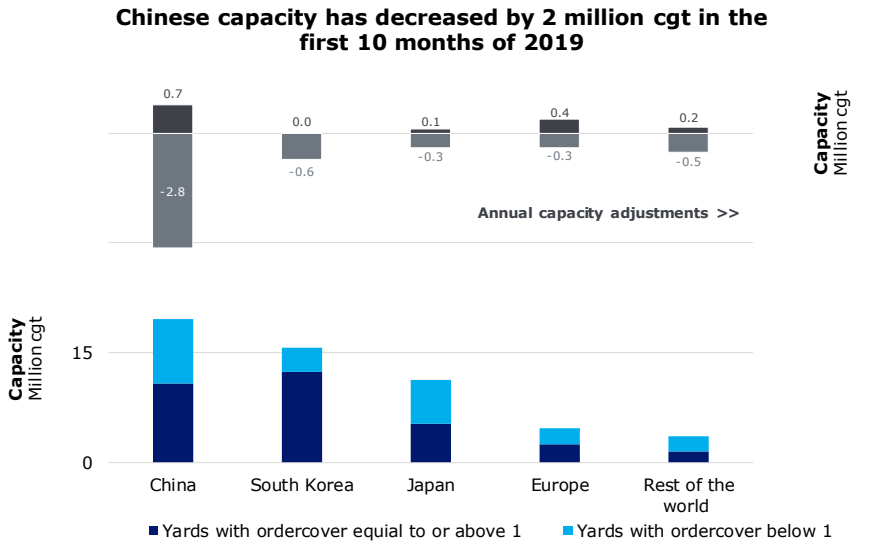
There is a group of yards, 25 Japanese and 49 Chinese, with order cover beyond one year, representing 30% of global yard capacity but 40% of the orderbook, that seem to be outperforming even the large South Korean yards with average utilisation of 67%.

Figure SB.9



Sources: Clarksons, Danish Ship Finance

Figure SB.10



Sources: Clarksons, Danish Ship Finance

YARD UTILISATION IS SET TO IMPROVE IN 2020 BUT SEEMS LIKELY TO BECOME VERY CHALLENGED AGAIN IN 2021. THERE IS HUGE VARIATION BETWEEN YARDS. SCALE DOES NOT SEEM TO BE MUCH OF AN ADVANTAGE IN SHRINKING MARKETS.

Global yard capacity is set to be utilised at an average rate of 61% in 2020, since 34 million cgt is scheduled to be delivered. The 121 yards that have order cover beyond one year, representing 60% of global capacity, are set to utilise 84% in 2020, while the remaining 160 yards are only scheduled to utilise 29% of their capacity (fig. 11).

SOUTH KOREA IS SET TO UTILISE 59% OF CAPACITY IN 2020

The large South Korean yards seem to be struggling to utilise their vast capacity. They are scheduled to utilise 59% of their capacity in 2020, while four yards representing 20% of domestic capacity seem poised only to utilise 38% of their capacity next year. The seven best-performing South Korean yards, accounting for 23% of global capacity, are scheduled to utilise 64% of their capacity in 2020.

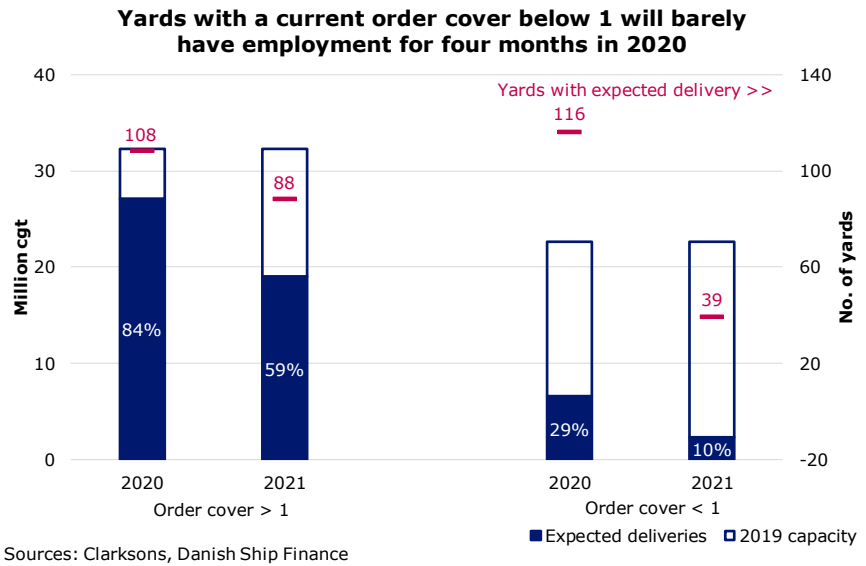
A SMALL GROUP ARE SCHEDULED TO UTILISE 99% OF THEIR CAPACITY

The group of 25 Japanese and 49 Chinese shipyards with order cover beyond one year are once again scheduled to outperform their peers. They expect to utilise 99% of their capacity in 2020.

2021 LOOKS LIKELY TO BE PARTICULARLY CHALLENGING FOR MANY

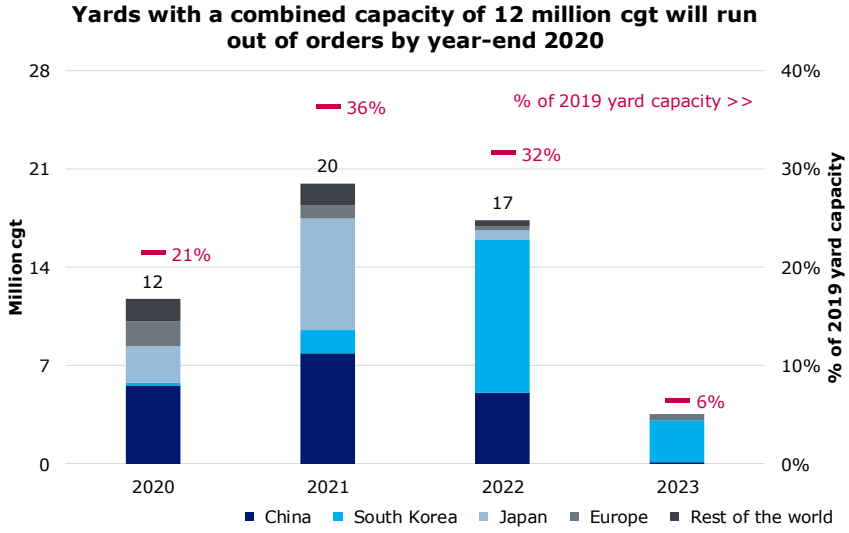
Orderbooks are looking thin for 2021. The current orderbook suggests that only 46% of global yard capacity is scheduled to be utilised in 2021. Of course, new orders are likely to be placed and capacity may close, but, as it stands as of end-October, 150 yards, whose combined capacity of 12 million cgt represents 21% of global yard capacity, are due to deliver their last orders by year-end 2020. Idle yard capacity is only expected to grow if the

Figure SB.11



Sources: Clarksons, Danish Ship Finance

Figure x.12



Sources: Clarksons, Danish Ship Finance

appetite for new vessels does not improve or if no more yards are closed (fig. 12).

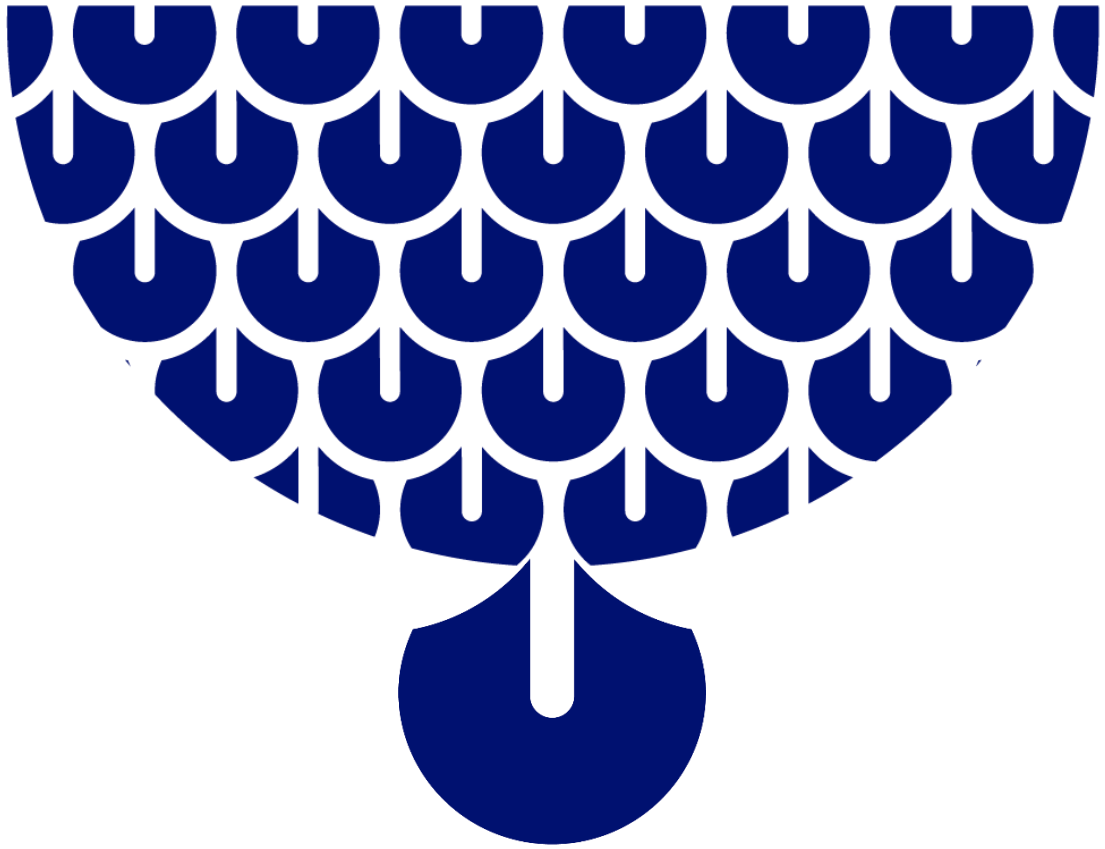
NEXT-GENERATION VESSELS WILL REQUIRE DIFFERENT SKILLS

Few new vessels are likely to be ordered in the coming years until there is more clarity on future propulsion systems, fuel composition and the overall blueprints for next-generation vessels. The consolidation of the shipbuilding industry is therefore likely to continue. Smaller, less-efficient and less sophisticated yards are likely to close. But the super-large yards are also vulnerable, as their mere size requires them to build many vessels in a low market. Time will tell which will survive and which will not, but it seems beyond doubt that the coming years will be very challenging for most shipyards.

METHODOLOGY

- Vessels > 2,000 dwt
- Yards with an orderbook are defined as active
- Yard capacity is defined as maximum historic one-year output

CONTAINER



CONTAINER

A LARGE INFLOW OF POST-PANAMAX VESSELS HAS RESULTED IN SURPLUS CAPACITY ACROSS THE SEGMENTS. DEMAND GROWTH IS NOT SUFFICIENT TO EMPLOY THE GROWING FLEETS. SCRAPPING IS LIKELY TO INTENSIFY, SINCE FUEL-INEFFICIENT VESSELS MAY FIND IT HARDER TO BE EMPLOYED. SMALLER VESSELS ARE GENERALLY ENJOYING A MORE POSITIVE OUTLOOK.

FREIGHT RATES

BOX RATES ARE BEING CHALLENGED BY AN INCREASED NUMBER OF POST-PANAMAX VESSELS AND THE ENSUING CASCADING. HOWEVER, RETROFITTING OF VESSELS WITH SCRUBBERS HAS REDUCED FLEET AVAILABILITY, TEMPORARILY SUPPORTING FREIGHT RATES.

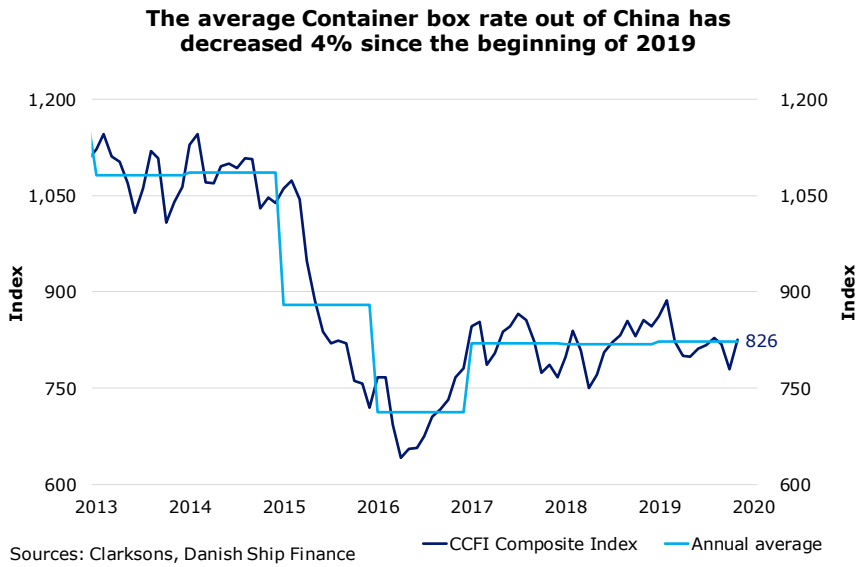
THE CONTAINER BOX MARKET IS ENJOYING STABLE RATES

Expansion of the Post-Panamax fleet continues to contribute to overcapacity on the Asia-Europe westbound route as well as cascading capacity into other routes. This is putting a lid on box rates and keeping the 2019 annual average at the level seen in the past few years. The box rate out of China hit an annual low at the end of May at index 799. It then climbed to index 818 in September but went back down to index 779 in October (fig. 1). As of the end of November, the box rate was down 4% compared to January 2019.

RETROFITTING IS CAUSING INSTABILITY IN THE TIMECHARTER MARKET

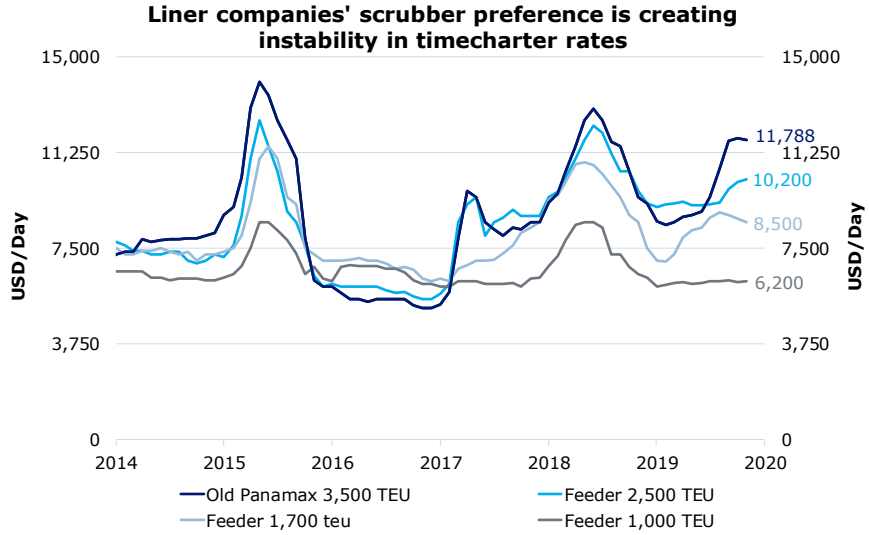
Liner companies seem to prefer chartering in vessels that are retrofitted with scrubbers to avoid any service interruptions caused by possible shortages of low-sulphur fuel. This preference is splitting the market. During 2019, 95 vessels below 5,000 teu have been retrofitted (3% of the fleet), thereby creating a temporal shortage of vessel availability. In 2019, one-year timecharter rates have increased by 13% on average, while for the 3,500 teu segment it has increased by 27% (fig. 2).

Figure C.1



Sources: Clarksons, Danish Ship Finance

Figure C.2



Sources: Clarksons, Danish Ship Finance

THE INFLOW OF POST-PANAMAX VESSELS PERSISTS AND THE RESULTING CASCADING MEANS CAPACITY CONTINUES TO INCREASE THROUGHOUT THE MARKET, WHILE DEMAND IS STRUGGLING.

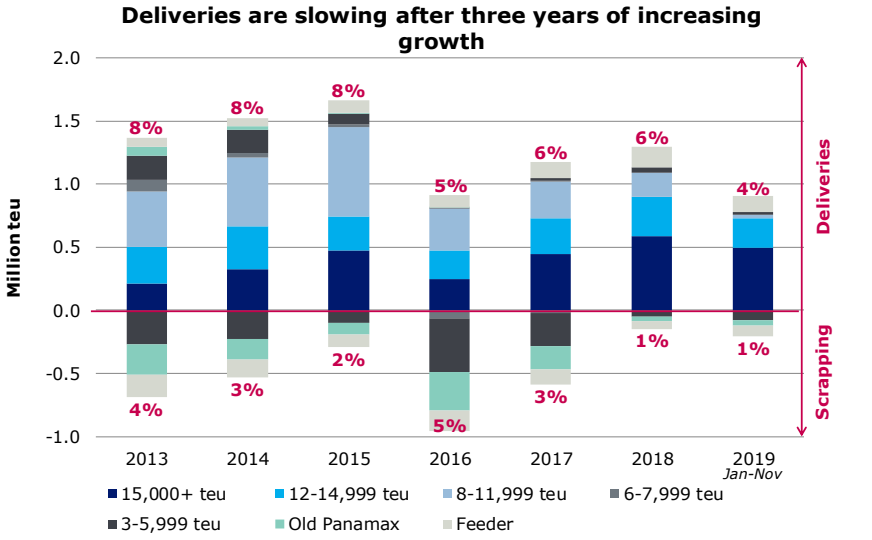
FLEET GROWTH IS BEING DRIVEN BY LARGER VESSELS AND CASCADING

In 2019, the Post-Panamax fleet (>12,000 teu) has grown by some 13%. This has boosted capacity on the Asia-Europe trade by 6%. As a result, some 8-11,999 teu vessels have been removed from this trade and put in service on the transatlantic trade. This has led to capacity on this trade increasing by 5%, despite no fleet growth in the 8-11,999 teu and 3-7,999 teu segments (fig. 3). On the transpacific trade, the capacity level has remained stable in 2019. The active fleet has grown by 3.4% but has been temporarily reduced by up to 0.7% due to retrofitting of vessels with scrubbers. A 2% average speed reduction has had a mitigating effect on active fleet capacity growth too.

MODERATE DEMAND GROWTH

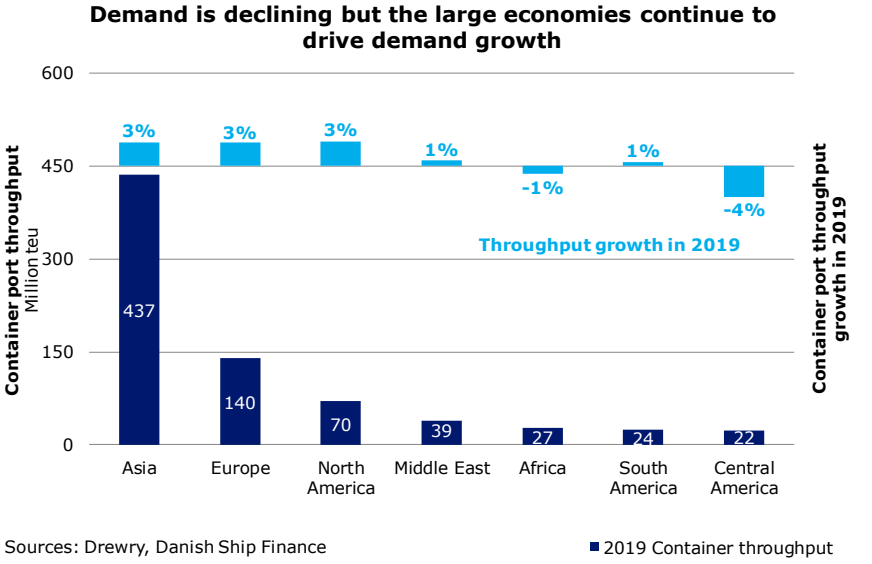
In the first six months of 2019, the Asia-North Europe trade grew by 5% driven by increased Chinese shipments, which seems to be a spill-over effect of the US-China trade tensions. However, the rise in the number of Post-Panamax vessels lowered this route's utilisation rate. Transpacific trade eastbound remained static. Strong US purchasing power, absorption of tariffs by US importers and Chinese exporters, and a redirection of trade kept trade steady. Head-haul volumes rose by 5.7% on the transatlantic lane due to solid US demand. Still, the utilisation rate declined on this route. Central and South American demand declined, as several countries in the region have challenged economies, putting pressure on the North-South trade utilisation rate (fig. 4). The main beneficiary of the trade tensions seems to be the smaller Container segments due to increased intra-Asia trade.

Figure C.3



Sources: Clarksons, Danish Ship Finance

Figure C.4



Sources: Drewry, Danish Ship Finance

CONTRACTING ACTIVITY IS SLOWING AS OWNERS AWAIT CLARITY ON FUTURE TECHNOLOGY AND FUEL TYPES. SECONDHAND PRICES ARE STABLE, BUT DOWNSIDE RISK FOR FUEL-INEFFICIENT VESSELS IS INCREASING.

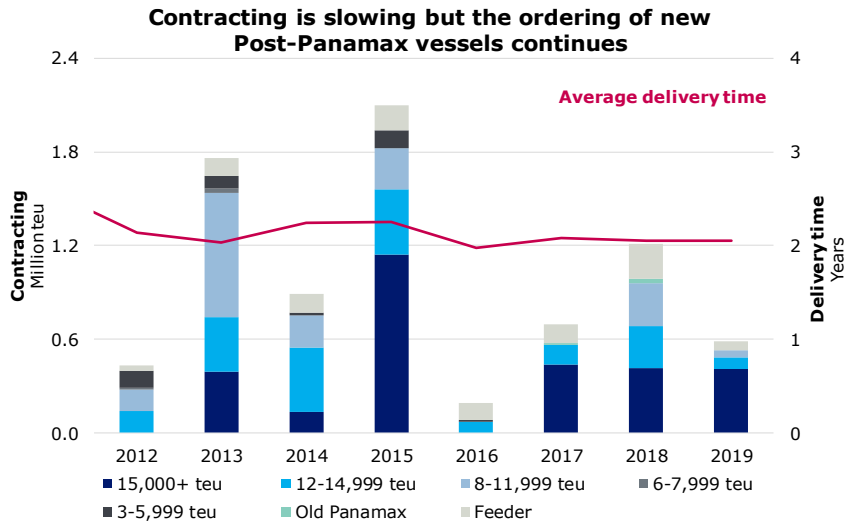
LOW CONTRACTING ACTIVITY DRIVEN BY NON-TRADITIONAL PLAYERS

Declining utilisation rates on long-haul trades and uncertainty over future fuel types seem to be keeping a lid on contracting activity. Only 0.6 million teu has been contracted, corresponding to 2.7% of the active fleet, mainly Post-Panamax vessels (fig. 5). In total, 26 Post-Panamax vessels were contracted, equal to 8% of the fleet. The main purchasers of these vessels have been financial leasing companies but with liner companies as end users. The rest of the contracting activity has been split between four 11,000 teu vessels and 32 Feeders (<3,000 teu). In 2019, 25% of contracted vessels have LNG as a fuel-option, meaning fuel considerations could spark some contracting activity. For the mid-sized vessels, contracting has been non-existent.

STABLE TIMECHARTER RATES MAKE FUEL EFFICIENCY THE MAIN DRIVER

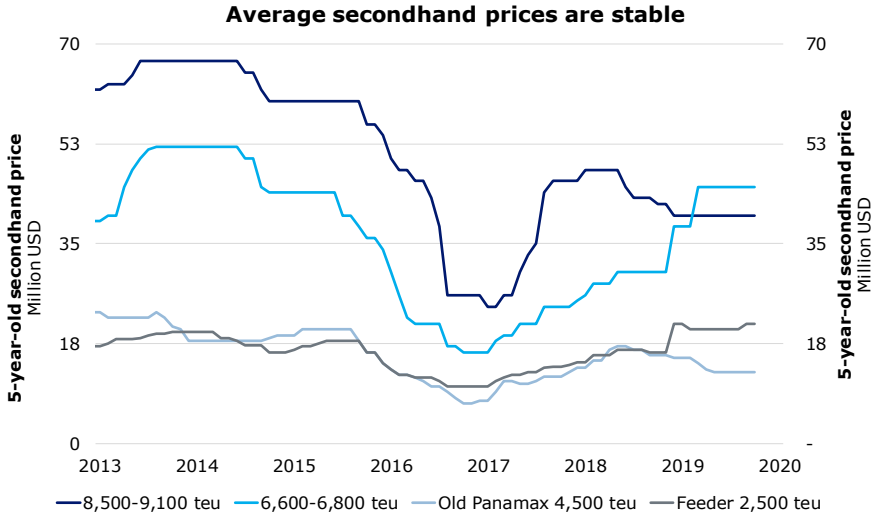
Uncertainty over older vessels' economic lifetimes has increased downside risk in secondhand prices for both older and less fuel-efficient vessels. The secondhand price for vessels older than ten years has weakened by 10-15%, while prices of younger vessels have increased by 10-15%. This could indicate that investors expect an improved fleet utilisation when older or less fuel-efficient vessels have been scrapped. The sale and purchase activity has declined in past years. Only 2-3% of fleets are traded in a year. Tonnage providers have been the primary sellers, signalling that some are facing a challenging environment. Buyers have been more diverse, although financial leasing companies have been the main buyers of 8-11,999 teu vessels which suggests increasing numbers of sale-lease-back agreements.

Figure C.5



Sources: Clarksons, Danish Ship Finance

Figure C.6



Sources: Clarksons, Danish Ship Finance

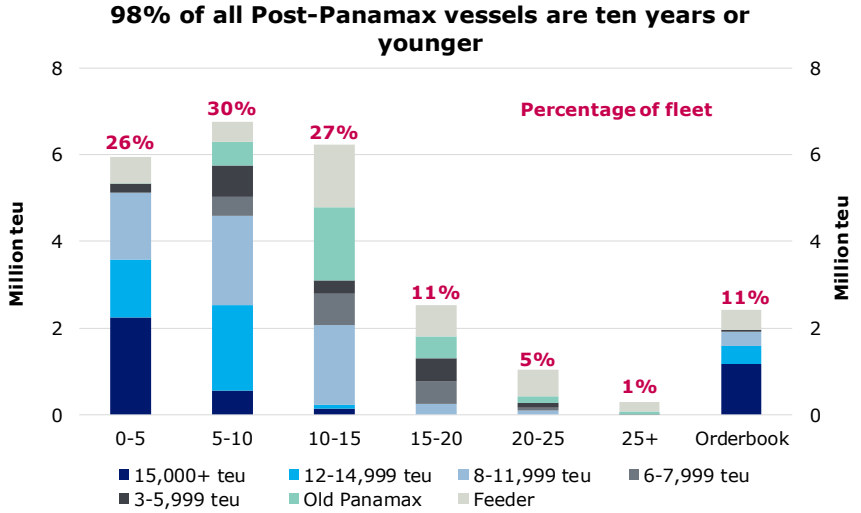
THE MASSIVE EXPANSION OF THE POST-PANAMAX FLEET WILL CONTINUE IN THE COMING YEARS. OWNERS' FOCUS ON OPTIMISING THE UTILISATION OF POST-PANAMAX VESSELS ON THE ASIA-EUROPE TRADE IS CASCADING CAPACITY DOWN TO OTHER ROUTES, BUT DEMAND CANNOT KEEP PACE.

The large inflow of Post-Panamax vessels is reshaping the composition of the fleet and increasing capacity on multiple routes through cascading. However, demand seems unlikely to absorb the increased capacity. Global trade is struggling due to declining growth rates in both imports of goods and industrial production. As a result, we expect utilisation rates to come under pressure across most vessel segments. This could spur a round of premature scrapping where tonnage providers are likely to be exposed the most. Our research suggests that the mid-sized vessel (6-7,999 teu) segments are at risk, in particular vessels with low fuel efficiency and no scrubbers installed. In contrast, the 3-5,999 teu segment seems to be prospering due to increased intra-Asian trade – potentially a positive side effect of the trade tensions between the US and China.

LARGE VESSELS WILL CONTINUE TO DRIVE FLEET EXPANSION

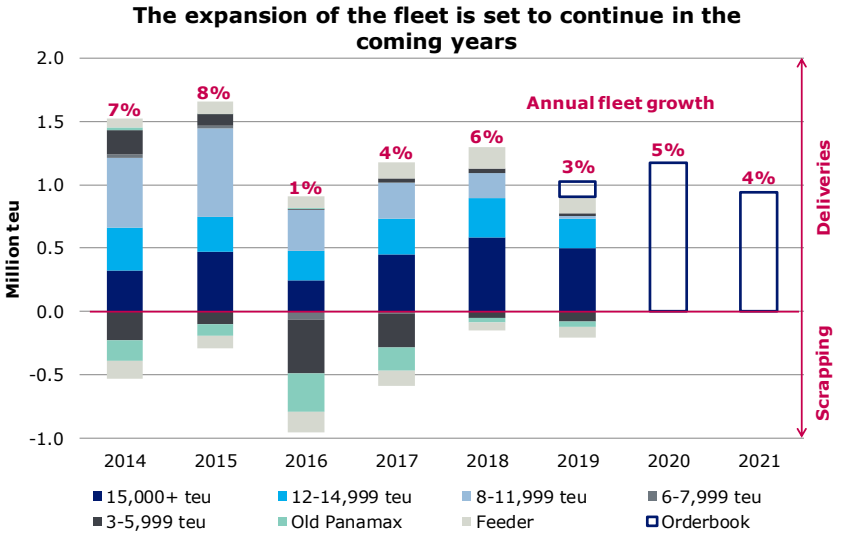
The Post-Panamax fleet will grow by approximately 14% and 11% in 2019 and 2020, respectively. Meanwhile, the fleet of vessels in the 3-12,000 teu category will grow less than 0.5% in both years. In 2019 and 2020, the Feeder segment (<3,000 teu) is due to increase by 2% and 7%, respectively. The age profile of vessels below 8,000 teu is evenly distributed and we expect the outflow to outpace the inflow (fig. 7). In contrast, almost all Post-Panamax vessels are younger than ten years, while the orderbook is equivalent to 30% of the Post-Panamax fleet.

Figure C.7



Sources: Clarksons, Danish Ship Finance

Figure C.8



Sources: Clarksons, Danish Ship Finance

CASCADING IS PUTTING PRESSURE ON THE MID-SIZED VESSEL SEGMENT

Tonnage providers are likely to suffer the most from the downward pressure caused by the inflow of Post-Panamax vessels, as they own two-thirds of the mid-sized segment and are highly exposed to reemployment risk due to the growing oversupply. In the small Container segment, exposure to cascading of supply is limited. We believe the Feeder segment is somewhat protected in the short to medium term due to infrastructural constraints.

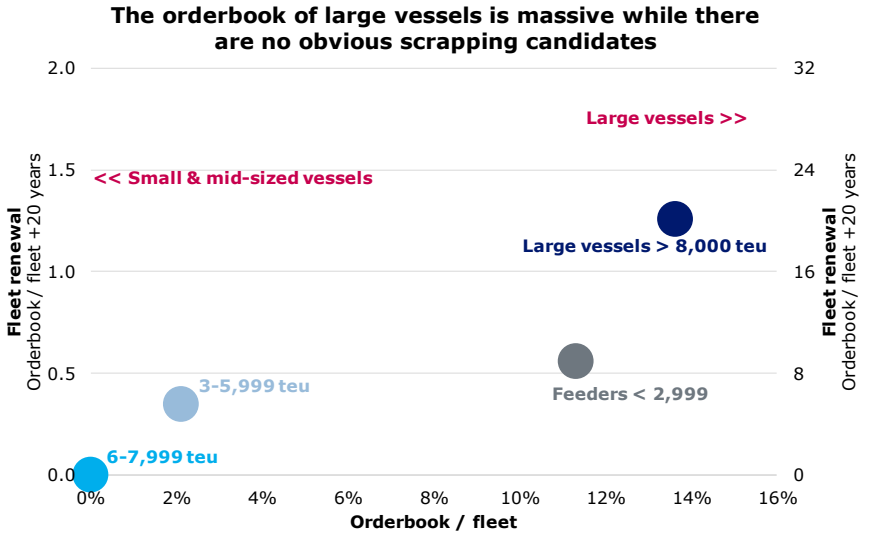
IMO 2020 REGULATION IS PRESSURISING FUEL-INEFFICIENT VESSELS

The IMO 2020 regulation is likely to impact secondhand prices, but the magnitude of this is still uncertain. We expect the uncertainty to keep sale and purchase activity low in the first half of 2020. When activity starts to ramp up again, vessels with high bunker consumption and no scrubbers installed are likely to experience extraordinary value depreciation (fig. 10). This most likely applies to already inefficient vessels built before 2009 without scrubbers. Vessels with the lowest fuel efficiency and no bunkering versatility are likely to struggle finding employment when liners optimise their future route network. This could cause more vessels to be scrapped prematurely.

REDIRECTION OF TRADE IS BENEFITING SMALL VESSELS

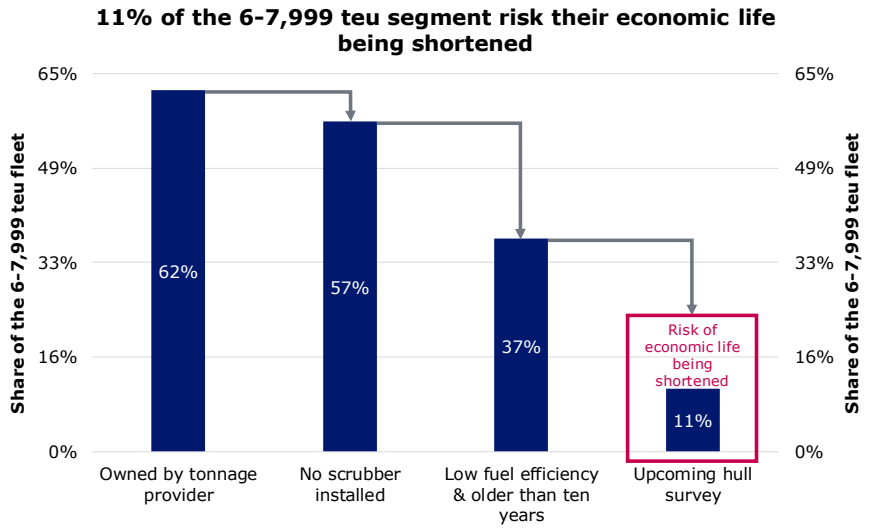
Trade tensions and uncertainty over global trade policies are likely to postpone major sourcing decisions on future manufacturing locations. Still, China's dominant role as production hub could change in the years to come. This is a major concern for owners of larger container vessels while owners of smaller vessels may benefit if manufacturing becomes more fragmented. At current, the 3-5,999 teu segment, which is dominating intra-Asian trade, seems to be benefiting from the ongoing trade tensions. A redirection of transpacific shipments from China to Southeast Asian countries has boosted intra-Asian trade, which has led to an increase in freight rates of 10% for 3-5,999 teu vessels in 2019. In the short term, the positive development is likely to continue in this region. Demand is set to increase by 3-4% in 2019 and 2020,

Figure C.9



Sources: Clarksons, Danish Ship Finance

Figure C.10



Sources: Clarksons, Danish Ship Finance

while fleet growth for the 3-5,999 teu segment is close to zero and port infrastructure constraints limit the threat from cascading capacity.

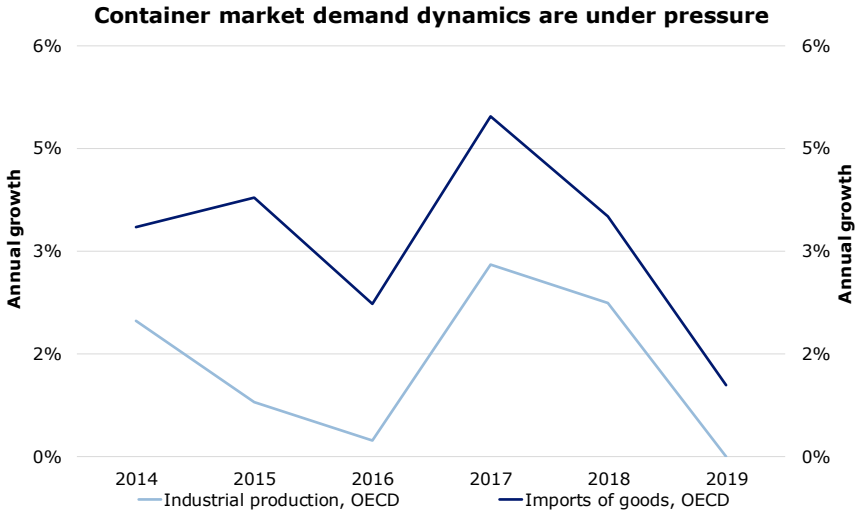
GLOBAL TRADE STANDSTILL IS THREATENING DEMAND GROWTH

The global economy has lost steam and the IMF projects an economic slowdown in 2019 and 2020 (fig. 11). In 2019, global trade is suffering and is estimated to grow at the lowest level since the financial crisis. However, the fleet is scheduled for growth. The declining utilisation of the Container fleet is therefore likely to continue. On the Asia-Europe route, average utilisation has dropped by 5 percentage points in two years to 85% in 2019 (fig. 12). Further cascading will work to level the supply surplus across trades, but it seems unlikely that average utilisation rates can be improved without extensive use of scrapping or vessels being laid up in the years to come.

A CHALLENGING ENVIRONMENT FOR BOX TRADE

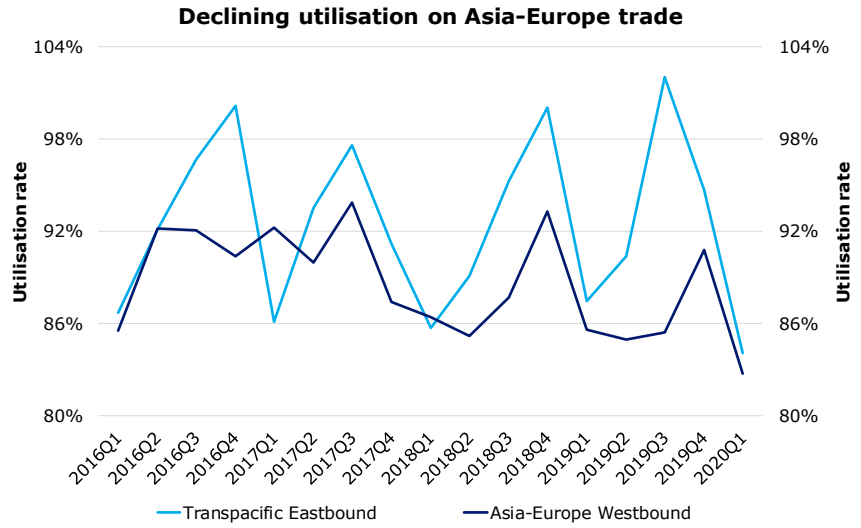
The market outlook is bleak, since surplus capacity is forcing larger vessels onto smaller vessels' routes. The situation seems unlikely to improve unless vessels are laid up or scrapped prematurely. Box rates are likely to stay low, while older vessels may become subject to extraordinary value depreciation. Still, improved supply-demand balances on intra-regional trade is creating optimism regarding timecharter rates for old Panamax vessels and smaller Container vessels.

Figure C.11



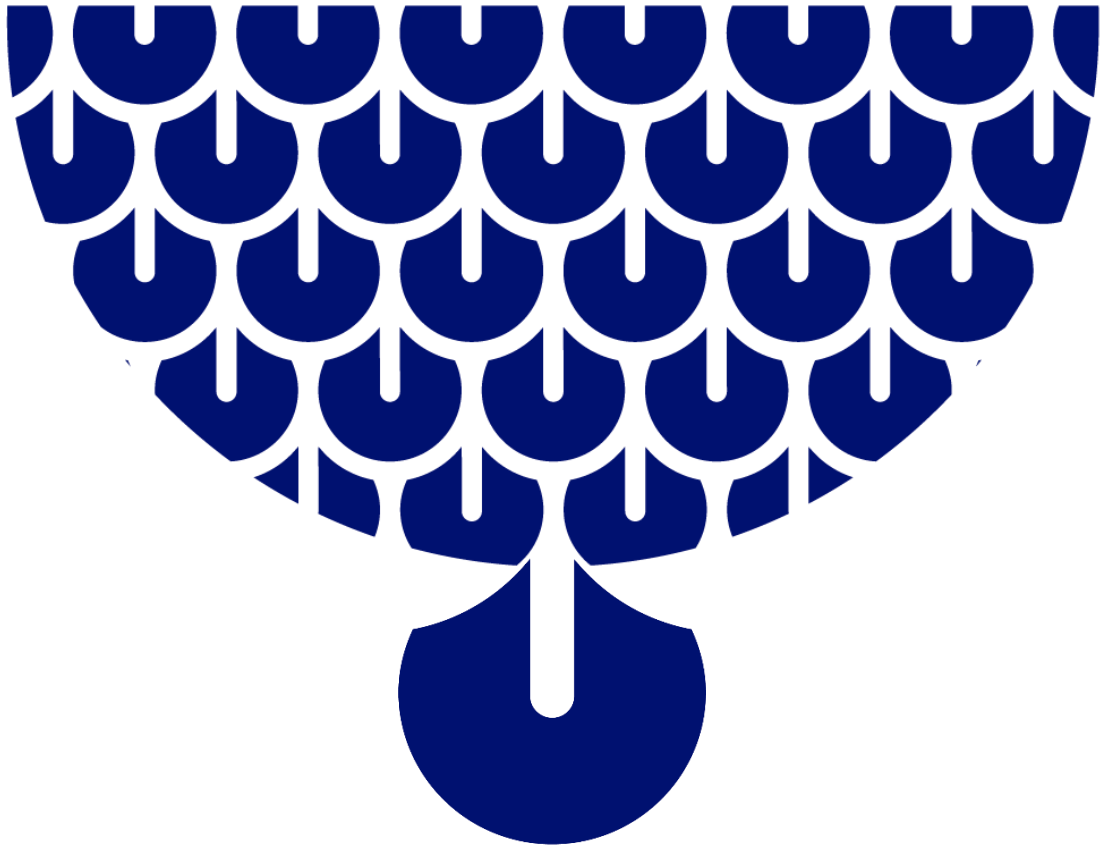
Sources: IMF, Clarksons, Danish Ship Finance

Figure C.12



Sources: Drewry, Danish Ship Finance

DRY BULK



DRY BULK

THE SMALLER VESSEL SEGMENTS SEEM TO BE HEADING TOWARDS A PERIOD OF HIGHER FREIGHT RATES AND INCREASING SECONDHAND PRICES. THE LARGER SEGMENTS ARE NOT POSITIONED FOR SUCH A RECOVERY AND OLDER VESSELS COULD BE SUBJECT TO SIGNIFICANT VALUE DEPRECIATION.

FREIGHT RATES

FLUCTUATING CARGO AVAILABILITY HAS CREATED LARGE VOLATILITY IN FREIGHT RATES. TIMECHARTER RATES ARE SLIGHTLY ABOVE THEIR JANUARY LEVELS BUT MAY BE DIFFICULT TO MAINTAIN GOING FORWARD.

CARGO DISRUPTION CREATES MARKET UNCERTAINTY AND VOLATILITY

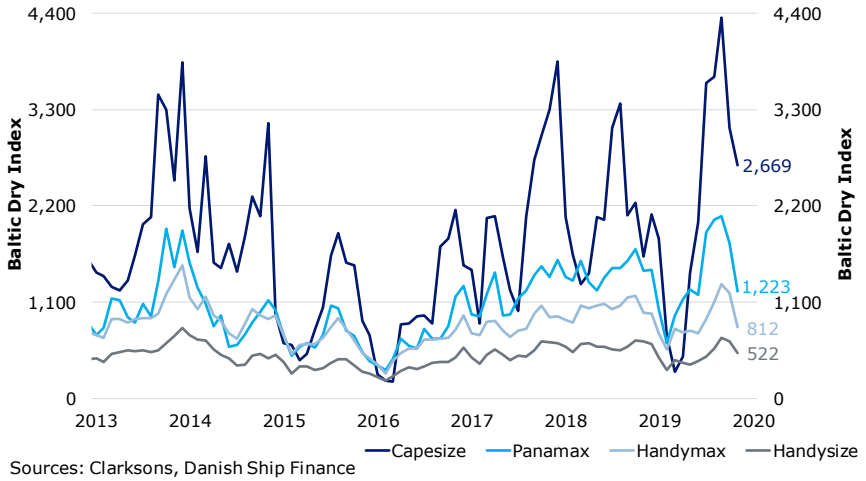
The larger Dry Bulk segments experienced extraordinary volatility during the first three quarters of 2019. Unexpected disruptions to cargo availability created massive but temporal fluctuations in vessel availability, resulting in severe freight rate volatility. The Baltic Dry Index bottomed out at 629 when fleet availability was at its highest and peaked at 2,255 when volumes returned to the market (fig. 1). Both extremes created moments of increased uncertainty.

TIMECHARTER RATES DECREASED BUT ARE NOW AT 2018 LEVELS

The 1-year timecharter rates declined temporarily across all four segments but recovered the lost ground by the end of July. Capesizes and Panamaxes are trading slightly above their January levels, but longer-period fixtures indicate that current levels are 10-15% too high. By November, the 1-year timecharter rate stood at USD 19,000 per day for a Capesize vessel, USD 13,000 per day for a Panamax, USD 10,000 per day for a Handymax and USD 10,000 per day for a Handysize vessel (fig. 2).

Figure DB.1

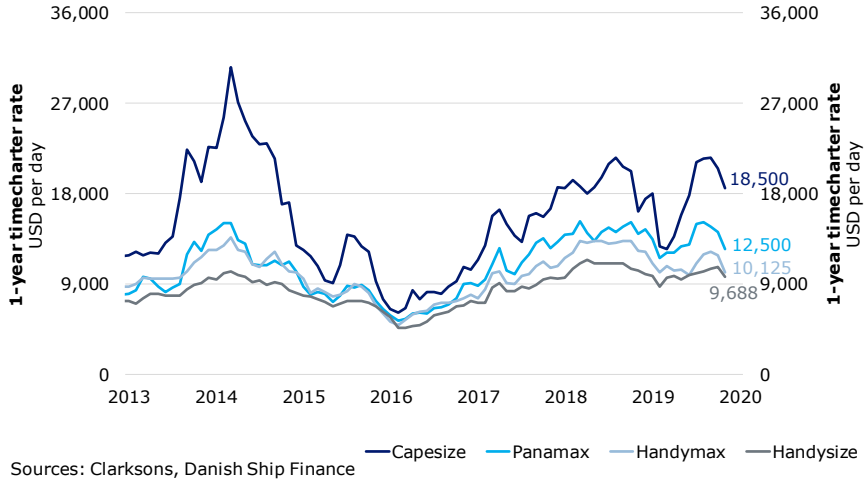
The Baltic Dry Index reached the lowest level in three years and the highest level in ten years in 2019



Sources: Clarksons, Danish Ship Finance

Figure DB.2

1-year timecharter rates decreased 10% on average in the first half of 2019 compared to second half of 2018



Sources: Clarksons, Danish Ship Finance

LOW SCRAPPING ACTIVITY, FEW DELIVERIES AND RETROFITTING HAVE SHAPED THE FLEET DEVELOPMENT IN 2019. THE DEMAND PICTURE VARIES DEPENDING ON COMMODITY; IRON ORE TRADE HAS DECREASED WHILE TRADE OF OTHER METAL ORES HAS FLOURISHED. CONSEQUENTLY, FLEET SUPPLY HAS GROWN SLIGHTLY FASTER THAN DEMAND.

THE DRY BULK FLEET IS GROWING AT A MODERATE PACE

The inflow of new vessels has been declining since 2015. The fleet saw a gross increase of 4.3% during the first ten months of 2019, while scrapping remained low, reducing fleet availability by 0.7% (fig. 3). The low scrapping activity can be explained by rising freight rates and the fact that there are fewer older vessels left in the fleet. The Capesize segment once again scrapped the most vessels, while the other segments were relatively inactive. Fleet availability was temporarily reduced by up to 0.7% by scrubber retrofits (to comply with IMO 2020), which lowered active fleet growth to 2.9% during the first ten months of 2019.

SEABORNE DRY BULK DEMAND GROWTH IS DECLINING

Dry Bulk demand grew by approximately 1% in the first nine months of 2019, primarily driven by commodities outside the scope of Capesizes. Iron ore demand declined by 4%, mainly driven by temporal cargo unavailability and to some extent increased recycling of scrap steel in China. Coal demand was relatively strong, growing by 4%. Indian coal demand may have been artificially high in the period due to the election campaign which seems to have spurred increased stock building to ensure a stable electricity supply. Demand for minor bulk increased by 10-15% in the period. Growing production increased cargo availability in metal ores (e.g. manganese and bauxite). The grain trade saw increasing volumes out of Ukraine and South America but lower volumes out of North America and Australia. Trading grain volumes remained fairly stable in the period.

Figure DB.3

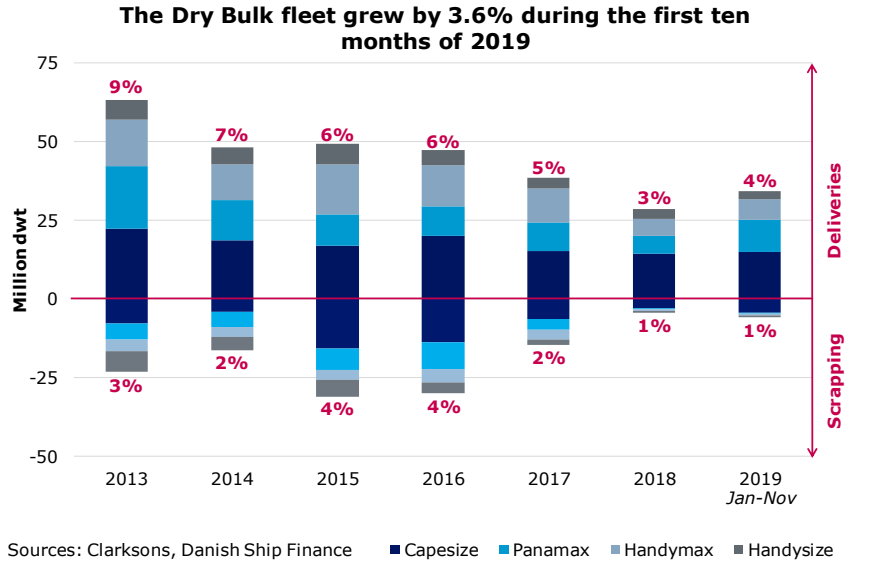
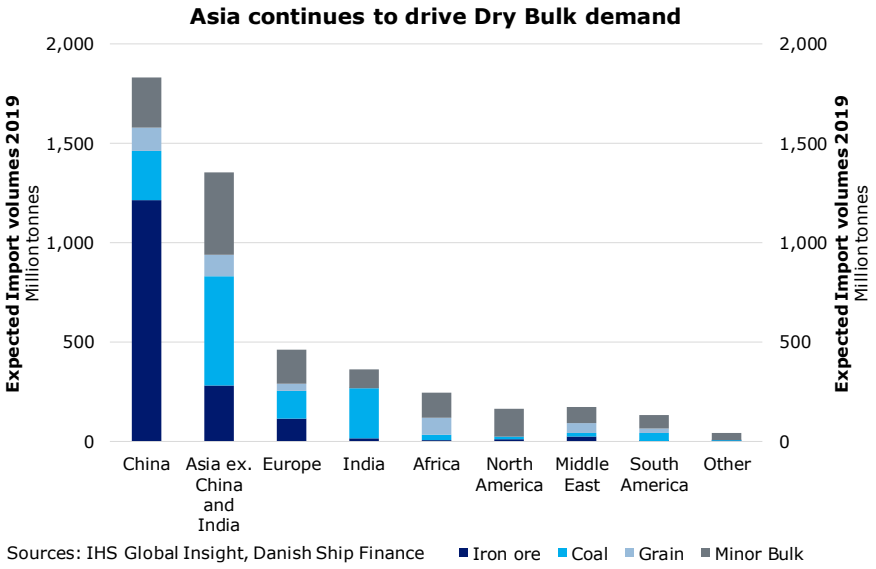


Figure DB.4



SURPLUS CAPACITY CONTINUES TO WEIGH ON SECONDHAND PRICES. VALUES FOR OLDER VESSELS ARE BEGINNING TO WEAKEN, INDICATING UNCERTAINTY OVER FUTURE EARNINGS.

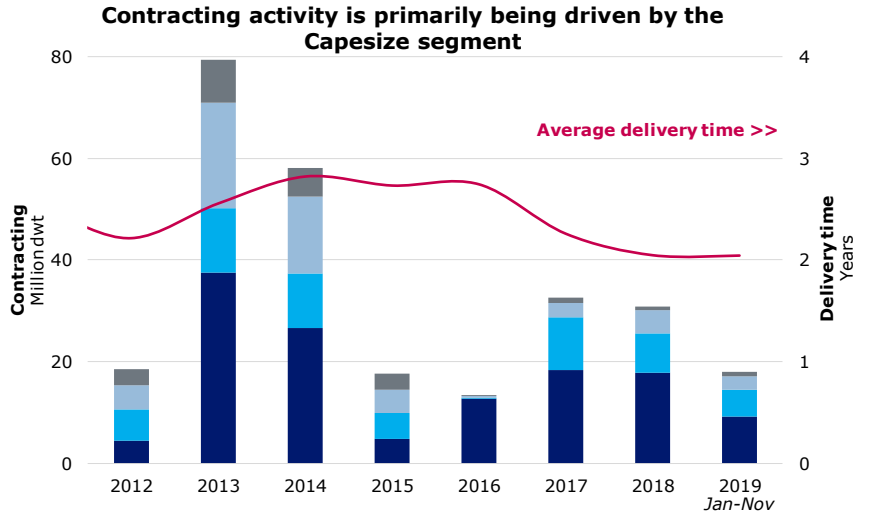
DRY BULK OWNERS ARE RELUCTANT TO CONTRACT VESSELS

The Dry Bulk fleet is young, and the market has been working to reduce surplus capacity for the past three to five years. Many vessels have been scrapped, but owners have struggled to keep contracting low (fig. 5). However, in 2019 contracting has been lower, especially among the more traditional owners. Most of the recent activity seems to have been driven by domestic state-owned interests supporting domestic yards. Thus, two-thirds of the capacity ordered has been placed by state-owned players at domestic yards in China, South Korea and Japan. In 2019, 18 million dwt has been ordered, representing 2% of the fleet compared to 2.5% in the same period last year. Contracting is driven by the larger vessel segments, whose demand outlook faces more structural challenges from a maturing Chinese real estate sector to the pending transition from coal to gas and renewable energy.

STAGNATION IN SECONDHAND VESSEL PRICES

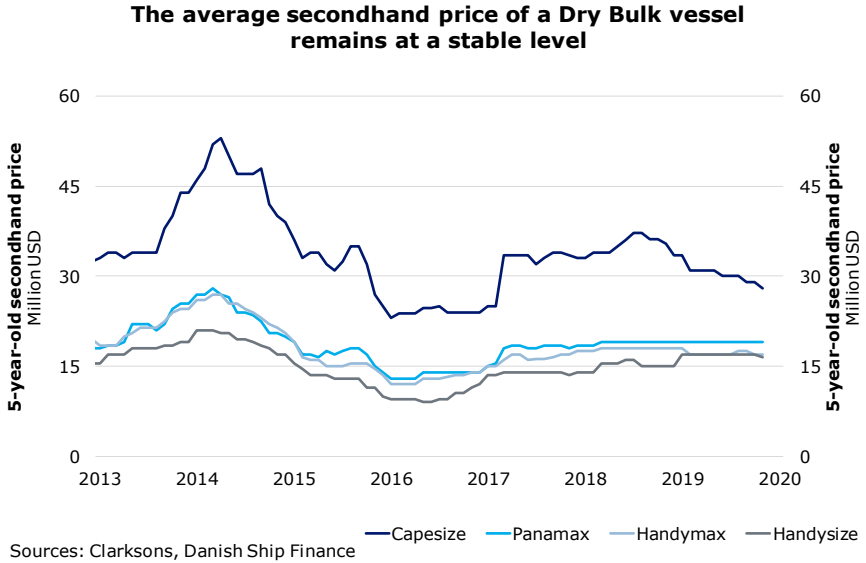
In 2019, sale and purchasing activity has been relatively brisk in the Dry Bulk market, although the turnover rate has been slightly lower than in previous years. Timecharter rates and the economic lifetime of older vessels have remained largely stable across the board (fig. 6). Secondhand prices remain low, but prices for older vessels have weakened by a further 10-15% during 2019, indicating that both short and long-term earnings expectations are declining. The Capesize segment has seen a similar degree of depreciation but for young vessels as well, which may be a sign of growing concerns over future surplus vessel capacity. In November 2019, the average prices for five-year-old Capesize, Panamax, Handymax and Handysize vessels stood at USD 28 million, USD 19 million, USD 17 million and USD 17 million, respectively.

Figure DB.5



Sources: Clarksons, Danish Ship Finance

Figure DB.6



Sources: Clarksons, Danish Ship Finance

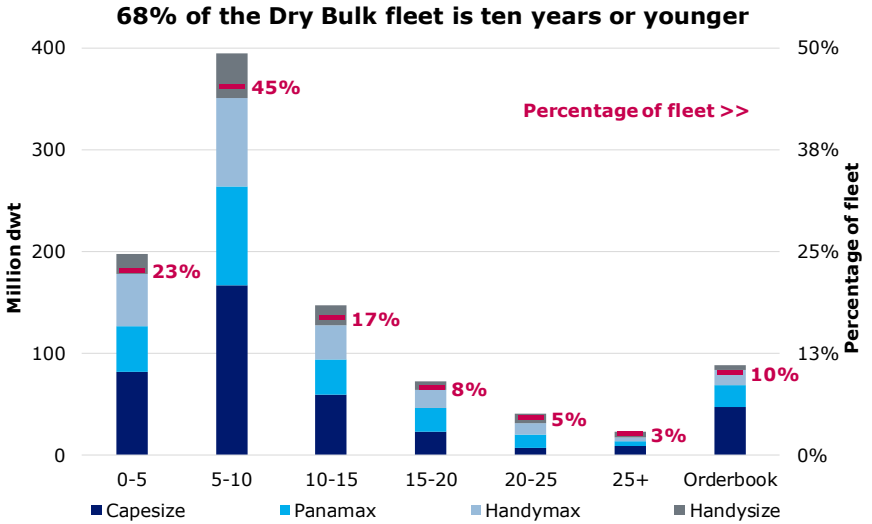
THE LARGER VESSEL SEGMENTS ARE CHALLENGED BY THE LOW NUMBER OF SCRAPPING CANDIDATES, A HEAVILY FRONT-LOADED ORDERBOOK AND CHANGES TO THE DEMAND DRIVERS REDUCING FUTURE DEMAND. THE SMALLER VESSELS ARE ENJOYING A FAVOURABLE FLEET DEVELOPMENT COMBINED WITH RISING MARKET OPPORTUNITIES ON THE DEMAND SIDE.

The outlook for the Dry Bulk market is showing a split between the smaller and the larger vessel segments although not yet visible in freight rates. The large segments are heavily dependent on single factors, from iron ore and coal to Chinese construction activity. The smaller segments are more flexible and versatile both in terms of trading routes and commodity type. We see a rather bleak outlook for the Capesize segment, while the Handymax and Handysize segments look to be in much better shape. The Panamax segment is, on the one hand, exposed to the iron ore and coal trades but is also benefiting from commodity types for which the outlook is favourable.

THE FLEET OF LARGER VESSELS WILL GROW RAPIDLY

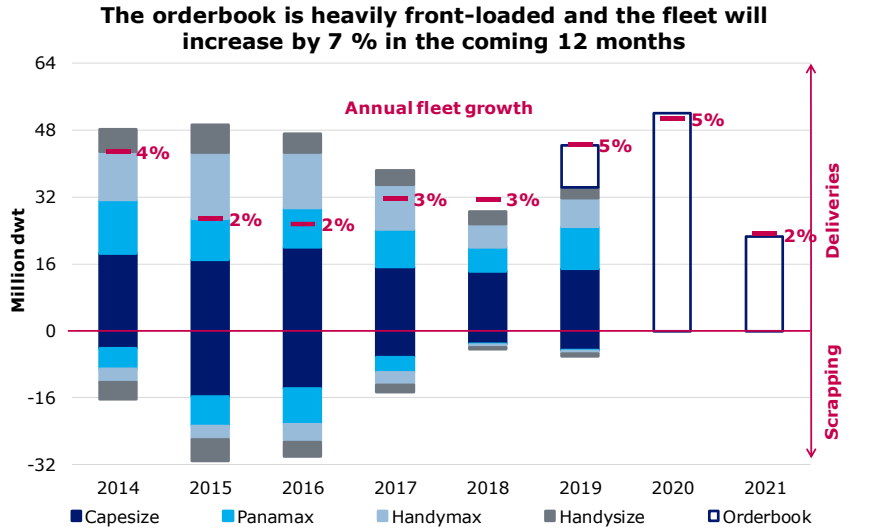
The Dry Bulk fleet is young and is continuing to grow. Today, 68% of the fleet is younger than ten years, while only 8% is older than 20 years (fig. 7). The orderbook represents 10% of the fleet, of which 79% is scheduled to be delivered within the next 18 months. For the larger segments, this represents a challenge, since the high demolition activity of the past three to five years has meant that there are no longer many older vessels. The Capesize segment has an orderbook-to-fleet ratio of 13%, which translates into three vessels on order for every vessel older than 20 years (fig. 9). Risk is building, since demand for Capesize vessels is largely driven by iron ore and coal demand, both of which may be facing structural headwinds in the years to come. These headwinds are less pronounced for the smaller segments, as their

Figure DB.7



Sources: Clarksons, Danish Ship Finance

Figure DB.8



Sources: Clarksons, Danish Ship Finance

orderbooks are smaller, the age distribution of their fleets more even and their demand picture more diverse.

A HEAVILY FRONT-LOADED ORDERBOOK

The fleet is scheduled to grow by 5% in 2019 and 2020, but the timing of the orderbook means that scheduled deliveries are concentrated around the last two quarters of 2019 and the first two quarters of 2020 (fig. 8). Hence, the fleet is set to expand by 7% in this period, leaving little room for any disruptions in cargo availability or short-term demand. This is primarily a concern in the Capesize and Panamax segments, while the Handymax and Handysize segments is expected to expand by 6% and 3%, respectively. The impact of scrubber retrofits will be minimal in 2020, since most of the vessels designated for scrubbers have been retrofitted in 2019. Thus, we predict a reduction in fleet supply due to retrofitting of just 0.3% in 2020.

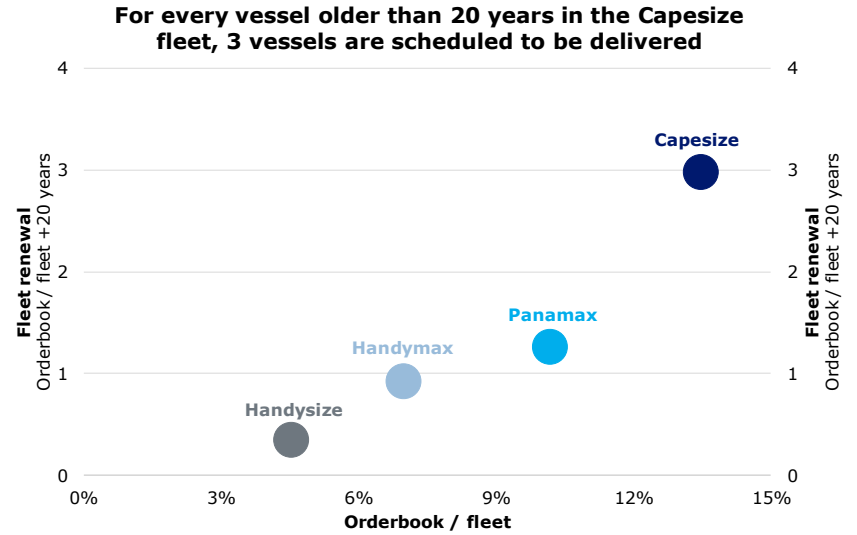
POSSIBLE PRESSURE ON THE ECONOMIC LIFE OF CAPESIZE VESSELS

The lack of scrapping candidates in the larger vessel segments is set to lower the economic lifetimes of older vessels (or introduce a period of very low freight rates). This is the case for the Capesize segment which is rapidly running out of old vessels to scrap. In a scenario where the oldest remaining vessel is scrapped for each new delivery, the economic lifetime of Capesize vessels older than ten years would drop to 17 years as early as in 2021 (fig. 10). Such a development would significantly reduce the value of older Capesize vessels. A similar trend could be seen in the Panamax segment, although the economic lifetime would stay above 20 years in this simulation.

STABLE DEMAND VOLUMES IN THE SHORT TERM

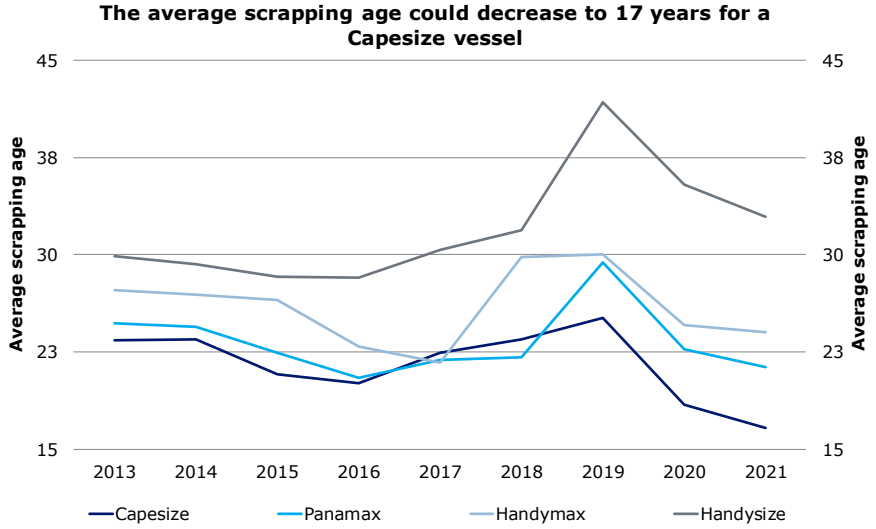
Seaborne Dry Bulk volumes are expected to increase by 1.5% in 2019 and 2.2% in 2020, although there are substantial variations between the traded commodities (fig. 11). Trading volumes in the primary Capesize-traded commodities – iron ore and coal – are most likely to stagnate or even shrink, while travel distances are shortening. These effects are expected to reduce distance-

Figure DB.9



Sources: Clarksons, Danish Ship Finance

Figure DB.10



Sources: Clarksons, Danish Ship Finance

adjusted demand going forward, while the Capesize fleet is scheduled to continue to grow. However, the demand situation is expected to improve temporarily in 2020 due to Chinese rebuilding of stockpiles. The demand outlook for the smaller vessels is significantly better: volumes are set to increase by approximately 4% in both 2019 and 2020, with longer travel distances adding another 1% to demand in both years.

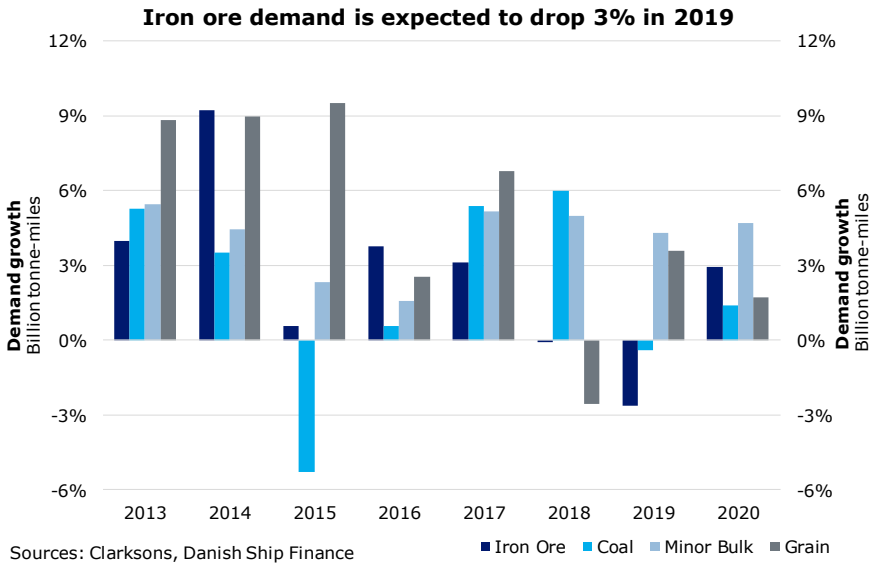
TRADE TENSIONS HAVE LIMITED IMPACT

The ongoing trade tensions between the US and China have affected the Dry Bulk market marginally and have so far had little influence on demand volumes. The grain trades have been most affected, although this has mainly been in the form of distributional challenges impacting trading routes. Commodity trades are constrained by the location of raw material deposits and travel distances can only be shortened to the nearest source. During the last ten years, travel distances for iron ore have decreased, but for metal ores in the minor bulk segment they have increased. We do not see short-term trade tensions changing the demand outlook, although they may impact travel distances. The tariffs imposed by the US and China have affected only 1.8% of Dry Bulk trades and have so far had a limited impact on volumes. Therefore, the trade tensions are not affecting our outlook for the Dry Bulk market.

MINOR BULK BRINGS HOPE FOR THE FUTURE

The outlook is positive for most minor bulk commodities, but metals and minerals are the main drivers of growth. China continues to import large volumes of bauxite, manganese ore and nickel as expanding mining capacity increases cargo availability out of Sub-Saharan countries such as Guinea and South Africa. The medium to long-term demand outlook for minor bulk commodities is being shaped not only by the increased global population (i.e. fertiliser, grain and building materials) but also by high expectations for more circular material flows and the global energy transition. Investments in renewable energy sources like solar panels and wind turbines are likely to increase demand for light weight metals.

Figure DB.11



Sources: Clarksons, Danish Ship Finance

CHANGING DEMAND DRIVERS IN THE LONG TERM

The long-term outlook for Dry Bulk demand is structurally changing owing to the amplification of circular material flows and the global energy transition towards renewable energy sources. These trends are reducing the long-term demand outlook for the larger vessels. Still, an expanding global population combined with more circular material flows is strengthening the long-term outlook for the smaller vessel segments. The Dry Bulk market is being challenged by the high dependence on Chinese demand and thereby subject to significant political uncertainty related to Chinese public spending. A maturing Chinese real estate sector poses a risk to the iron ore demand outlook but could also spill over into the minor bulk commodities. Still, the Belt and Road Initiative continues to promote progress for regional construction activity, although it is difficult to isolate the impact of this on transported volumes.

STRUCTURAL CHANGES ARE TRANSFORMING IRON ORE DEMAND

Iron ore demand is largely driven by Chinese construction activities. However, the Chinese construction growth is expected to drop back from 2021 onwards. This will reduce the global demand outlook for iron ore, which is being further exacerbated by increased use of scrap steel in steel production. The Chinese government is aiming to increase the use of steel scrap in the steelmaking process from 11% in 2016 to 20% by 2020 and 30% by 2025. If these targets are met, it could reduce demand for iron ore substantially up to 2025. We could begin to see reduced import volumes of iron ore even in a scenario of strong Chinese economic growth. Notwithstanding this, the smaller vessel segments could benefit if Chinese imports of scrap steel intensify.

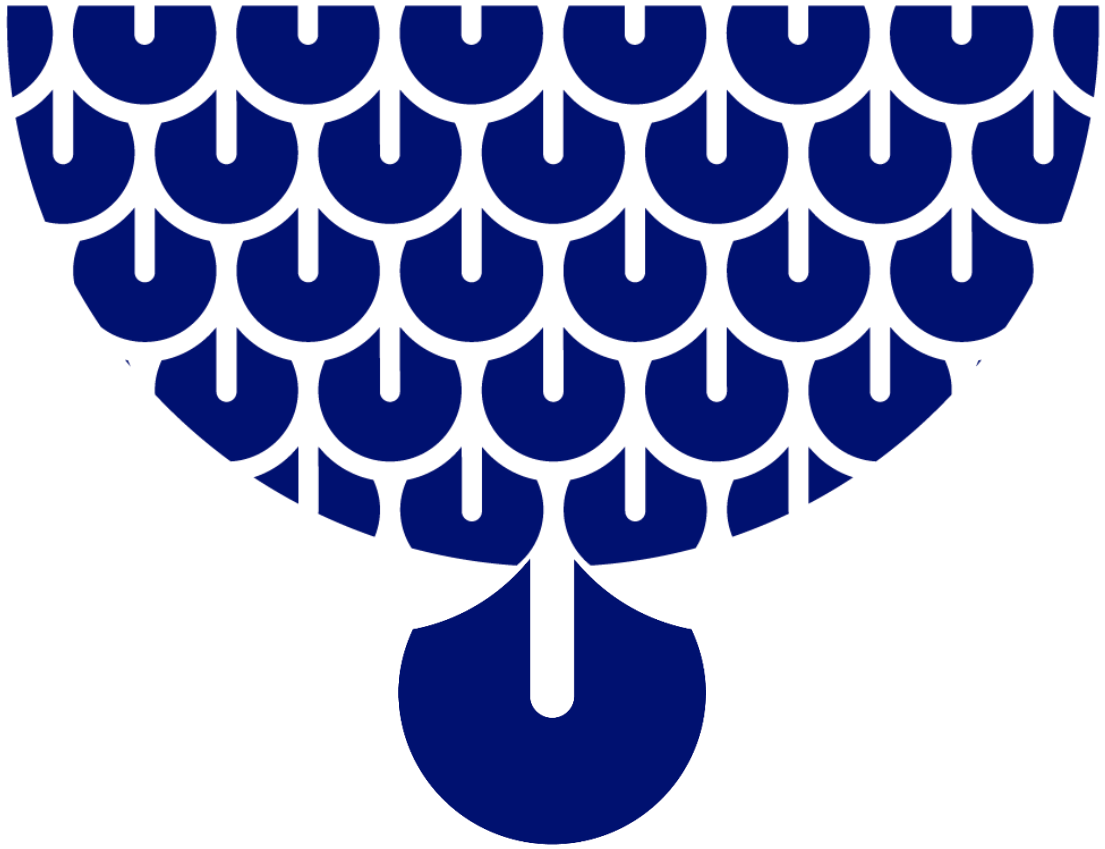
THE ENERGY TRANSITION IS CHANGING COAL DEMAND DYNAMICS

The global push for a more sustainable economy and a green energy supply is expected to have a profound impact on Dry Bulk demand. Coal accounts for approximately one-quarter of annual cargo movements, of which 80% are bound for Asia. Asian consumption of coal seems likely to increase in the short to medium term, since power-generating capacity continues to grow across the region. The renewable energy sources continue to expand their share of the domestic power supply but has so far only limited the growth rate in fossil fuels. The long-term outlook for coal is being determined by the Paris agreement, which will lower the global appetite for hydrocarbons, and particularly coal, up to 2050.

A DIVIDED OUTLOOK

To summaries, the outlook for the smaller vessel segments is strong. The orderbook looks manageable, the age distribution of the fleet allows for some extraordinary scrapping without lowering the economic lifetimes of older vessels, and the demand outlook is significantly stronger than for the larger segments. We expect demand growth to outpace fleet growth in the coming years. The outlook for the Panamax segment is more uncertain. The supply side is comparable with that in the Capesize segment, but the demand side is more flexible and versatile. The segment clearly has an exposure to the iron ore and coal trades but also transports grains, alumina/bauxite and steel products. If parcel sizes begin to outgrow the Handysize and Handymax segments, Panamaxes could benefit such that volumes increase even in a scenario with low iron ore or coal demand.

CRUDE TANKER



CRUDE TANKER

THE CRUDE TANKER MARKET HAS IMPROVED IN 2019, ALTHOUGH SUPPLY HAS BEEN OUTPACING DEMAND. THE SUPPLY SURPLUS COULD CONTINUE TO RISE, WHILE FREIGHT RATES CONTINUE TO BE SUPPORTED BY TEMPORAL FACTORS. EVENTUALLY, FREIGHT RATES WILL BEGIN TO REFLECT THE IMBALANCE, POSSIBLY AS EARLY AS THE SECOND QUARTER OF 2020.

FREIGHT RATES

CONDITIONS IN THE SPOT MARKET DETERIORATED DURING THE FIRST SIX MONTHS OF 2019, SINCE SUPPLY INCREASED AHEAD OF DEMAND. HOWEVER, THIS YEAR HAS SEEN PERIODS OF IMPROVED BALANCE WHEN VESSEL CAPACITY WAS TEMPORARILY REDUCED.

OFFLINE REFINERIES CAUSED AN EARNINGS DROUGHT IN 1H2019

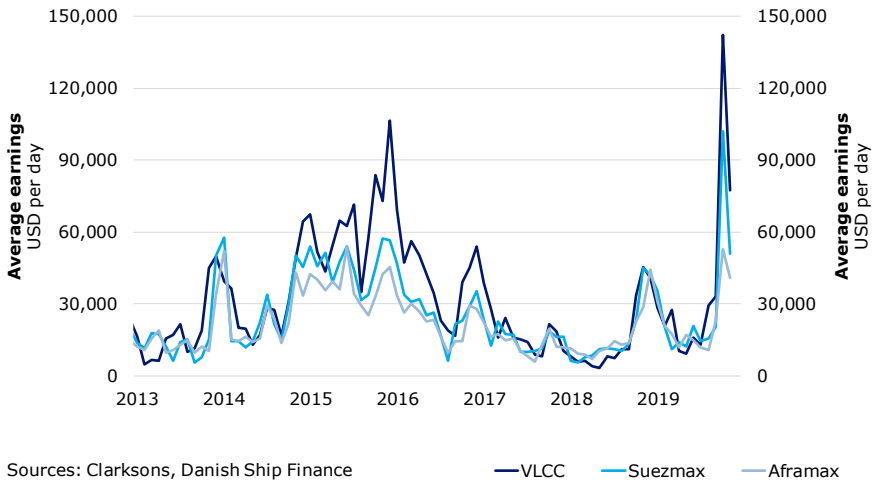
The seasonally low demand combined with a period of extraordinary maintenance of the refineries – prior to implementation of the IMO 2020 fuel regulations – reduced cargo volumes and spot rates during the first half of 2019. Cargo volumes have since recovered, easing the pressure on spot rates. In September, the US State Department imposed sanctions on tanker-owning subsidiaries of COSCO, sparking fears of a broad-based reduction of fleet availability. This caused spot rates to rise dramatically. As these fears have eased, rates have reverted towards more normal levels (fig. 1).

TIMECHARTER RATES UP ON THE BACK OF LONG-HAUL DEMAND

The timecharter market is in the midst of a recovery driven by an expected temporary supply contraction due to IMO 2020 and longer travel distances pushing up demand. This development has been reinforced by the sanctions on COSCO subsidiaries. Fears over sanctions are easing, which has caused timecharter rates to decline slightly from the peak in October. However, timecharter rates are still well above the level in September. Since January, 1-year timecharter rates have increased by 53%, 41% and 34% for VLCCs, Suezmaxes and Aframaxes, respectively (fig. 2).

Figure T.1

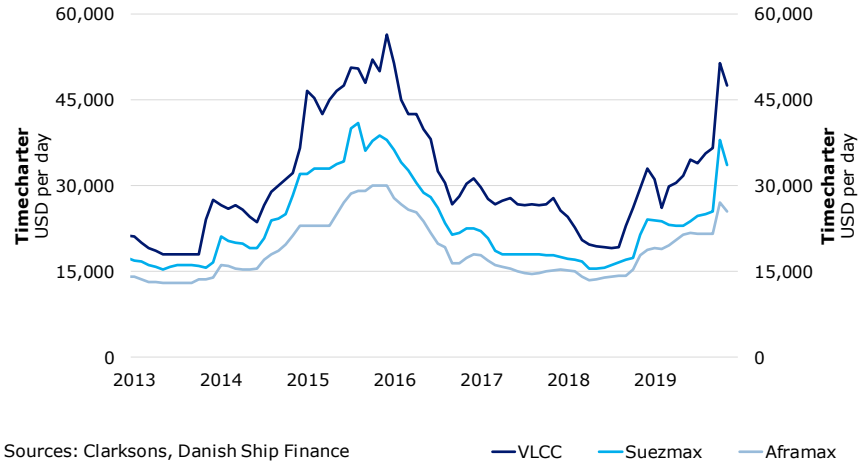
The spot market experienced a short-lived spike due to fear of sanctions



Sources: Clarksons, Danish Ship Finance

Figure T.2

The improving 1-year timecharter market has been reinforced by fear of sanctions



Sources: Clarksons, Danish Ship Finance

SUPPLY GROWTH HAS BEEN STRONG AND DEMAND GROWTH SLUGGISH. THIS HAS BEEN MITIGATED BY IMO 2020.

HIGH DELIVERIES AND LOW SCRAPPING ARE DRIVING FLEET GROWTH

The recovery in freight rates took place despite the massive intake of new vessels in the first ten months of 2019. High expectations to earnings meant scrapping and postponement of orders were low. More than 25 million dwt was delivered, while only 2 million dwt was scrapped in the period, corresponding to a fleet growth of 6%. The VLCC segment contributed the lion's share of fleet growth, expanding 7 % (fig. 3).

SCRUBBER RETROFITS HAVE LOWERED VLCC AVAILABILITY IN 2019

Still, VLCC availability only increased by 3% in the first ten months of 2019. We estimate that effective supply growth was reduced by about 4%-point due to increasing floating storage in preparation of IMO 2020 and scrubber retrofits (fig. 4). Moreover, newbuild Crude Tankers can be used as Product Tankers until their first crude cargo; lowering supply even further.

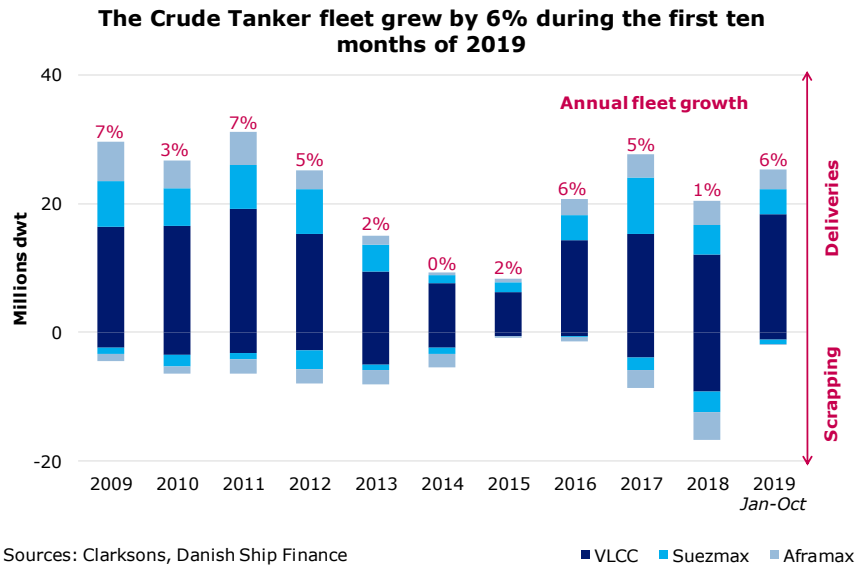
CRUDE OIL VOLUMES DECLINED IN THE FIRST EIGHT MONTHS OF 2019

Seaborne crude oil volumes for the full year are expected to remain flat or decline from the 2018 level. Extensive refinery maintenance caused crude oil volumes to decrease markedly in the first eight months of 2019. However, as refineries reopen, volumes should increase, recouping some of the lost ground.

US EXPORTS CONTINUE TO INCREASE DISTANCE-ADJUSTED DEMAND

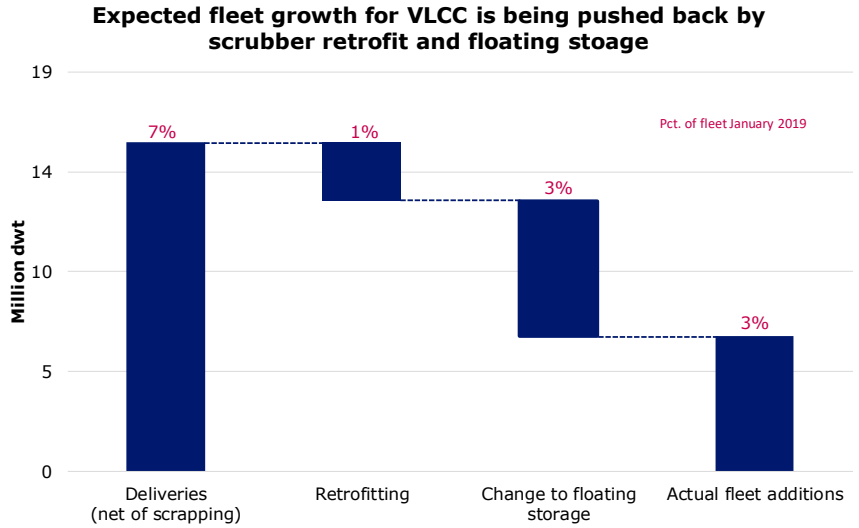
Longer travel distances are lowering the fleets' cargo-carrying capacity. The OPEC+ production cut allows more long-haul US export volumes to reach the market. In 2018, travel distances increased by 1.8%. Current figures suggest Asian imports of North American crude volumes are growing more slowly than expected, putting the longer travel distances at risk. Distance-adjusted Crude Tanker demand is expected to increase by 1.5-2% in 2019.

Figure T.3



Sources: Clarksons, Danish Ship Finance

Figure T.4



Sources: Clarksons, Danish Ship Finance

SHIP PRICES ARE RISING ON THE BACK OF EXPECTATIONS OF STRONG EARNINGS IN THE SHORT TERM. CONTRACTING AND SALE AND PURCHASE ACTIVITY WERE LOW, OWING TO UNCERTAINTY OVER THE MEDIUM- TO LONG-TERM OUTLOOK.

LONG-TERM CHARTERS INCREASE NEWBUILDING CONTRACTS

Newbuild orders are at the second-lowest level since 2013. Vessels equivalent to 3% of the fleet, measured by capacity, were ordered in the first nine months of 2019 (fig. 5). About 20% of the contracted vessels were ordered on the back of long-term employment with oil majors: three VLCCs and ten LNG-powered Aframaxes. Newbuilding prices remained flat, close to the median level from the past ten years. In November, newbuilding prices for VLCCs, Suezmaxes and Aframaxes were USD 92 million, USD 62 million and USD 49 million, respectively.

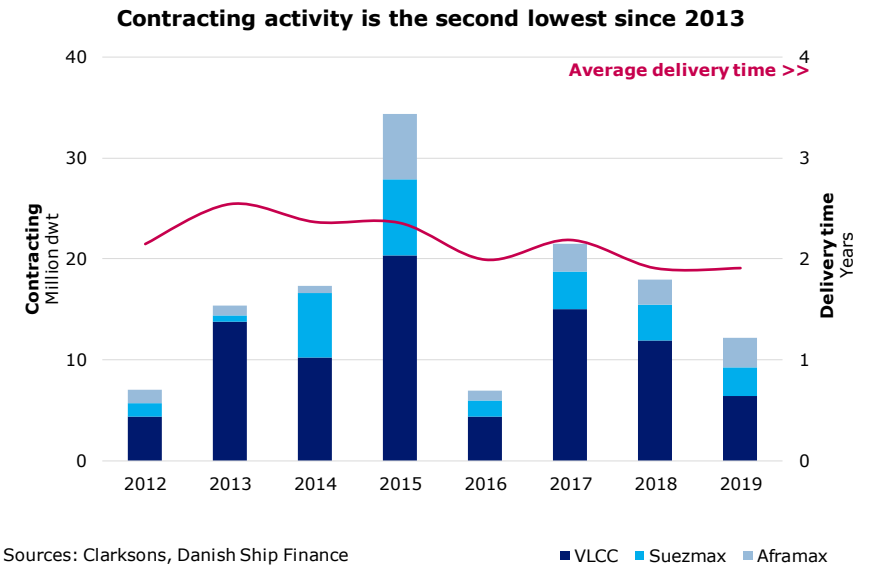
STRONG SHORT-TERM EARNINGS ARE SUPPORTING PRICES

Secondhand prices increased for all segments and ages during the first ten months of 2019. VLCCs and Suezmaxes older than ten year benefitted the most, supporting our view that the market expects IMO 2020 to boost earnings only in the short-term. Moreover, the increase in travel distances due to the OPEC+ production cut is expected to continue but could end as soon as 2020. This adds risk to the medium-term demand outlook, and in effect is holding back the value of young vessels.

SLOW START TO S&P ACTIVITY IN 2019 DUE TO DEPRESSED MARKET

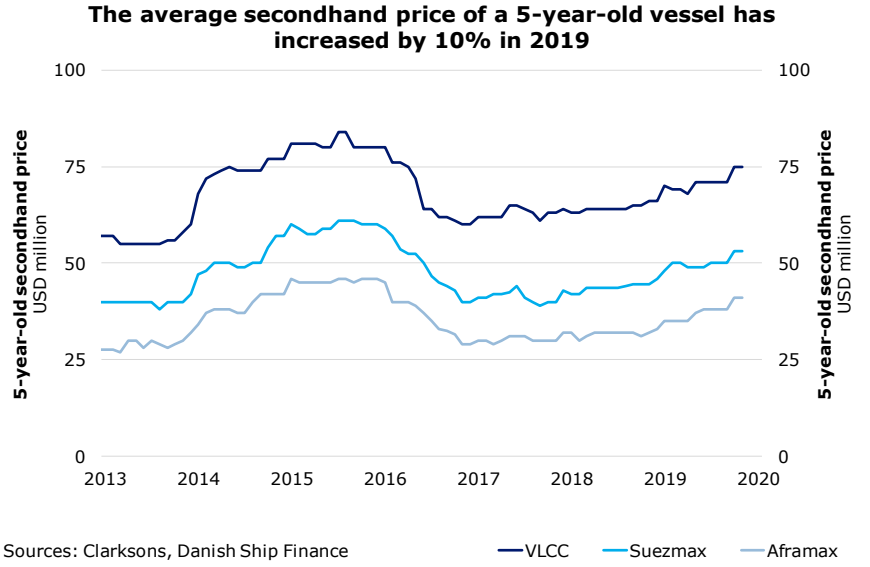
Sales and purchase activity in the secondhand market was slow in the first three months of the year but has since picked up. This was concurrent with the development in secondhand prices and earnings, particularly for VLCCs. About 3% of the fleet changed hands in the firste ten months of the year: a total of 58 ships (32 VLCCs, 11 Suezmaxes and 15 Aframaxes).

Figure T.5



Sources: Clarksons, Danish Ship Finance

Figure T.6



Sources: Clarksons, Danish Ship Finance

THE OUTLOOK FOR CRUDE TANKERS IS SHROUDED IN UNCERTAINTY. SUPPLY IS EXPANDING AHEAD OF DEMAND, BUT TEMPORAL FACTORS MAY BALANCE THE MARKET WELL INTO 2020.

The short-term outlook for Crude Tankers is characterised by a large inflow of new vessels entering a mature oil market. Global oil demand is growing slowly, but utilisation of the fleet is being kept artificially high, since the cargo-carrying capacity is being lowered by temporal factors. The installation of scrubbers prior to the implementation of IMO 2020, employment of vessels as floating storage, slow-steaming to save fuel, capacity taken out due to political sanctions, and longer travel distances due to the OPEC+ oil production cut are all supporting short-term market conditions irrespective of fundamentals.

TEMPORARY FACTORS ARE SUPPORTING EARNINGS

These effects are having a material impact on vessel availability, which is supporting freight rates strongly, but it is imperative to acknowledge that these effects are only temporal. The Crude Tanker market these could suddenly experience surplus capacity that can only be absorbed by premature scrapping.

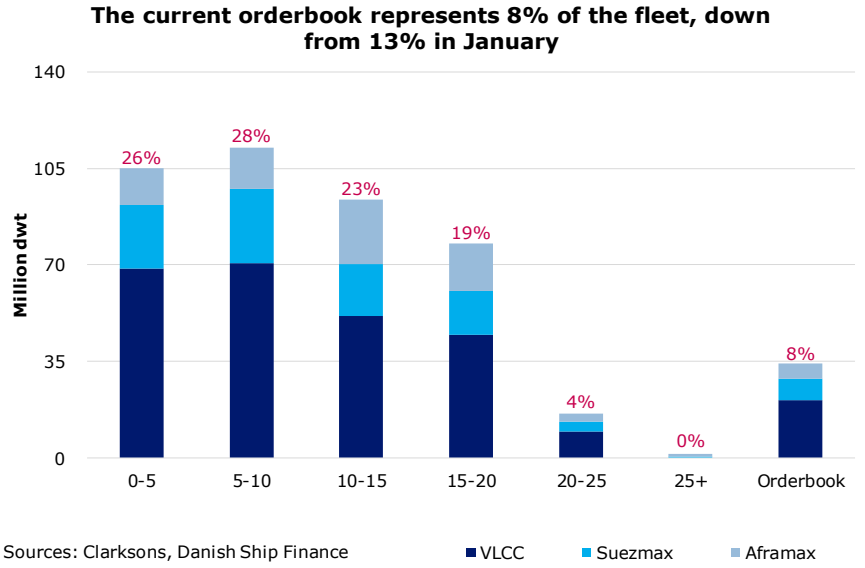
CONTINUED INFLOW OF NEW SHIPS INTO THE FLEET

The orderbook currently stands at 8% of the fleet and is scheduled to be delivered within the next three years. This translates into an annual average growth rate of 3% before scrapping for all segments. The VLCC and Aframax fleets are scheduled to expand by 8%, while the Suezmax fleet is set to grow by 9% (fig. 7).

A LOW BUT INCREASING SHARE OF THE FLEET IS OLDER THAN 20 YEARS

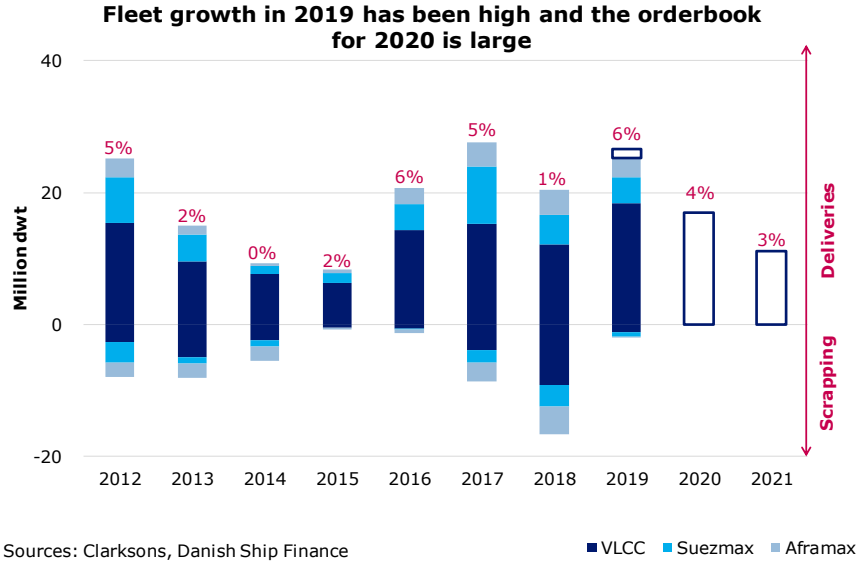
The demolition potential is relatively low, since only 4% of the fleet is older than 20 years. Still, all new vessels entering the fleet can theoretically be absorbed by scrapping vessels older than 19 years during the next three years should demand fail to expand.

Figure T.7



Sources: Clarksons, Danish Ship Finance

Figure T.8



Sources: Clarksons, Danish Ship Finance

This is unlikely to be the case, but it indicates that the downside risk to older vessels' secondhand prices may be less severe than suggested by the fact that the VLCC fleet currently has 30 vessels older than 20 years while 68 vessels are on order (fig. 9).

DEMAND GROWTH DRIVEN BY LONGER TRADE DISTANCES

Global oil consumption continues to grow at a slowing pace. Total seaborne oil trade is expected to grow steadily by around 1% annually from 2018 to 2024. Still, higher North American export volumes are expected to lengthen travel distances, pushing up distance-adjusted Crude Tanker demand. Demand is expected to grow by 3% up to 2021, dropping to 1% towards 2024. From 2021, North American export volumes are expected to grow in line with the global average (fig. 10). The longer trade distances up to 2021 are demand positive for the large segments, mainly for the VLCCs.

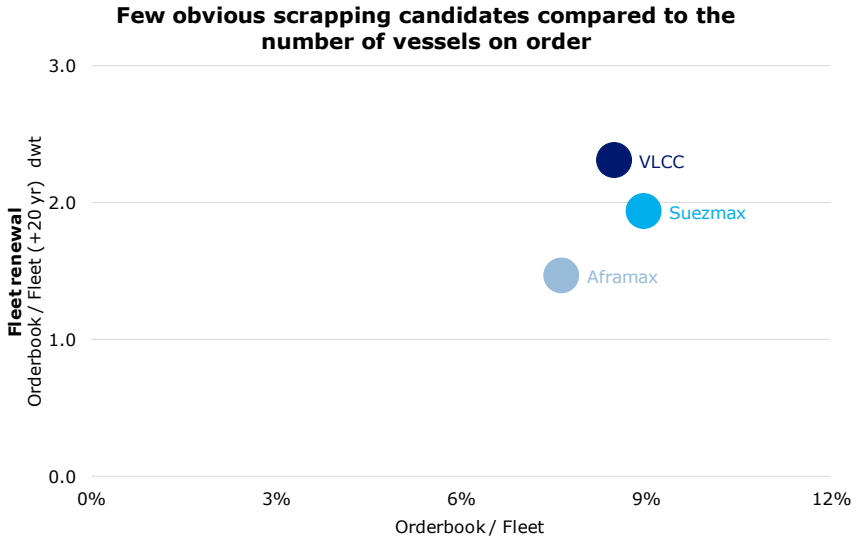
RISK TO TRADE DISTANCES FROM AN END TO OPEC CUT

Current forecasts are subject to great geopolitical uncertainty, including whether OPEC+ will maintain its cap on production. The OPEC+ production cut has led to distances being kept artificially long. It has curbed Middle Eastern production and effectively increased the oil price. The higher price has enabled US shale players to ramp up production and oil exports. The cut is set to end in March 2020. If OPEC+ increases production, refineries may substitute US oil for Middle Eastern oil, lowering tonne-mile demand.

ECONOMIC SLOWDOWN RISKS LOWERING END-USER DEMAND IN ASIA

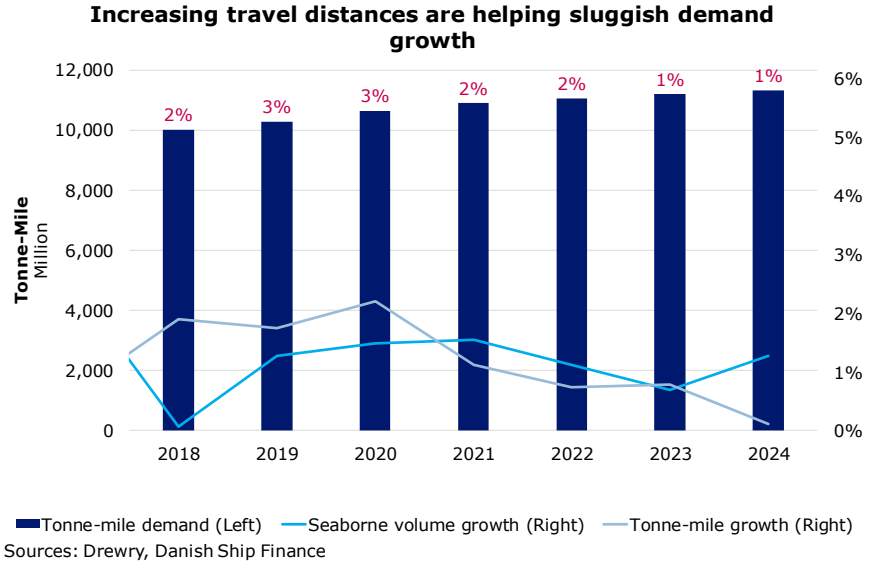
Short- to medium-term oil demand is exposed to the risk of slowing economic growth in Asia. This is mostly unaccounted for in current consensus projections. The region is expected to contribute 73% of demand growth for refined products in the next five years. This will be driven by a growing Asian population and its increasing purchasing power. However, weakening economic growth coupled with high levels of debt might challenge the

Figure T.9



Sources: Clarksons, Danish Ship Finance

Figure T.10



Sources: Drewry, Danish Ship Finance

region. According to McKinsey, 37% of corporates in China and 43% in India have interest coverage below 1.5x. This means an economic slowdown could hurt industrial production and lower oil demand.

DECARBONISATION IN TRANSPORT IS A RISK FACTOR FOR OIL DEMAND

Even without weakening economic growth, risk to oil demand persists. The oil demand to GDP multiplier is decreasing and is expected to continue its descent (fig. 11). Asia is set to contribute the lion's share of global oil demand growth in the next five years. We expect gasoline and diesel to be the main drivers of growth in Asia oil demand. However, growth in these commodities could undershoot. Electric vehicle (EV) sales in China more than doubled from 2017 to 2018 and EVs' share of total car sales increased from close to 0% in 2013 to about 4.5% in 2018. If this trend continues, the share of EVs could surpass 20% by 2021. This development poses a big but unclear risk to the Crude Tanker demand outlook for the coming years.

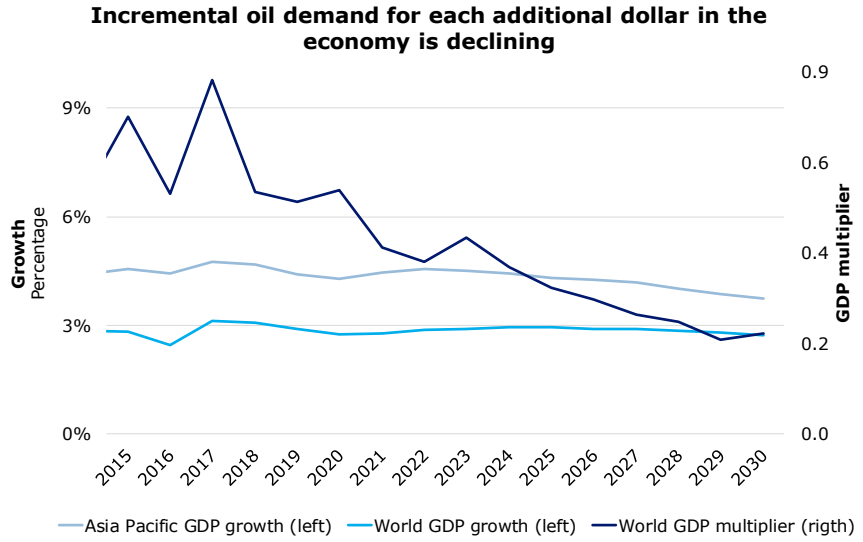
SUPPLY SURGING AHEAD OF DEMAND

Global oil demand is expected to grow more slowly than the fleet in the next two to three years. The fleet is growing by 3% annually, while global oil consumption is expected to grow modestly. Crude Tanker demand is being driven by expected increases in travel distances, maybe to the tune of an additional 2% per year. Once the current orderbook has been delivered, improvements in fleet utilisation seem likely, although this depends on future contracting activity and changes to current trade flows.

UNCERTAINTY MAY EXTEND ECONOMIC LIFETIMES OF VESSELS

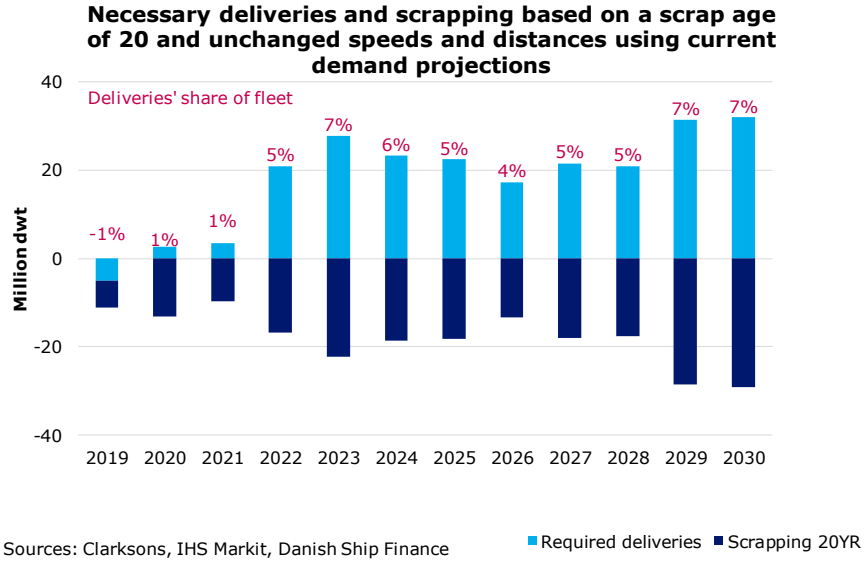
The economic lifetime of Crude Tanker vessels has averaged 20 years since the early 2000s, while the technical lifetime is 25 years. If the economic lifetime is kept stable, we would expect to see a significant surge in new orders for delivery from 2022 (fig. 12). However, an uncertain demand outlook combined with the

Figure T.11



Sources: IHS Markit, Danish Ship Finance

Figure T.12



Sources: Clarksons, IHS Markit, Danish Ship Finance

transition towards a CO_2 neutral world fleet are likely to reduce owners' appetite for ordering new vessels. This indicates that the economic lifetimes of older vessels are likely to increase in the short- to medium-term, keeping contracting and scrapping at a low level.

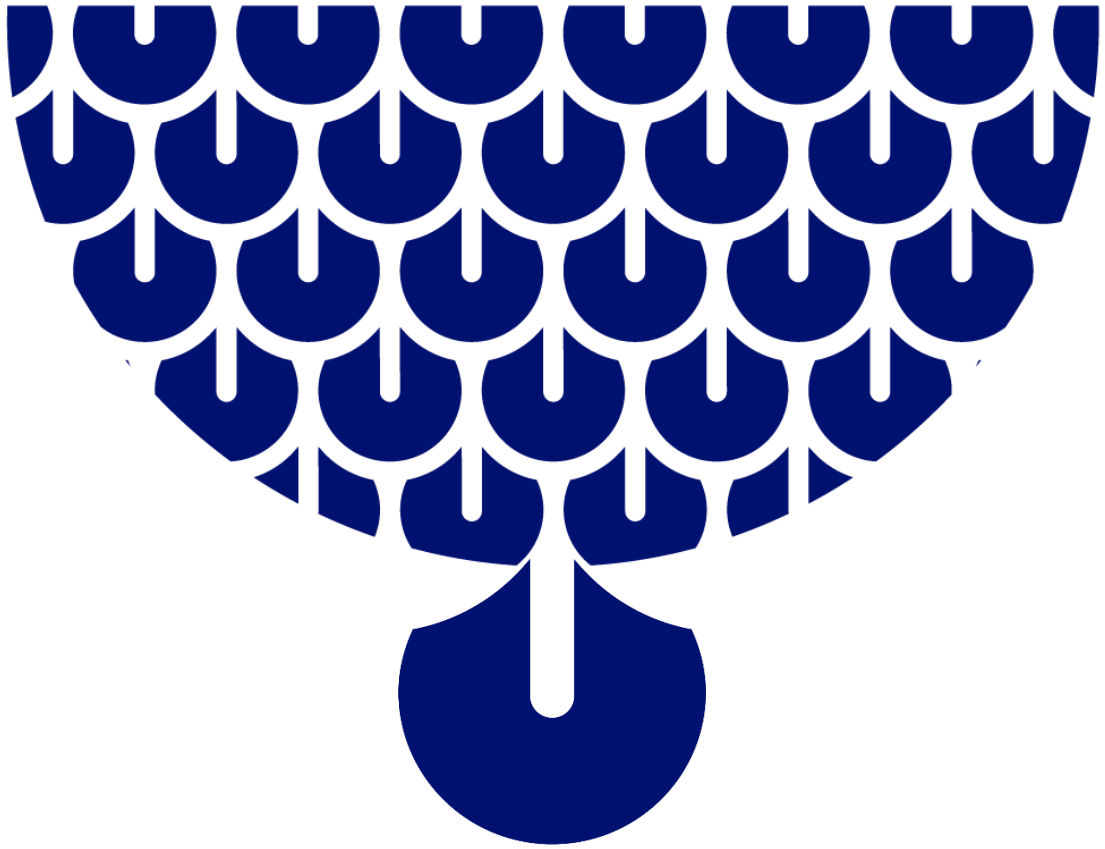
AGEING FLEET MIGHT BALANCE DEMAND

The medium- to long-term demand outlook is highly uncertain. There is considerable disagreement over the timing and magnitude of peak oil. Most observers agree that peak oil demand will materialise within the lifetimes of vessels currently trading. When demand peaks, the number of older vessels that are candidates for scrapping should outnumber vessels younger than ten to allow a gradual fleet reduction that mirrors the decline in demand.

MARKET FUNDAMENTALS ARE STRUCTURALLY WEAK

The fleet is growing significantly faster than global oil consumption, but a range of temporal factors are allowing fleet utilisation to improve. Vessels are being taken out of service to be retrofitted, which is reducing fleet availability. Moreover, longer travel distances are keeping the cargo-carrying capacity of the fleet in check. Both effects are supporting freight rates in the short-term but mask the growing structural imbalance between supply and demand.

PRODUCT TANKER



PRODUCT TANKER

EARNINGS ARE BEGINNING TO INCREASE IN LINE WITH EXPECTATIONS AND SHIP PRICES HAVE INCREASED ACCORDINGLY. MEDIUM TO LONG-TERM EXPECTATIONS ARE CAUTIOUSLY POSITIVE GIVEN THAT TECHNICAL DEVELOPMENT IN SHIP DESIGN KEEP ORDERING TO REMAIN LOW.

FREIGHT RATES

OVERSUPPLY AND SEASONALITY HAVE DEPRESSED FREIGHT RATES FOR MOST OF THIS YEAR. HOWEVER, TIMECHARTER RATES HAVE INCREASED IN ANTICIPATION OF GROWING DEMAND DUE TO IMO 2020.

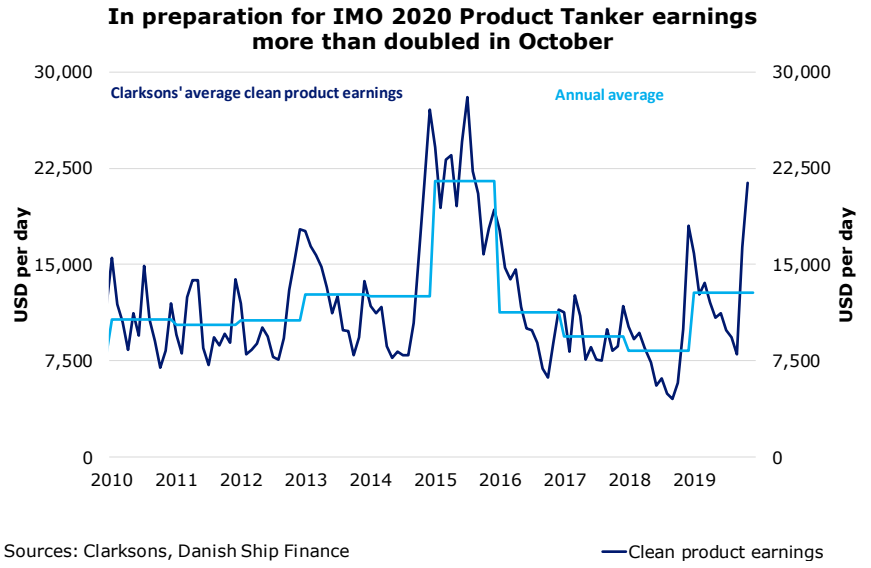
LOW CARGO VOLUMES WEIGHED ON SPOT EARNINGS MOST OF THE YEAR

Seasonally low demand for Product Tankers in the first nine months of 2019 was weakened further by low growth in global demand, weak refinery margins and extended maintenance periods for refineries. Many refineries are working to shift product yields to maximise middle distillate production and upgrade secondary units capable of processing heavier crude ahead of the IMO 2020 sulphur cap. Weak growth in cargo volumes combined with a large inflow of new vessels created surplus capacity in the spot market during the first nine months of 2019, which depressed spot rates. However, since October the effect from IMO 2020 and seasonality caused earnings to increase 167% (fig. 1).

EXPECTATIONS LIFT TIMECHARTER RATES ABOVE CURRENT SPOT RATES

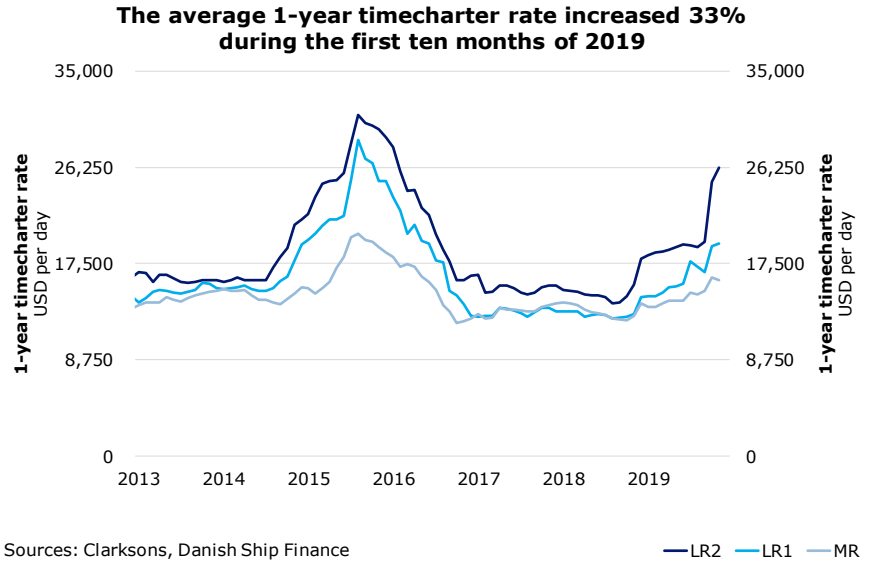
Despite declining cargo volumes in the first six months of 2019, the timecharter market has seen a recovery, benefiting the LR2 and LR1 segments in particular. The recovery is being driven by expectations of higher trade volumes related to IMO 2020, which increases the need to reposition refined oil products and build up inventory of low-sulphur fuel. The market expects the forthcoming recalibration exercise to push vessel demand ahead of supply. The 1-year timecharter rates for LR2, LR1 and MR have increased by 44%, 22% and 18% since January, respectively (fig. 2).

Figure P.1



Sources: Clarksons, Danish Ship Finance

Figure P.2



Sources: Clarksons, Danish Ship Finance

SUPPLY GREW AHEAD OF DEMAND. SCHEDULED DELIVERIES FOR 2019 ARE HIGH IN ANTICIPATION OF A TEMPORARY DEMAND BOOST FROM THE IMPLEMENTATION OF IMO 2020. HOWEVER, DEMAND DID NOT LIVE UP TO EXPECTATIONS IN THE FIRST HALF OF THE YEAR, WHICH CAUSED POSTPONEMENTS TO INCREASE. HOWEVER, POSTPONED VESSELS ARE BEGINNING TO BE DELIVERED AS DEMAND WILL PICKS UP.

PRODUCT TANKER FLEET INCREASED BY 4% IN 2019

Fleet growth in the first ten months of 2019 was high, due to the large number of scheduled deliveries and low scrapping activity. The latter was due to high expectations for future demand growth and the fact that few ships are over the age of 25. At the beginning of the year, fleet growth looked set to be even higher, but low earnings in the first nine months prompted owners to postpone deliveries. This trend has started to reverse in the runup to IMO 2020. A total of 0.6 million dwt was demolished in the first ten months of 2019, equivalent to 0.4% of the fleet. Deliveries amounted to 8 million dwt, equal to 4.8% of the fleet (fig. 3).

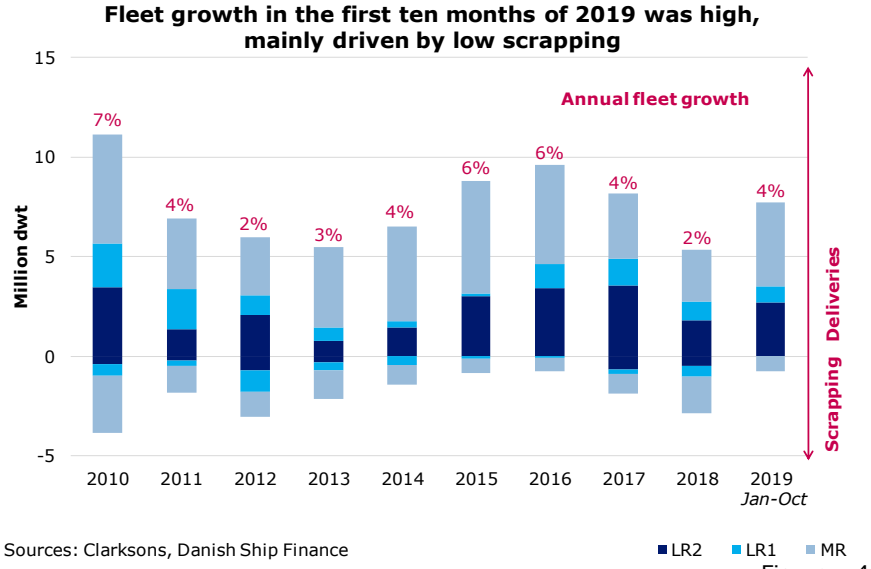
RETROFITTING SCRUBBERS HOLDING BACK HIGH FLEET GROWTH

About 20% of the current LR2 fleet has either been retrofitted with scrubbers or installation is pending. Retrofitting of LR2 vessels with scrubbers will push about 1 percentage point of the segment's fleet growth into 2020 (fig. 4). Only one out of ten LR1 and MR owners have decided to invest in retrofitting of scrubbers.

MODERATE DEMAND GROWTH BUOYED BY LONGER TRADE DISTANCES

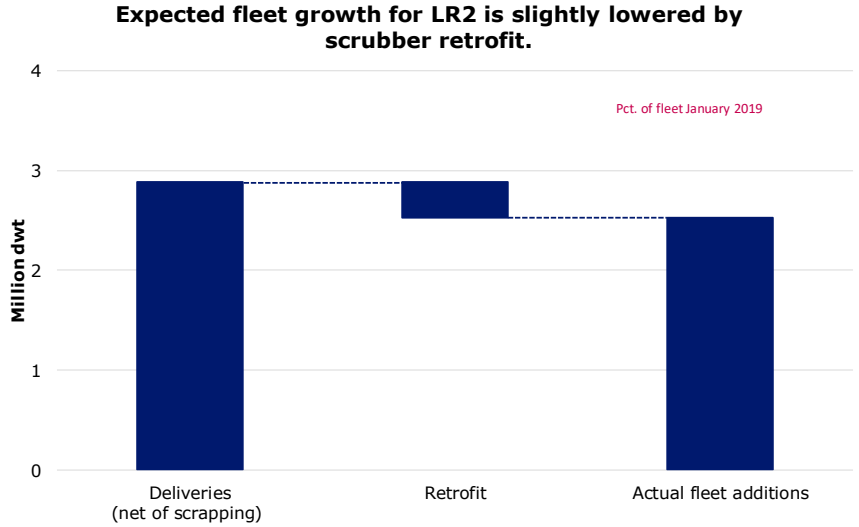
The first half of the year experienced weak demand, but improvements in market fundamentals are expected to result in annual growth of 0-1%. Incremental demand for oil products in 2019 is expected to be driven by the petrochemical sector and increasing economic activity in the OECD. Refining imbalances as well as the implementation of IMO 2020 are expected to increase travel distances, pushing tonne-mile demand growth to 2-3% in 2019.

Figure P.3



Sources: Clarksons, Danish Ship Finance

Figure x.4



Sources: Clarksons, Danish Ship Finance

A STRONG TIMECHARTER MARKET HAS PUSHED UP SHIP PRICES AND SECONDHAND TRANSACTIONS. HOWEVER, CONTRACTING REMAINS LOW DUE TO THE UNCERTAIN LONG-TERM OUTLOOK.

LONG-TERM RISKS HOLDS BACK CONTRACTING

Ordering was low in the first ten months of 2019 (fig. 5). This, coupled with increasing earnings, could indicate a challenged long-term oil demand outlook. Moreover, developments within ship design (e.g. CO_2 neutral ships) are increasing the risk of ordering newbuildings. The yards are struggling the most in terms of landing LR1 contracts; the segment has received just 13 contracts in the last four years and none so far in 2019. In addition to oil demand uncertainty changing trade patterns will lower demand for LR1 vessels.

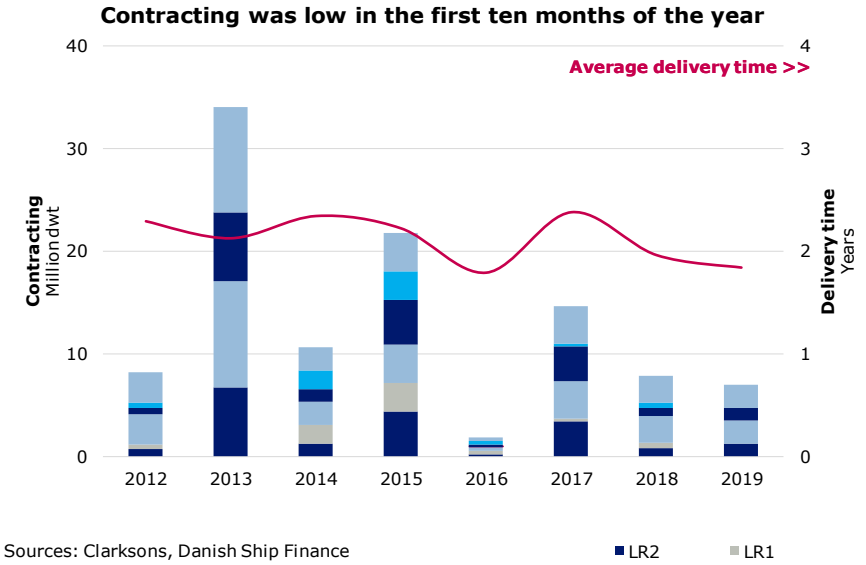
SECONDHAND VALUES ARE LAGGING STRONG TIMECHARTER RATES

Secondhand prices outpaced timecharter rates for LR2s and MRs in the first ten months of 2019. The value of the increase in the 1-year timecharter rate for a LR2 is about USD 2 million, while prices for 5-year-old vessels were up by USD 3 million. This suggests that the market is anticipating further increases in timecharter rates. The oil products trade is expected to pivot away from LR1 trade lanes, causing secondhand prices to decline 5% in 2019. This is expected to continue despite a temporary increase in timecharter rates driven by IMO 2020.

HIGH SECONDHAND ACTIVITY IN ANTICIPATION OF IMO 2020

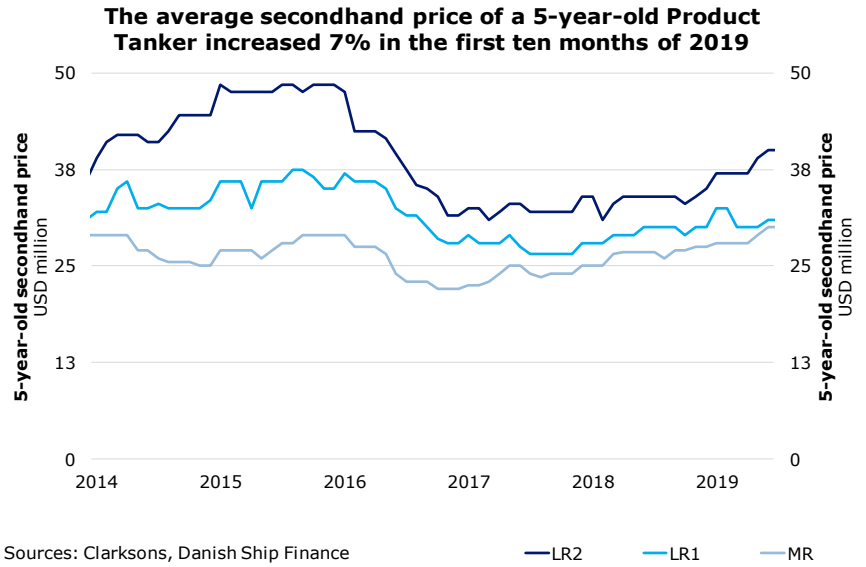
Positive market sentiment and ship prices increasing ahead of earnings have pushed the number of transactions in the first ten months of the year to 137, the highest since 2005. In line with the low contracting, owners seem to be favouring ships with short remaining economic lifetimes due to the long-term risks, pushing up the average age of sold vessels by two years up to 13, the highest on record.

Figure P.5



Sources: Clarksons, Danish Ship Finance

Figure P.6



Sources: Clarksons, Danish Ship Finance

THE SHORT-TERM PRODUCT TANKER OUTLOOK IS CHARACTERISED BY A POSITIVE DEMAND SHOCK FROM IMO 2020. AFTER 2020, THE MAIN DEMAND DRIVERS WILL BE PLASTIC PRODUCTION AND AIR TRAVEL. HOWEVER, THE ACCELERATING GREEN TRANSITION ADDS RISK TO THIS OUTLOOK.

The Product Tanker fleet is young and poised to grow. Fleet growth is currently in line with the expected short-term demand push. Our research suggests that the primary concern for the medium-term outlook relates to fleet growth, as current demand projections leave little room for expansion. Structural challenges ranging from peak oil demand being reached, increased recycling of plastics and electrification of the transport system dampen the long-term demand outlook, which could translate into lower long-term earnings expectations at some point.

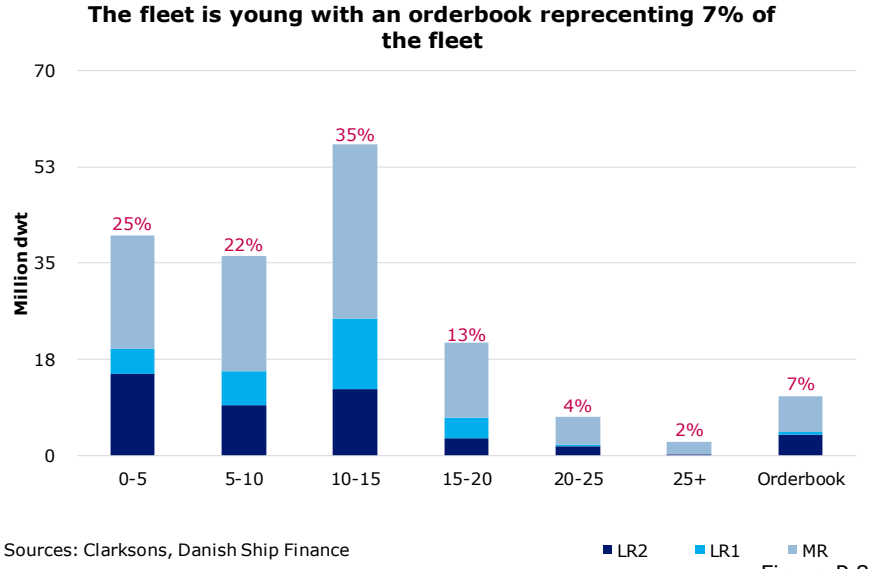
STRONG FLEET GROWTH FAVOURING THE LR2 AND MR SEGMENTS

The Product Tanker fleet is set for growth. The fleet is young and the orderbook corresponds to 7% of the fleet (fig. 7). The LR2 and MR segments are scheduled to grow by 9% and 7% in the coming three years, respectively, while the LR1 segment is only set to grow by 2%. These growth rates are in line with the expected change in trade patterns, with stronger demand for LR2s and MRs and lower demand for LR1.

FEW SCRAPPING CANDIDATES RAISES RISK FROM DEMAND

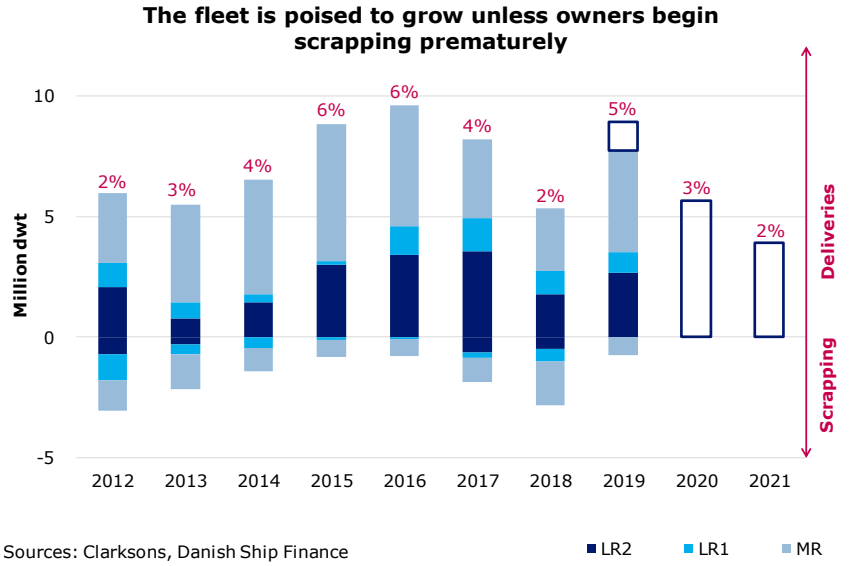
The fleet has limited rebalancing potential. Only 2% of the fleet is older than 25 years and just three LR2s and no LR1s are older than 25 years. To absorb the orderbook, future demand growth must remain healthy or owners will have to start scrapping prematurely. Absorption of the orderbook through older ships exiting the fleet would push the scrapping age for LR2s and LR1s down to about 20. For MRs, this would mean a scrapping age of 25. However, omitting vessels that do not trade internationally, the

Figure P.7



Sources: Clarksons, Danish Ship Finance

Figure P.8



Sources: Clarksons, Danish Ship Finance

MR scrapping age could dip as low as 20. Scrapping the oldest ship each time a new one is delivered is not the most realistic scenario; however, it provides an indication of the segment's limited ability to withstand potential demand fluctuations.

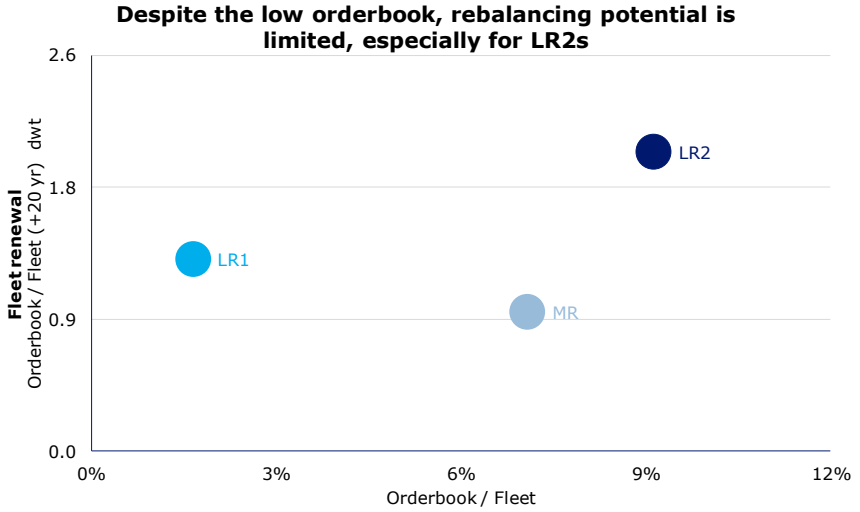
HIGH DEMAND EXPECTATIONS BOOSTED BY IMO 2020

Demand is projected to grow strongly in the coming 12 months on the back of IMO 2020. Thereafter, demand growth is expected to decelerate to about 2% annually. The strong growth in 2020 will be driven by the replacement of fuel oil previously transported on Crude Tankers with gasoil transported on Product Tankers, boosting demand. Estimates for Product Tanker demand growth vary greatly among forecasters but are in the range of 4-7%. Beyond 2020, the main driver of growth is expected to be jet fuel and naphtha. The Asian petrochemical industry is expanding its production capacity faster than the region's refineries. This means Asian naphtha imports must increase to cover the deficit. Simultaneously, the rapid expansion in the global middle class is causing a rise in air travel, boosting demand for jet fuel (fig. 10).

SHORT-TERM ECONOMIC RISK AND LONG-TERM SUSTAINABILITY RISK

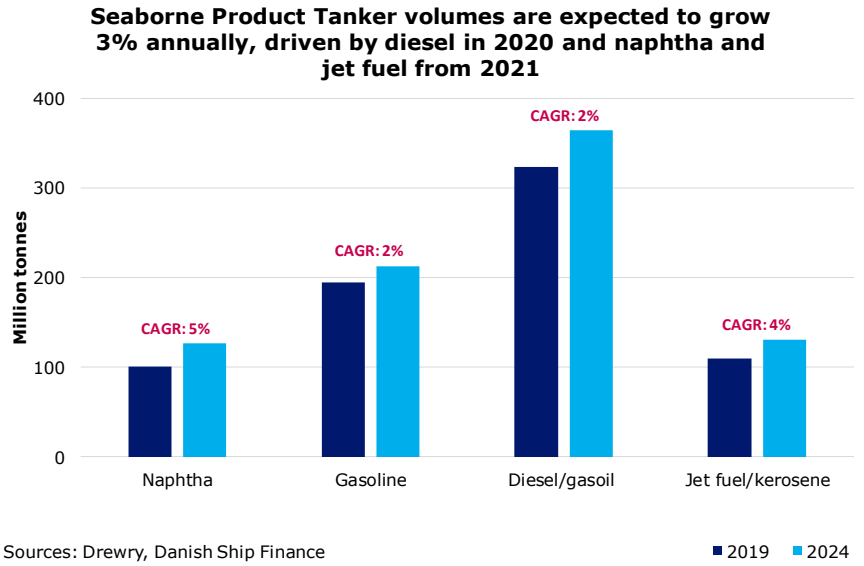
Product Tanker demand faces two types of risk in the coming decade: slowing economic growth and a structural shift away from an oil-based economy. Renewable energy is becoming more widespread and material consumption is increasingly designed for reuse (e.g. plastic recycling), both driving down long-term prospects for demand growth. In the coming five years, 25% of demand growth is forecast to stem from naphtha trade, driven by an expected increase in plastic demand. However, recycling may weigh heavily on future naphtha demand. Likewise, oil products used for transportation – i.e. gasoline, diesel and jet fuel – are expected to grow. As electric vehicles' market share increases, though, gasoline demand will come under pressure. Moreover, long-term technological advances may enable electrification of

Figure P.9



Sources: Clarksons, Danish Ship Finance

Figure P.10



Sources: Drewry, Danish Ship Finance

large vehicles and air transport, pressuring diesel and jet fuel demand.

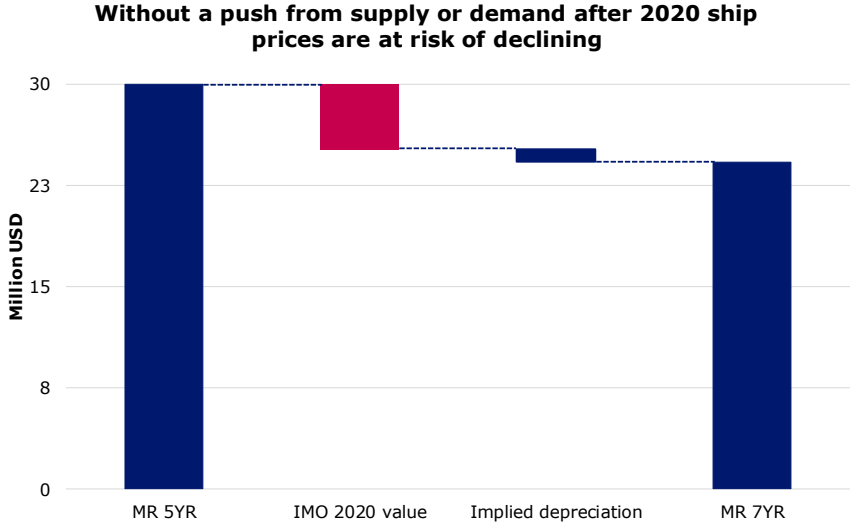
SHIP VALUES RISK DECLINING AS THE EFFECT FROM IMO 2020 WANES

Product Tankers' high valuations are being boosted by short-term earnings expectations. The market expects the implementation of IMO 2020 to drive up short-term earnings, but the medium- to long-term earnings potential for the segment remains unchanged. Currently, a 5-year-old MR tanker is valued at USD 30 million. However, the average earnings over the last ten years of USD 14,500 per day only correspond to USD 25 million. Assuming the effect from IMO 2020 lasts for two years, a premium of USD 7,000 per day above average earnings is needed to justify the valuation of USD 30 million. When this earnings premium disappears or starts to shrink, valuations are likely to drop (fig. 11).

POSITIVE EXPECTATIONS IN OPAQUE MARKET WITH STRUCTURAL RISKS

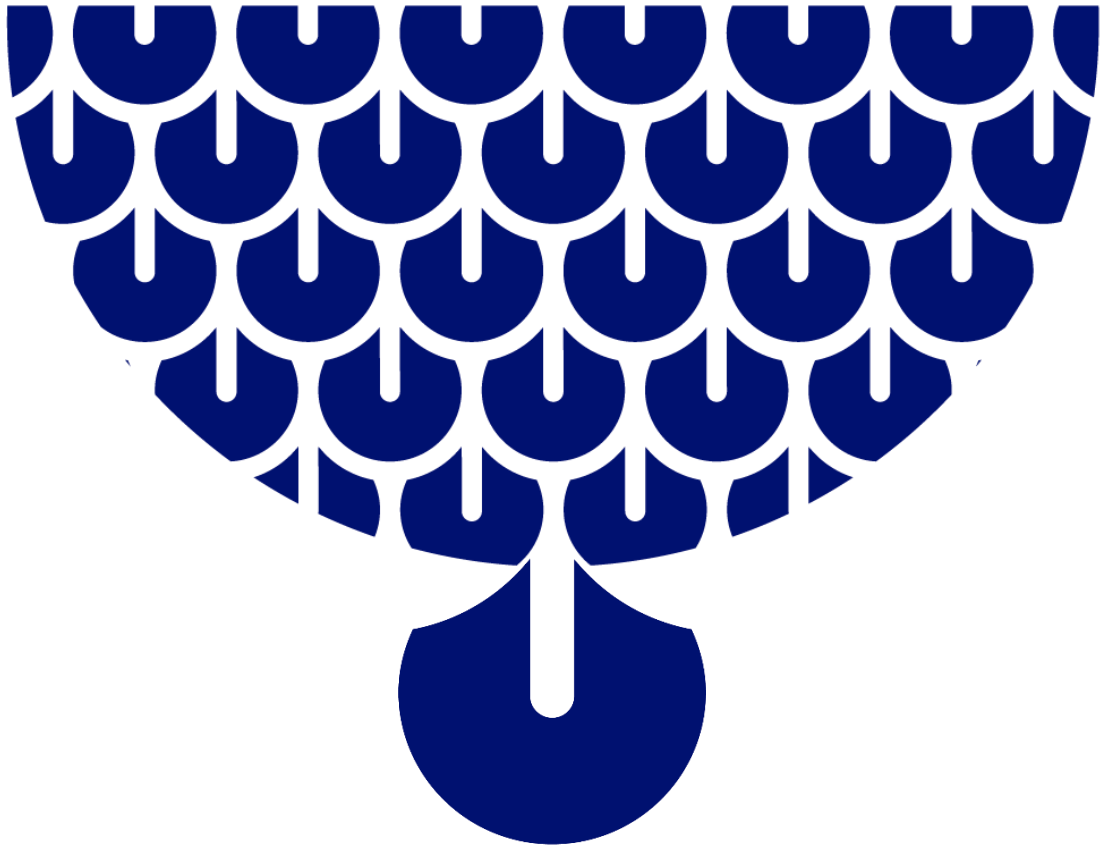
The short-term market outlook is good, albeit with downside risk to demand from the business cycle and to supply from high newbuilding deliveries. Moreover, a short-lived earnings boost is expected to cause ship values to peak within the next two years and then decline. Most observers consider the medium- to long-term outlook for Product Tankers to be strong owing to the growing consumer class in Asia. However, we believe oil products demand growth is at risk from electrification and recycling to the detriment of young vessels especially.

Figure P.11



Sources: Clarksons, Danish Ship Finance

LPG CARRIER



LPG TANKER

THE LARGER VESSEL SEGMENTS ARE EXPERIENCING A STRONG RECOVERY POWERED BY INCREASING LONG-HAUL TRADE FROM THE US TO ASIA. IN THE SMALLER SEGMENTS, THE RECOVERY HAS BEEN LACKLUSTRE AND VESSEL OVERSUPPLY PERSISTS. THE MARKET OUTLOOK IS BRIGHT, BUT INCREASING CONTRACTING COULD PUSH THE MARKET INTO OVERSUPPLY.

FREIGHT RATES

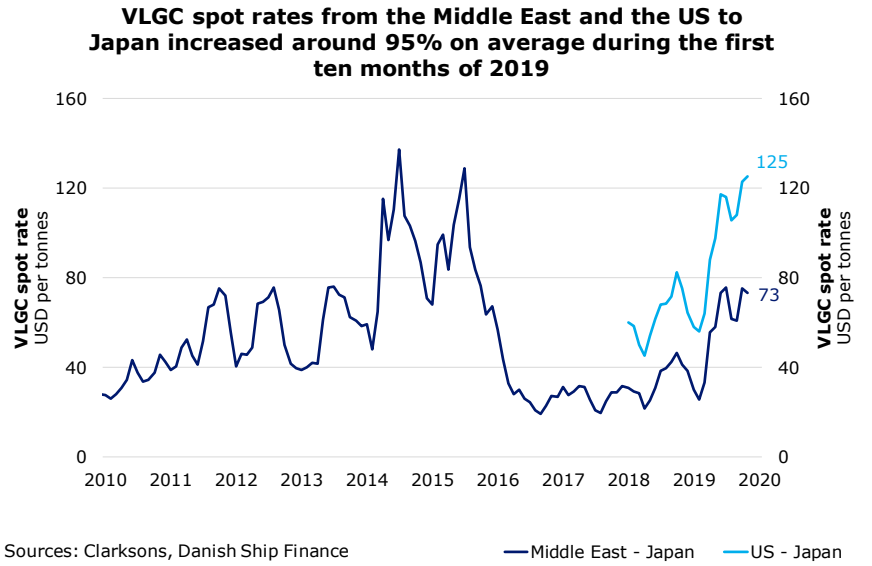
INCREASING US LPG PRODUCTION IS PUSHING LOW-PRICED CARGO VOLUMES TOWARDS THE ASIAN MARKET. THIS IS INCREASING LONG-HAUL TRADE VOLUMES, POWERING A RECOVERY IN THE LPG MARKET.

The LPG market has been at the bottom of the shipping cycle for the past three years, with a massive oversupply of ships keeping freight rates and secondhand values close to all-time low levels. A market recovery is finally underway, driven by moderate fleet growth and strong demand growth stimulated by increasing volumes of low-cost US LPG.

LONG-HAUL TRADE IS BOOSTING VLGC AND LGC RATES

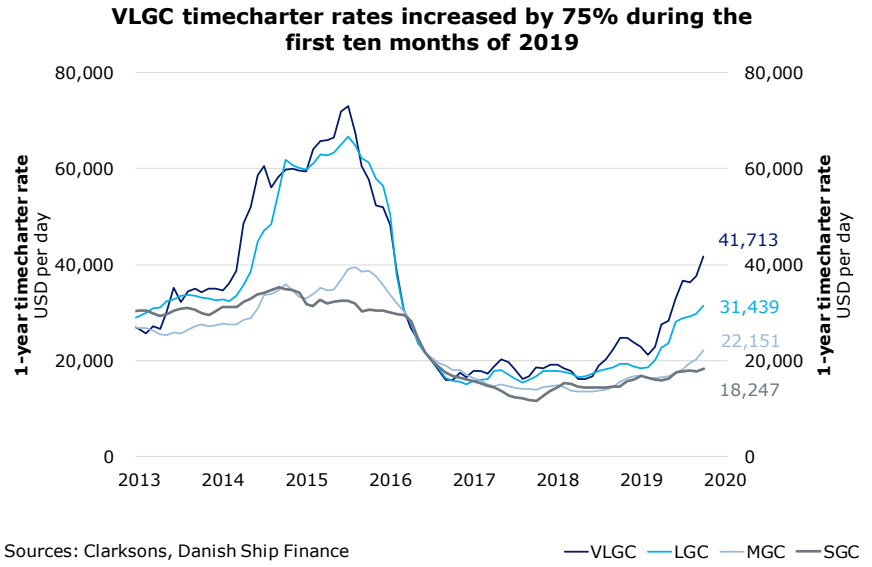
VLGC and LGC freight rates recovered markedly during the first ten months of 2019. Vessel demand increased following strong growth in long-haul trade on the back of a favourable LPG price spread between the US and Asia. In the MGC and SGC segments, the recovery has been moderate, as the segments continue to struggle with vessel oversupply. Furthermore, intra-regional trade – the main demand driver for MGCs and SGCs – has been somewhat muted due to low demand from the European petrochemical sectors. On a positive note, competition from larger vessels in MGC market should ease following the recovery in the VLGC segment. In the first ten months of 2019, VLGC spot rates doubled and the one-year timecharter rate was up 65% (fig. 1 and 2). In the same period, the one-year timecharter rate for MGCs and SGCs increased by an average of 15% (fig. 2).

Figure LPG.1



Sources: Clarksons, Danish Ship Finance

Figure LPG.2



Sources: Clarksons, Danish Ship Finance

FLEET GROWTH IS ACCELERATING AS MORE VESSELS ARE BEING DELIVERED AND THE FREIGHT RATE RECOVERY IS DAMPENING DEMOLITION ACTIVITY. NONETHELESS, DISTANCE-ADJUSTED LPG DEMAND HAS OUTPACED SUPPLY GROWTH, SINCE LONG-HAUL US EXPORT VOLUMES ARE ALSO INCREASING THE AVERAGE TRAVEL DISTANCE.

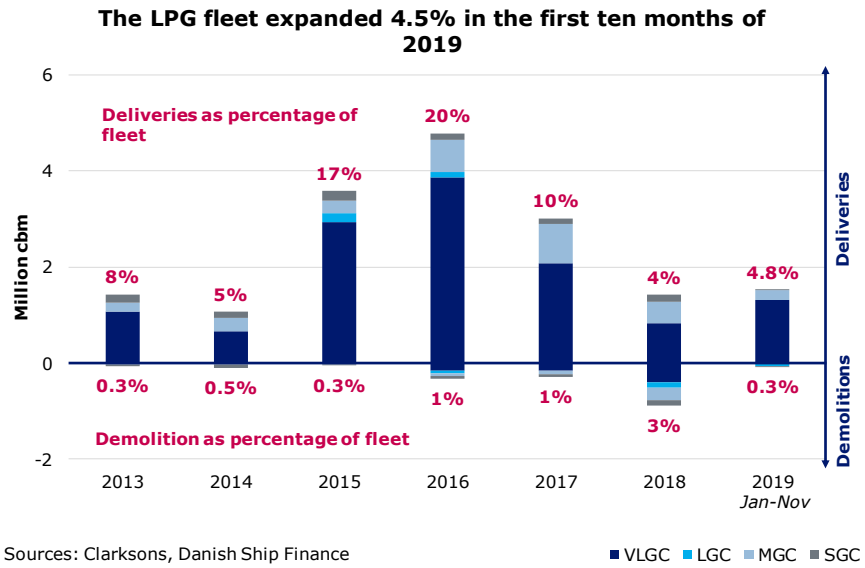
DELIVERIES CONTINUE TO HOLD BACK RECOVERY IN THE MGC SEGMENT

Deliveries accelerated during the first ten months of 2019, while the improving freight rates combined with a low number of scrapping candidates led to a pause in demolition activity. This resulted in net fleet growth of 4.5% in the period. By comparison, net fleet growth was 0.5% in the same period in 2018. The impact from vessels exiting the fleet to have scrubbers retrofitted was minimal; we estimate that retrofits reduced vessel supply by less than 0.2% during the period. We expect demolitions to remain low for the rest of 2019. Consequently, annual fleet growth is expected to accelerate to around 6%.

INCREASING US EXPORTS AND LOW LPG PRICES ARE DRIVING GROWTH

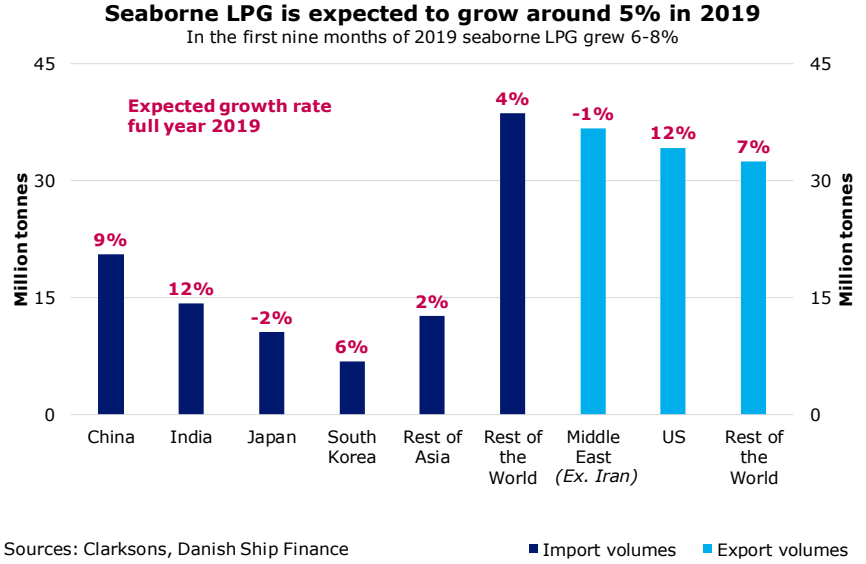
During the first nine months of 2019, seaborne LPG volumes grew by 8%, propelled by US and Asia-Pacific exports and Asian imports. Declining LPG prices pushed volumes from the US to Asia, although the US-China trade conflict has brought Chinese imports of US LPG almost to a standstill. To offset the decline in US volumes, China has been sourcing more LPG from the Middle East and the Asia-Pacific region. Consequently, US exports to Asia (non-China) have increased, which has had a positive effect on travel distances. Growth in US export distances has outweighed the decline in Chinese import distances. During the first nine months, export volumes from the Middle East declined by around 5%, due to the reintroduction of sanctions on Iran. We expect the attack on Saudi Aramco's processing facilities is likely to curb Middle East exports and boost Asian demand for US LPG in the fourth quarter of 2019.

Figure LPG.3



Sources: Clarksons, Danish Ship Finance

Figure LPG.4



Sources: Clarksons, Danish Ship Finance

CONTRACTING HAS BEEN MODERATE, AS SHIPOWNERS SEEM TO BE TAKING CARE NOT TO PUSH THE MARKET INTO OVERSUPPLY. HOWEVER, THE BALANCE REMAINS DELICATE, ESPECIALLY IN THE VLGC SEGMENT. SALE AND PURCHASE ACTIVITY IS AT AN ALL-TIME HIGH DRIVEN BY NON-SCRUBBER-FITTED ASSETS.

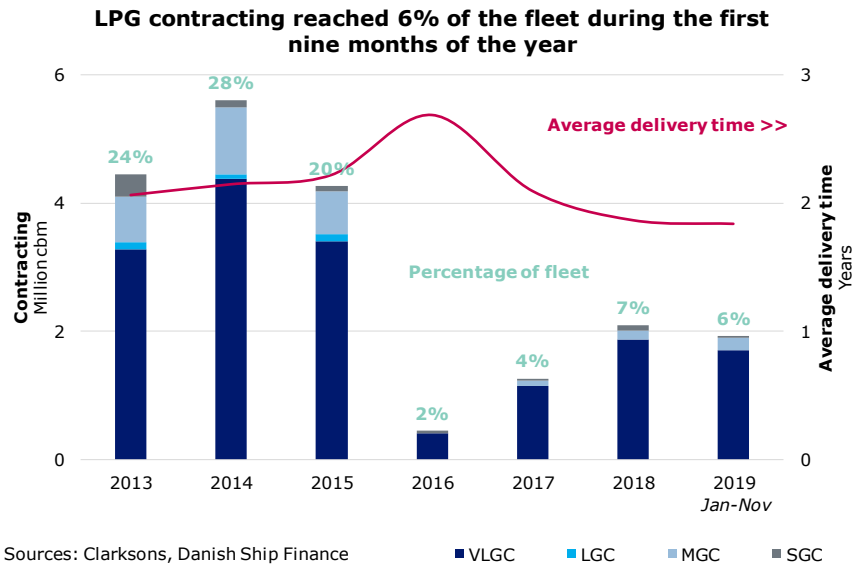
MODERATE CONTRACTING DESPITE INCREASING FREIGHT RATES

LPG contracting has increased steadily since 2016, particularly in the VLGC segment. This indicates that the market expects US export volumes to continue to increase in the years to come. However, it seems that owners are being careful not to push the fleet into oversupply, while some are refraining from ordering due to uncertainty over future fuel types and vessel specifications. Whatever the reason, contracting did not increase in the first nine months of 2019 compared to the same period in 2018. Nonetheless, the balance remains delicate and increasing contracting activity could easily push the fleet into oversupply. Newbuild orders reached around 6% of the fleet in the first nine months. In the second quarter, newbuild prices for VLGCs, MGCs and SGCs were USD 71 million, USD 47 million and USD 39 million, respectively.

ACTIVITY IN THE SECONDHAND MARKET AT AN ALL-TIME HIGH

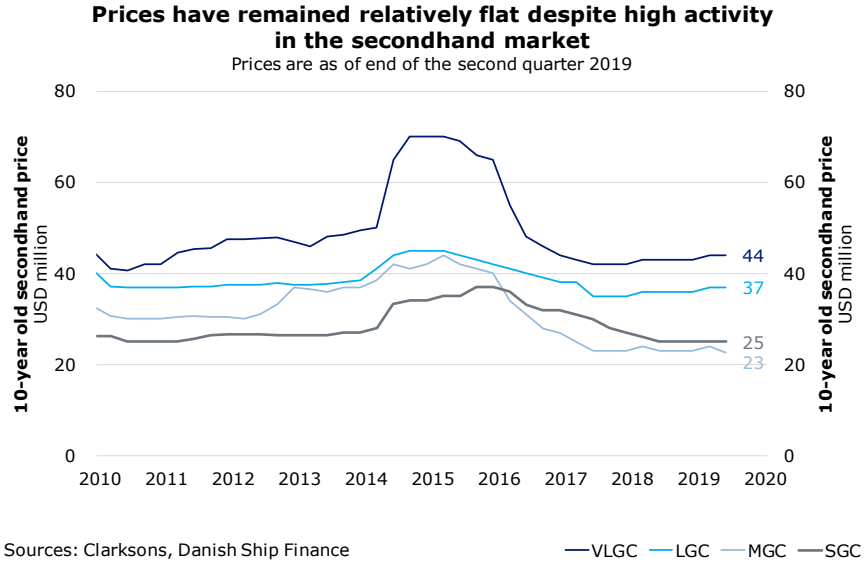
Shipowners selling off non-scrubber-fitted assets and exiting certain vessel segments has boosted activity in the sale and purchase market to an all-time high while keeping secondhand prices relatively low. In the first nine months, a total of 28 transactions involving 36 ships took place in the secondhand market: 17 SGCs, seven MGCs, three LGCs and nine VLGCs. Only five of the vessels were fitted with scrubbers. Buyers were mostly shipowners already in the LPG market, although some owners took advantage of the low prices to enter new vessel segments, e.g. the VLGC segment. Scrubbers have mostly been fitted to VLGC vessels but also to some MGCs and SGCs, depending on the specific trade of the vessels and the overall strategy of the owner.

Figure LPG.5



Sources: Clarksons, Danish Ship Finance

Figure LPG.6



Sources: Clarksons, Danish Ship Finance

MARKET FUNDAMENTALS SHOULD CONTINUE TO ENJOY SUPPORT FROM EXPANDING US EXPORT CAPACITY AND INCREASING ASIAN DEMAND. HOWEVER, THE FLEET REMAINS EXPOSED TO GROWING CONTRACTING ACTIVITY DUE TO THE LIMITED SCRAPPING POTENTIAL, ESPECIALLY IN THE VLGC SEGMENT WHERE STRONG GROWTH IN LONG-HAUL TRADE VOLUMES IS NEEDED TO ABSORB THE CURRENT ORDERBOOK.

The outlook for the LPG market is positive. Asia will continue to drive demand, although competition from alternative energy sources, like natural gas and electricity, is increasing in the household sector. Furthermore, we expect Chinese demand growth to be kept in check by the US-China trade conflict. We also remain sceptical about long-term LPG demand from the petrochemical sector due to an increasing global focus on and rapid advances in plastic recycling. However, in the short to medium term, we believe the market will be propelled by increasing volumes of long-haul US exports.

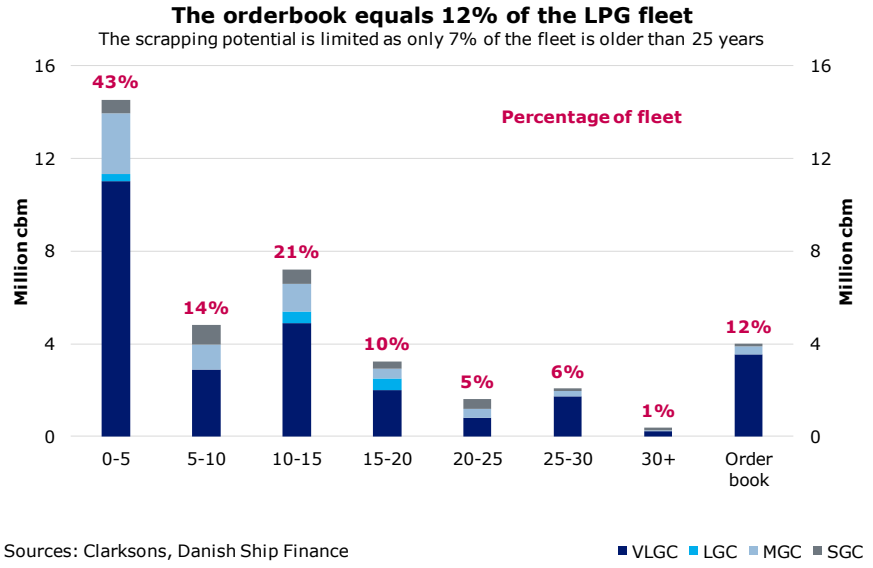
LIMITED SCRAPPING POTENTIAL IN THE VLGC SEGMENT

The LPG fleet consists of around 835 vessels. The orderbook contains 61 ships: 40 VLGCs, seven MGCs and 14 SGCs, equalling 12% of the fleet. Around 7% of the fleet is older than 25 years: 25 VLGCs, 11 MGCs and 21 SGCs. If demand begins to slow, the orderbooks in the MGC and SGC segments could be absorbed by older ships exiting the fleets with the vessels' economic lifetime being maintained at around 30 years. In contrast, absorption of the VLGC orderbook would reduce the economic lifetime of VLGC ships to around 20 years.

FLEET GROWTH SET TO ACCELERATE

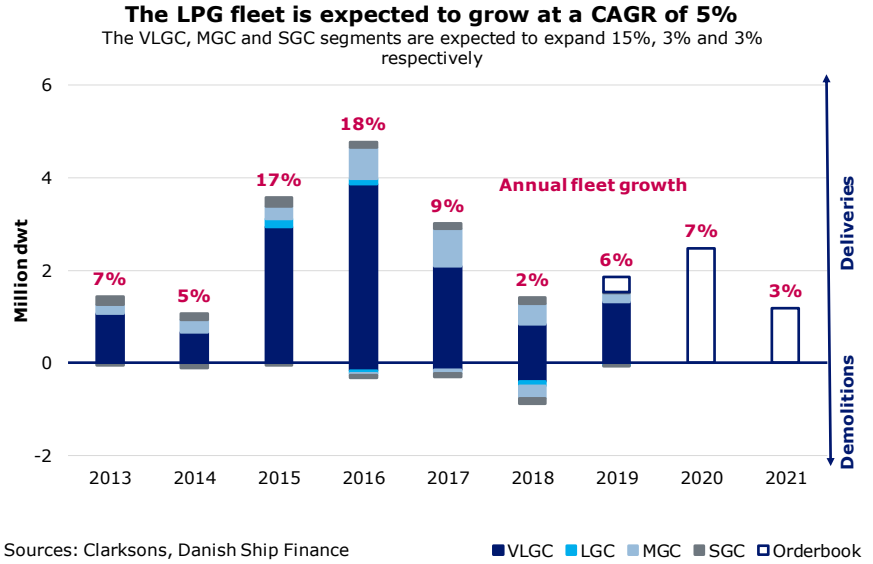
Fleet growth is scheduled to accelerate to 6% in 2019 and increase further to 7% in 2020 (excluding future demolition). Growth will be driven by the VLGC segment, which is set to see fleet expansion of 15% by end-2021, leaving the segment vulnerable if demand fails to absorb incoming vessels. Given the

Figure LPG.7



Sources: Clarksons, Danish Ship Finance

Figure LPG.8



Sources: Clarksons, Danish Ship Finance

current market conditions, we expect demolition activity to remain relatively low. Furthermore, the freight rate recovery could stimulate contracting activity. With an average delivery time of less than two years currently, new contracts could add to fleet growth in 2021, pushing supply ahead of demand.

TRAVEL DISTANCES SHOULD PROPEL DEMAND AHEAD OF SUPPLY

We expect seaborne LPG demand is set to grow around 5% per year until end-2022 (fig. 9). Hence, fleet growth is expected to outpace demand on a volume basis in 2019 and 2020. However, increasing long-haul trade from the US to Asia is expected to boost travel distances and push distance-adjusted demand ahead of supply. In periods with slow growth in long-haul trade, though, the large influx of new VLGC ships will result in supply outpacing demand. VLGC freight rates are likely to decline sharply in such periods.

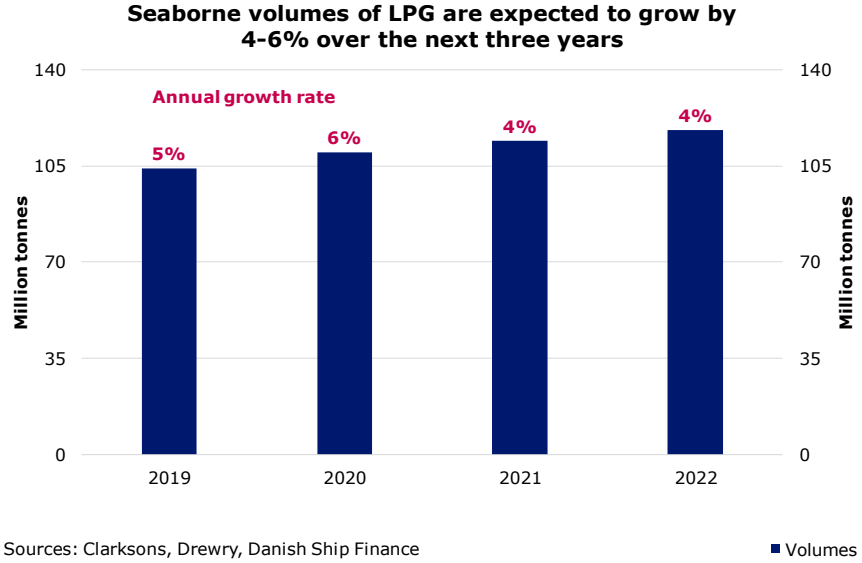
INCREASING LPG AVAILABILITY COULD INCREASE FUTURE DEMAND

Over the next three years, US export capacity is set to expand by around 15 million tonnes. The increasing availability of low-cost US LPG is expected to stimulate global demand growth, especially from the Asian and European petrochemical sectors. Given sufficient demand growth, US exports could accelerate growth in LPG volumes beyond our forecasts (fig. 9). However, the US-China trade conflict is limiting the growth potential. Middle Eastern LPG exports are expected to grow at a CAGR of around 2-3% over the next three years. The relatively slow growth will be driven by a steady increase in domestic demand from the household and petrochemical sectors.

ASIA WILL CONTINUE TO DRIVE IMPORT VOLUMES

Asia accounts for 65% of global LPG imports and for around 70% of import volume growth. Asian LPG imports are expected to grow by around 7% annually over the next three years, driven primarily by China, India and South Korea. In China, both the household and petrochemical sectors, especially with new propane dehydrogenation capacity coming online, will drive demand. In India, the household sector continues to be the main demand driver. Since 2016, the government has encouraged households to switch from dirty-burning fuels, like wood and coal, to LPG by subsidising LPG prices. Household sector demand is declining in South Korea, but increasing demand from the petrochemical sector should result in overall demand growth.

Figure LPG.9



Sources: Clarksons, Drewry, Danish Ship Finance

CHINESE DEPENDENCE ON MIDDLE EASTERN LPG COULD CAP GROWTH

China is becoming increasingly dependent on Middle Eastern LPG imports. This reliance could increase Chinese import prices and in turn lead to slower growth in Chinese LPG demand. According to our forecasts (fig. 9), we expect Chinese LPG growth to be limited to around 4-6% per year. This is a conservative estimate and import volumes could increase beyond our estimate if the US-China trade conflict is resolved.

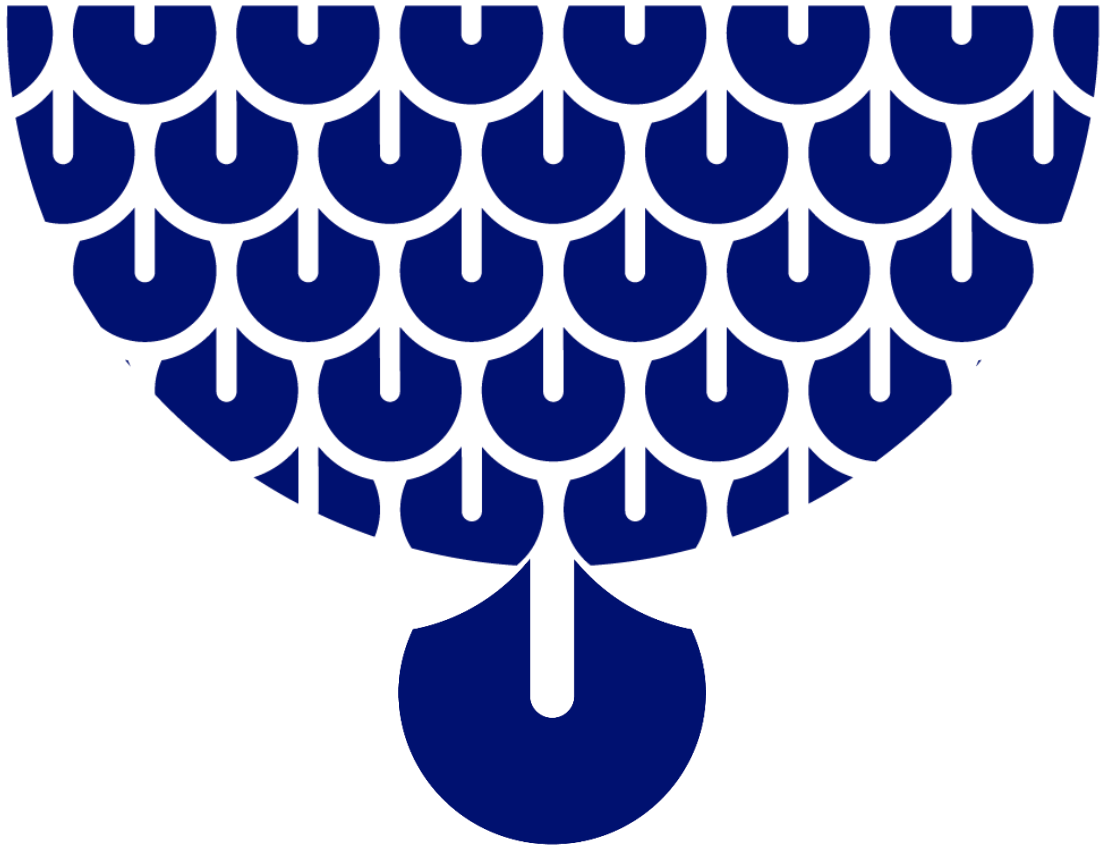
COMPETITION FROM ALTERNATIVE FUELS IN THE HOUSEHOLD SECTOR

In the household sector, LPG is a transitional fuel. As markets mature, LPG is replaced by natural gas and electricity. This is happening in China, especially in the north east of the country, due to pipeline imports of Russian natural gas, and some large cities in India, although the effect on LPG demand is being mitigated by growing consumption outside large cities. However, the rapid development and declining costs in wind and solar energy could speed up the transition process. Furthermore, LPG demand potential in emerging markets, like Africa, could shrink as electricity becomes price competitive. These factors will impact the long-term growth potential of the seaborne LPG market.

RECYCLING COULD LOWER THE GROWTH RATE OF SEABORNE LPG

Global plastic production is expected to double by 2030. This will create long-term LPG demand growth from the petrochemical sector. According to IHS Energy petrochemical LPG demand will grow at a CAGR of 4% up to 2030. Hence, the sector will account for around 50% of LPG demand growth. However, increasing focus on plastic recycling, especially chemical recycling where plastic is used as a feedstock to produce LPG, could lower the proportion of virgin LPG needed in plastic production. This could result in less intense demand for seaborne LPG from the petrochemical sector in the medium to long term.

LNG CARRIER



LNG TANKER

THE LNG MARKET IS ENJOYING STABLE GROWTH. HOWEVER, INCREASING DELIVERIES OVER THE NEXT TWO YEARS AND SLOWING GROWTH IN EXPORT CAPACITY ARE LIKELY TO CREATE VESSEL OVERSUPPLY AND PUT PRESSURE ON FREIGHT RATES.

FREIGHT RATES

FREIGHT RATES HAVE BEEN SUPPORTED BY INCREASING LNG AVAILABILITY WHICH HAS STIMULATED GLOBAL DEMAND AND ABSORBED INCOMING VESSELS.

A massive expansion in export capacity has been powering the recovery in the LNG market. However, LNG export volumes are growing ahead of import requirements and the market is becoming progressively oversupplied. The increased volumes have stimulated spot trade and resulted in significant spot rate volatility. Conditions in the timecharter market have been relatively stable, keeping rates at a high level.

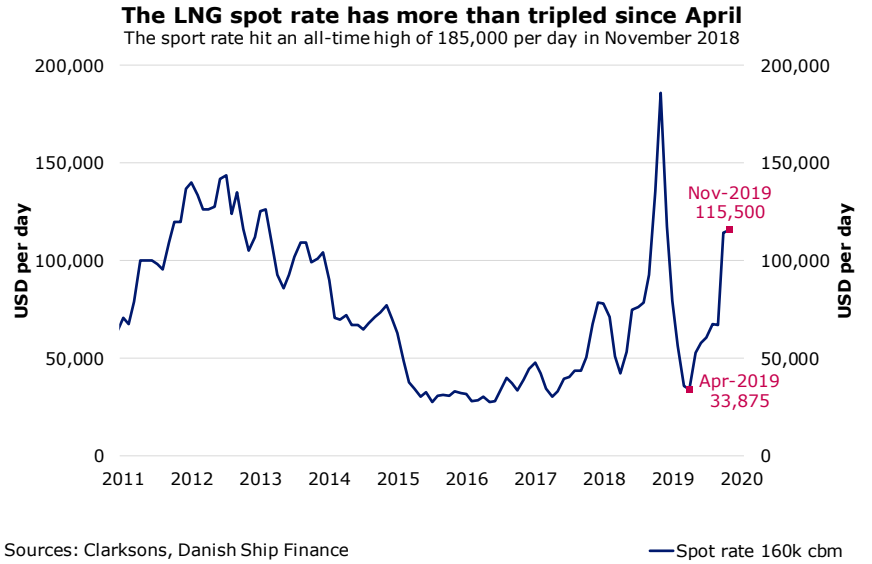
HIGH VOLATILITY IN THE SPOT MARKET

From November 2018 to April 2019, the spot rate dropped from an all-time high to a two-year low. The spike was caused by strong seasonal demand related to winter stock building. However, mild winter weather resulted in a sharp drop in demand as booming LNG stocks slowly declined. By October, the spot rate had increased to around USD 115,000 per day on the back of renewed Asian demand. In the first ten months of 2019, the average spot rate was 15% lower than in the same period in 2018.

LIMITED SHIP AVAILABILITY IN THE TIMECHARTER MARKET

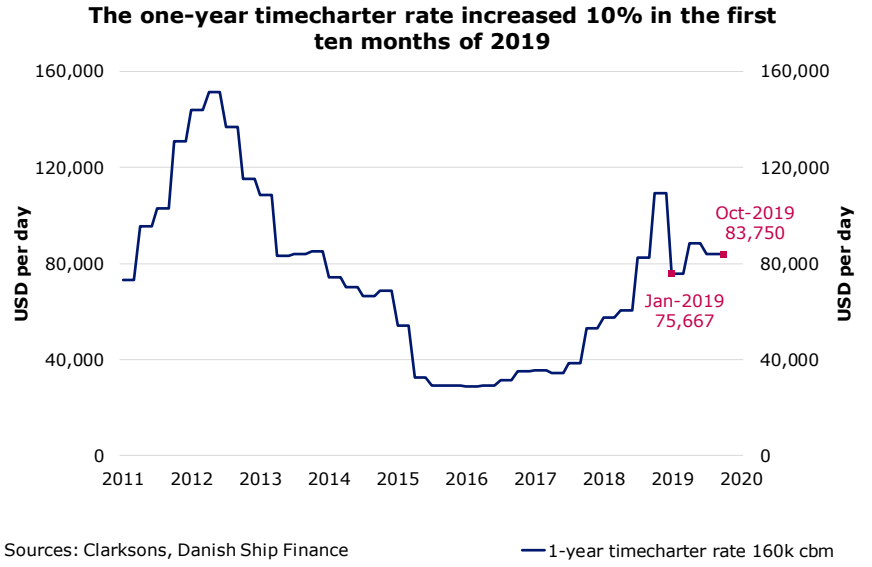
The timecharter market has been supported by new export capacity coming online, which has enabled newbuild deliveries to enter into their designated long-term charter contracts. The limited ship availability in the charter market has led to upward pressure on freight rates: the one-year timecharter rate increased by around 15% in the first ten months of 2019. The average timecharter rate was 25% higher than in the same period in 2018.

Figure LNG.1



Sources: Clarksons, Danish Ship Finance

Figure LNG.2



Sources: Clarksons, Danish Ship Finance

DISTANCE-ADJUSTED DEMAND HAS EQUALLED FLEET GROWTH AND KEPT VESSEL UTILISATION HIGH. EXCESS EXPORT VOLUMES HAVE BEEN PUSHED TO THE EUROPEAN MARKET.

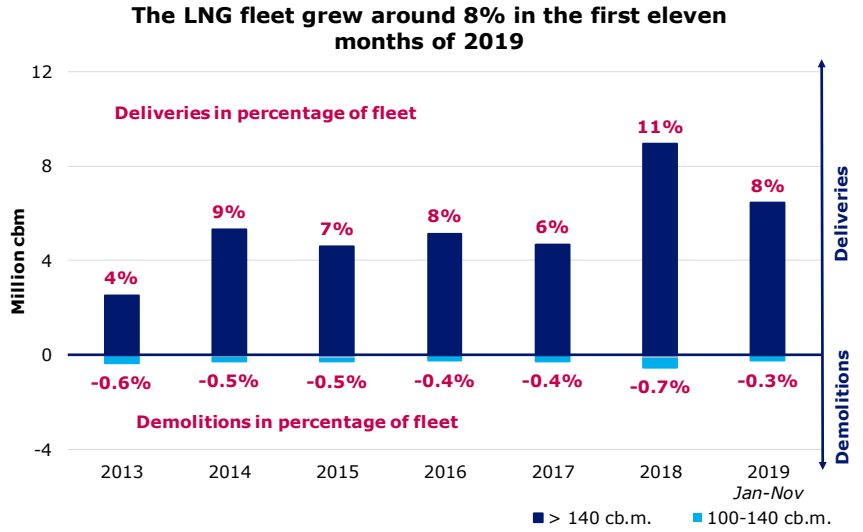
INCREASING LNG VOLUMES ARE STIMULATING DELIVERIES

The positive market sentiment has supported fleet growth. new ships have entered the market on time and most have been tied to long-term contracts. A total of 36 ships have entered the fleet so far this year, one or two of which we expect to have entered the spot market. The number of older laid-up vessels declined from 20 in January to 16 in September: two ships were demolished and two returned to service, both equalling 0.3% of the fleet. This resulted in actual fleet growth of around 7% in the first ten months of 2019. The fleet is set to expand by 1 percentage point in the last two months of 2019. We estimate that around 60% of the fleet and 95% of the orderbook are able to use LNG as propulsion fuel, making scrubber retrofitting redundant in the LNG segment.

LNG OVERSUPPLY IS LOWERING TRAVEL DISTANCES

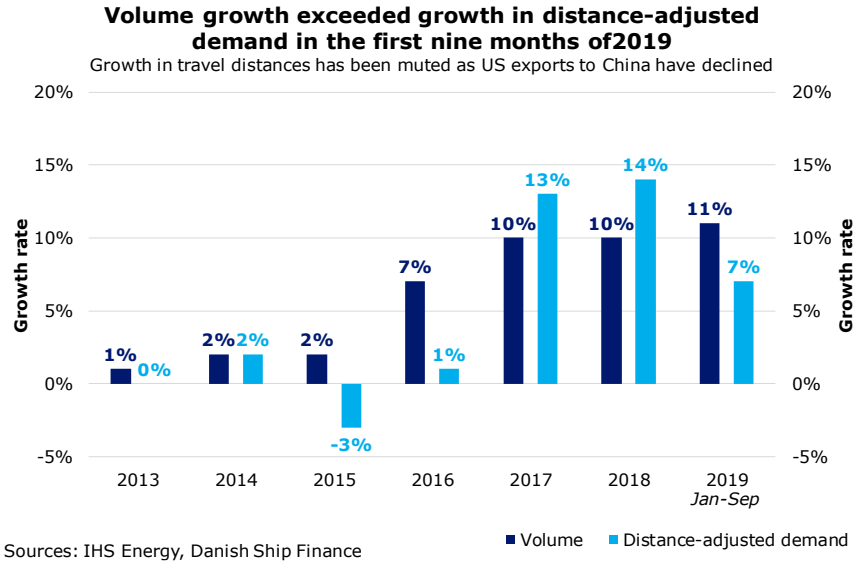
Cargo availability is becoming increasingly abundant. The growth potential of US LNG in the Asian market is being limited by increasing Australian LNG exports and the US-China trade conflict. US LNG has instead been exported to the closer European market, which has reduced growth in travel distances. Going forward, this shift in trade flows will occur whenever the Asian market is unable to absorb US LNG volumes. Europe is able to absorb LNG oversupply due to its underutilised import storage facilities and a flexible demand, e.g. coal-to-gas switch in the power sector. LNG volumes increased by 11% to 270 million tonnes in the first nine months of 2019. Qatar, Australia and the US accounted for 50% of export volumes, while Asia accounted for 60% of import volumes. The US and Australia increased export volumes by 8.5 million tonnes and 8 million tonnes, respectively, driving more than 60% of volume growth in the period.

Figure LNG.3



Sources: Clarksons, Danish Ship Finance

Figure LNG.4



Sources: IHS Energy, Danish Ship Finance

THE RAISING CONTRACTING LEVEL OVER THE PAST TWO YEARS IS SET TO PUSH THE FLEET INTO OVERSUPPLY. THE INFLUX OF NEW SHIPS WILL PUT PRESSURE ON SECONDHAND VALUES.

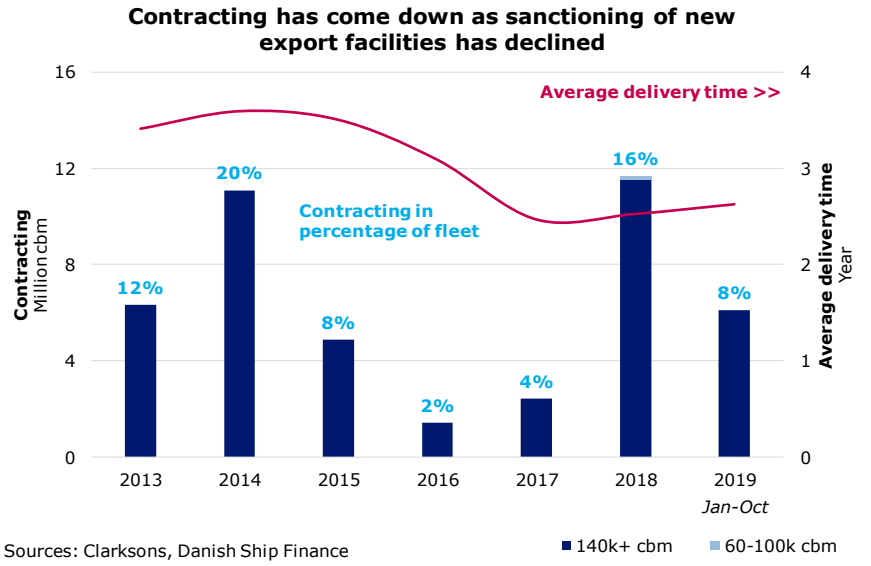
CONTRACTING MUST DECLINE TO LIMIT FUTURE OVERSUPPLY

A sharp decline in contracting activity is necessary to limit medium-term oversupply in the LNG market. If contracting activity remains high in 2020, the market will become increasingly oversupplied by 2023. In the first nine months of 2019, contracting did come down from the all-time high seen in 2018, with a total of 35 ships ordered, equalling 8% of the fleet. All orders were placed by established shipowners with fleets of more than ten ships. However, 16 ships were ordered by shipowners new to the LNG market. Most of these orders were placed speculatively without long-term charter contracts. Nonetheless, when these ships enter the spot market, they will have a clear advantage over older ships when competing for employment due to their low fuel consumption. The large inflow of modern ships into the spot market is likely to result in lower freight rates and/or premature scrapping of older, less fuel-efficient vessels.

DOWNSIDE RISK IS INCREASING FOR YOUNGER ASSETS

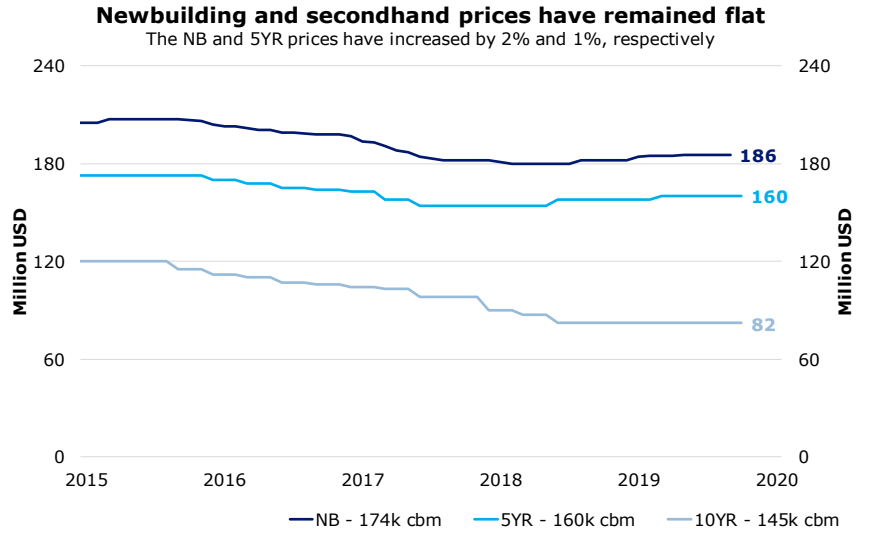
The rapid developments in ship design and increasing newbuilding activity are creating additional downside risk for relatively young vessels. The value chart to the right (fig. 6) shows the widening price gap between a ten-year-old and a five-year-old ship. This illustrates the split between modern vessels, with low boil-off rates and high fuel efficiency, and older, less efficient vessels. The price gap indicates that ten-year-old vessels are facing strong competition from more modern vessels, resulting in lower earnings. This increases the downside potential for assets with remaining lifetimes of 20 years. The secondhand market was relatively illiquid in the first nine months of 2019; only three ships changed hands and prices stayed relatively flat.

Figure LNG.5



Sources: Clarksons, Danish Ship Finance

Figure LNG.6



Sources: Clarksons, Danish Ship Finance

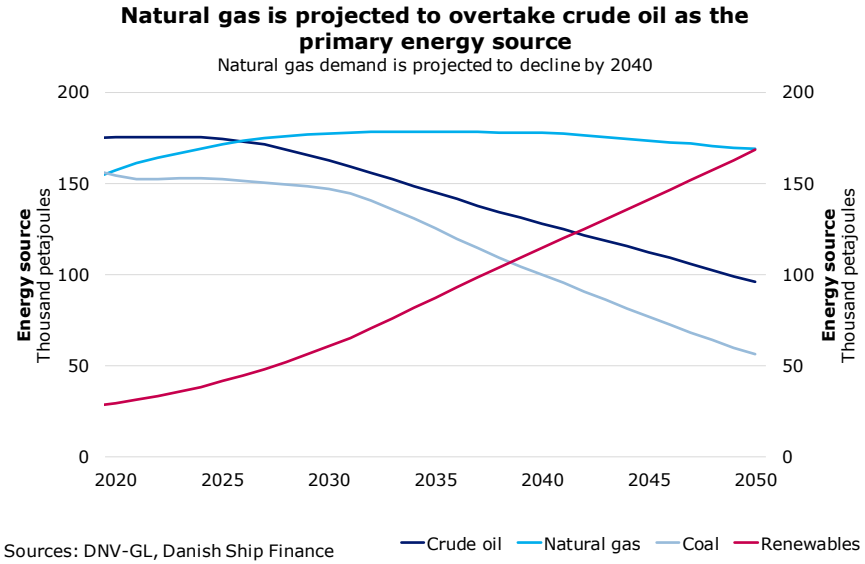
THE LNG MARKET IS BEING CHALLENGED BY A MASSIVE AND FRONT-LOADED ORDERBOOK, DECLINING GROWTH IN EXPORT CAPACITY, CHANGES IN TRADE PATTERNS AND THE POSSIBILITY OF A SIGNIFICANT REDUCTION IN ECONOMIC LIFETIMES OF OLDER VESSELS.

A massive orderbook combined with a significant reduction in export capacity growth is likely to increase competition in the seaborne LNG market. Older, less efficient vessels coming off long-term charters within the next two to four years are likely to be pushed out of the long-term charter market. These vessels might find employment in the spot market which is currently being boosted by increasing LNG availability. However, the spot market could start to shrink as LNG availability tightens. If this happens, many of these older, less efficient vessels could become subject to layup or premature scrapping. The medium-term demand outlook is brighter, although growing flexibility and market liberalisation is increasing market uncertainty. The long-term outlook remains challenged. As a replacement for oil and coal natural gas has a strong growth potential. However, the growth period is likely to be short as natural gas demand is projected to be declining within the lifetime of ships already in the fleet (fig. 7).

THE GLOBAL GAS MARKET AND ITS IMPLICATIONS FOR LNG CARRIERS

Global natural gas demand continues to grow strongly, supported by abundant and diversified sources of supply. This development continues to fertilise the ground for the LNG carrier market, but downside risk is building as the market becomes more mature. More cargo volumes are being spot traded, destination-free supply contracts are becoming ever more common, and oil majors and trading houses are increasing their market share accordingly. The destination flexibility of low-priced LNG volumes from North America makes it an attractive component of importers' ability to manage their demand and supply balance, while also providing opportunities for LNG trading. In combination with increased FSRU capacity, additional markets are allowed access to import LNG with lower initial investment costs, shorter installation periods and greater flexibility to meet short-term gas demand. These trends are developing in parallel with a liberalisation drive in global energy markets. The long-term outlook for global natural gas demand appears to be strong, but the downside risk for investors in LNG carriers is mounting. Abundant supply is no guarantee of long-term demand growth.

Figure LNG.7



Sources: DNV-GL, Danish Ship Finance

THE LNG FLEET IS HEADING INTO OVERSUPPLY

The LNG fleet consists of around 550 ships, of which 50% are younger than ten years. The orderbook contains around 110 ships, equalling 23% of the fleet, of which 100 are due to enter the market by the end of 2021. Only 4% of the fleet is older than 30 years. The massive inflow of vessels is expected to push fleet growth ahead of demand over the next two years, creating a supply surplus and resulting in lower freight rates by the end-2020 or early 2021 (fig 9). We expect the market to remain oversupplied until 2024.

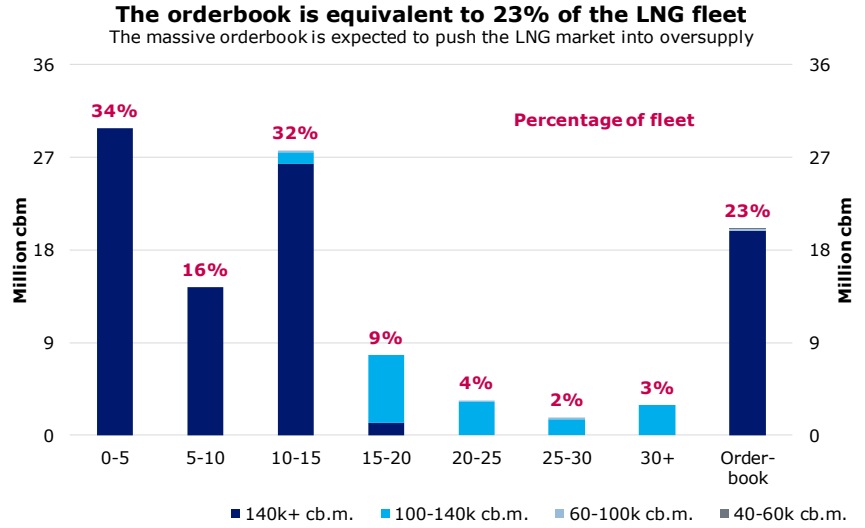
POSTPONEMENTS AND DEMOLITIONS ARE SET TO INCREASE

We believe shipowners will try to mitigate vessel oversupply by postponing newbuild deliveries and scrapping older ships. However, over the next two years vessel demand is set to grow by around 50 ships, while 100 ships are scheduled for delivery (fig. 9). Even if postponements and demolitions increase, we expect freight rates to decline. Furthermore, increased demolition activity could lead to value depreciation, as the scrapping age could come down significantly. As an illustration, demolishing all active vessels (>100,000 cbm) older than 20 years would be necessary to balance supply and demand until 2024, measured by number of ships.

NEAR-TERM DISTANCES-ADJUSTED DEMAND COULD DECLINE

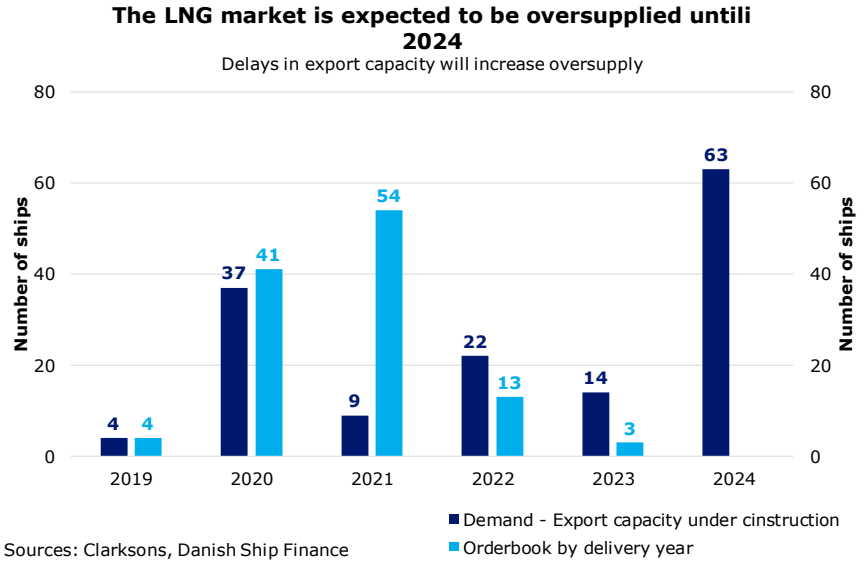
The US is expected to power 75% of growth in export capacity up to 2024, increasing travel distances and boost distance-adjusted demand as more US LNG is transported to the Asian market. However, near-term Asian demand for US LNG is likely to be muted due to the US-China trade conflict and the general oversupply of LNG. Therefore, the growing volumes of US LNG are expected to be exported to the European market, shortening travel distances. Furthermore, Asian-Pacific export capacity is set to increase in 2020, reducing travel distances for Asian imports. Consequently, we expect distance-adjusted demand to decline in 2020, lowering vessel utilisation.

Figure LNG.8



Sources: Clarksons, Danish Ship Finance

Figure LNG.9

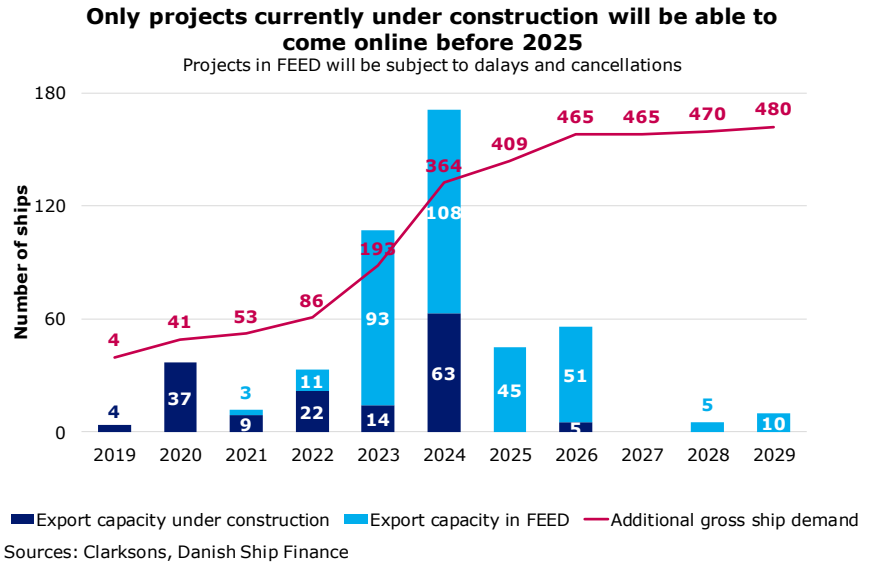


Sources: Clarksons, Danish Ship Finance

MEDIUM-TERM GROWTH IS SET TO INCREASE

We expect vessel oversupply to subside during 2024, when strong growth in export capacity is projected to return (fig. 9 and 10). We do not expect capacity currently in FEED to be able to enter the market before 2025. Furthermore, many of these projects will be subject to further delays and cancellations. Nonetheless, export capacity current under construction is expected to eliminate oversupply by the end-2024. This assumes low contracting activity and minimal delays in the buildout of new export capacity.

Figure LNG.10



Sources: Clarksons, Danish Ship Finance

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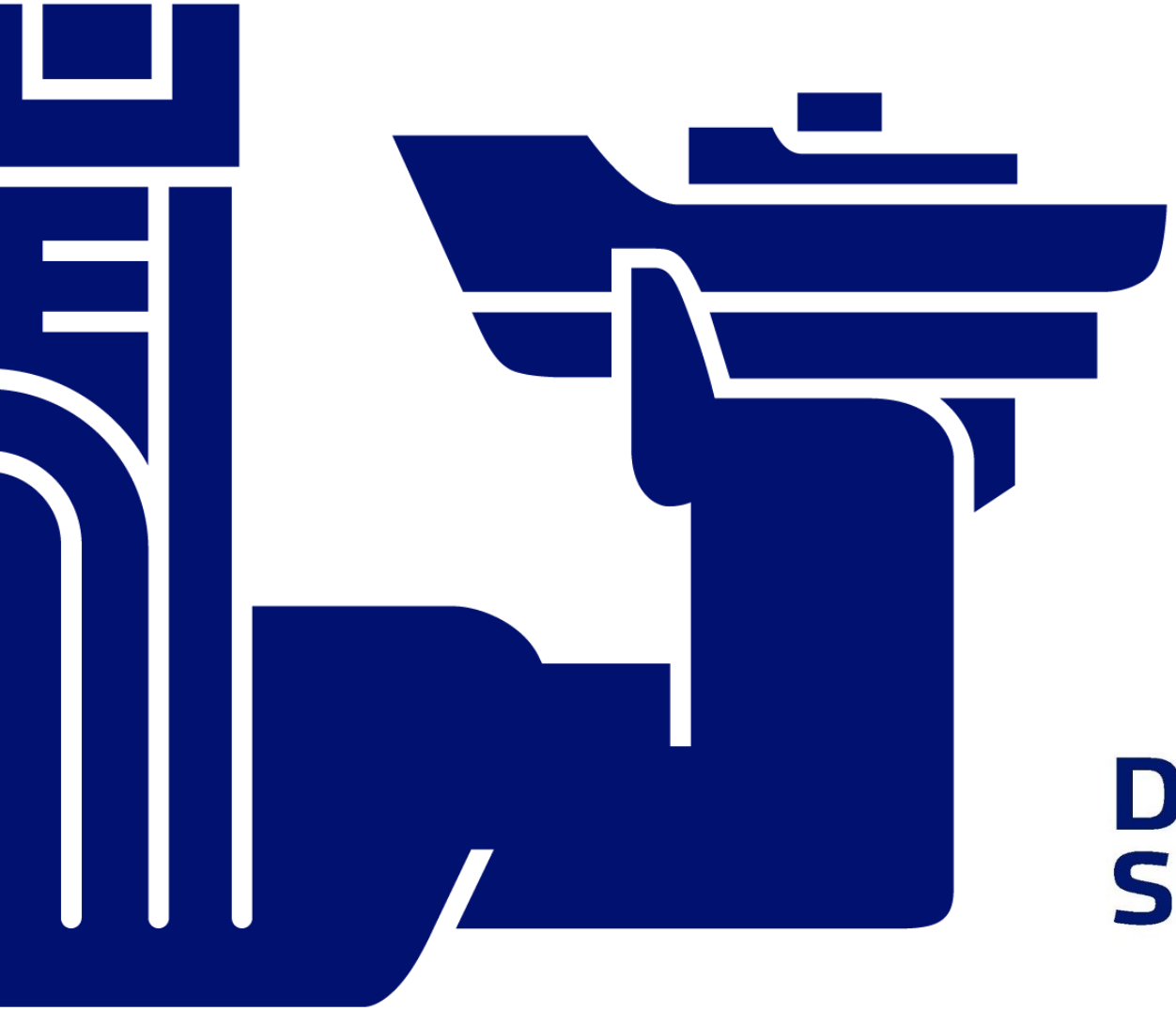

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