SHIPPING MARKET REVIEW – NOVEMBER 2022

DISCLAIMER

HEAD OF INNOVATION & RESEARCH

Christopher Rex, rex@skibskredit.dk

ANALYTICAL TEAM

Pardeep Singh Rana, Analyst

Mads Nybo Johansen, Analyst

Nicolai Søltoft Friis, Junior Analyst

Novin Taheri, Junior Analyst

TABLE OF CONTENTS

RACE TO ZERO

Resetting the destination or navigating a new route?

THE RACE TO ZERO IS ON

Transitioning to zero is strategically not only about the fuel but also about the business model

The shipping industry is powered by low-quality fuels, “bottom-of-the-barrel” products that are globally available, cheap and in low demand from other industries. The transition to zero carbon emissions is changing more than the industry’s fuel profile. In the future, vessel owners’ ability to yield an attractive return on invested capital will require a business model that is designed to harvest maximum efficiency potential, including lowering the cost of capital.

The shipping industry’s race to zero requires the industry to switch to premium green fuels that are currently not available but likely also to be demanded by several other industries. The price of the new fuels is expected to be significantly higher – think 3x – than current bunker costs, and green fuel prices are likely to fluctuate with the regional and daily price of green electricity.

NAVIGATING IMMATURE MARKETS

The global market for greener fuels is immature and many of the services that are required for a spot market are not in place. The creation of new fuel markets is not a task for small or mid-sized shipowners.

LONG-TERM CAPITAL COMMITMENTS ARE REQUIRED

Early adopters of new fuels, across industries, will need to commit to long-term offtake agreements that allow producers to scale production. The investments required to build scaled fuel production are massive. Producers will need a high degree of financial certainty from creditworthy counterparties to start building new infrastructures.

HARDLY A JOB FOR SMALL AND MEDIUM-SIZED SHIPOWNERS

There are many creditworthy shipowners in the industry, but the industry has some issues when it comes to scale. The average shipowner has four to five vessels. Few owners will have the balance sheet to secure long-term fuel offtake agreements with producers of alternative fuels. That is not the only challenge, though. The introduction of long-term fuel offtake agreements is likely to go hand in hand with long employment contracts to balance costs and income.

FEWER VESSELS ARE LIKELY TO PARTICIPATE IN THE ASSET GAME

Vessels that are committed to long-term contracts are less likely candidates to participate in a future asset game. These vessels will create value from the cash flow yield from operations rather than from the asset game. That may sound extremely unattractive to many, as the cash flow yield from operating vessels has been a weak driver of value across vessel segments and business models over the past 15 years, except during short-lived periods of freight rate super-cycles.

BUSINESS MODEL INNOVATION IS REQUIRED

If past performance is any guide for the future, it seems likely that more needs to change than just long contracts before shipping can achieve an attractive yield from asset ownership in the age of alternative fuels.

DEMAND COULD BEGIN TO DECLINE

Demand could begin to decline if cargo owners are not willing to pay more for their transport or if shipowners do not find a way to bridge the gap between costs and customers’ willingness to pay. Segments will not move in tandem. Liner shipping is likely to front-run the tramp segments.

SHIPOWNERS MAY NOT BE IN THE DRIVER'S SEAT

Change on this scale calls for a global perspective on sector integration

The introduction of greener fuels at scale is some years ahead of us, but it is already beginning to shape the strategic outlook. Vessel ownership is up for review. For small and medium-sized shipowners, large-scale sector integration could prove difficult, because they bring too little volume to the table. Only the largest shipowners with strong balance sheets seem to be battle-ready, although the lifetime costs of owning and operating vessels will need to decline to balance their income potential. This calls for digitalisation, standardisation and economies of scale.

The implied hike in costs from the introduction of green fuels needs to be balanced somehow. Some of this will clearly be passed on to customers, and a global tax on carbon, in one form or another, may also play its part. That may be enough to bridge the gap but perhaps not to produce significantly stronger cash flow yields from operating vessels. Some degree of business model innovation is likely to be needed, to introduce additional drivers of value.

A FRAGMENTED ASSET AND OWNERSHIP LANDSCAPE

The shipping industry is capital-intensive with a combined market value of the fleet above USD 1.4 trillion distributed among more than 100,000 vessels and 24-25,000 owners. External innovators that aim to create value from unit optimisation may conclude that the combination of a fragmented ownership landscape across multiple non-standardised vessels and segments and the limited number of units to be optimised constrains the short-term value potential. The global car fleet, in comparison, consists of 1.4 billion units.

BUT WHAT IF THE LARGEST COST COMPONENT COULD BECOME A VALUE DRIVER?

But what if we could turn the shipping industry's largest cost component – fuel – into a future driver of value in the age of alternative fuels? Today, in most parts of the shipping industry, fuel is a significant cost component that needs to be minimised. What if we can structure a pathway to zero-carbon shipping that allows us to capitalise on the expected price reduction of alternative fuels alongside the scaling of its global production?

A GUARANTEED OFFTAKE ACROSS MULTIPLE INDUSTRIES NEEDS TO BUILD

Global adoption of the alternative fuel is expected to build over time, but initially, a guaranteed offtake, across multiple industries, is needed to kickstart the transition. For the shipping industry to take part in this early phase – beyond pilot or "difficult-to-scale" green corridors – cargo volumes need to be aggregated in large quantities to build a scaled and stable employment profile in a predefined voyage structure that can employ a number of vessels on long-term contracts (10 to 15 years). Today, these cargoes may not be transported by the same shipowner, and they may not even be owned by the same corporate. Combined, however, they may allow a pathway to net zero to emerge.

IT MAY NOT INVOLVE TODAY'S SHIPOWNERS

This can potentially be done by one of the large owners or it can be done across a group of owners (i.e. capacity sharing). Alternatively, it could be done without the involvement of shipowners but solely between cargo owners or freight forwarders. The goal is to create a stable and regular fuel offtake, potentially in collaboration with adjacent industries and sectors that share the same location. Once the cargo and the fuel profile are in place, the next generation of vessels can be ordered at scale.

FOR SHIPOWNERS, THE MEDIUM-TERM OUTLOOK IS ALL ABOUT ENERGY EFFICIENCY

Many shipowners may choose simply to wait, retrofit existing vessels and comply with the upcoming IMO regulation. Adopting such a position could work but not in isolation. Many players are investing heavily in long-term efficiency improvements that they hope will introduce radical cost and emission reductions over time. Traditional players may end up creating less value than their digital competitors for the same freight rate. The message is clear: transformation is not an option; it is a business imperative.

THE FUTURE OF SHIPPING IS BIONIC

Powered by technology and harnessed by pioneers

The shipping industry has traditionally competed on cost. That is not about to change. But the potential for cost savings and new streams of revenue is likely to grow when the industry adopts new technologies to power innovation, grow efficiency and develop new services. Players not operating their own vessels find themselves in a difficult position. The long-term efficiency play is not only about technical upgrades to vessels; it is as much a question of business models that fertilise profitability through innovation and long-term efficiency improvements.

The decarbonisation of the shipping industry is still at an early stage, but many players are making progress. The IMO is not yet Paris-aligned, but it is introducing new technical and operational measures to lower the industry's CO_2 emissions. And more are expected to come.

TONNAGE PROVIDERS ARE STRUGGLING TO HARVEST LONG-TERM EFFICIENCY GAINS

Individual owners' ability to harvest the long-term value potential of energy-saving initiatives, besides retrofitting existing vessels, is largely a question of their business models and their adoption of new technology. The new IMO regulation will have an asymmetric impact across the competitive landscape. Players that do not operate their own vessels and do not pay for the fuel will find it more difficult to capitalise on abatement potential and improve CII ratings. Charter contracts will change, but it seems unlikely that operational restrictions can be imposed without impacting the commercial value of the vessel for the charterer.

THE COMPETITIVE LANDSCAPE IS LIKELY TO CHANGE

The competitive landscape is likely to change when sister vessels' earnings potential becomes subject to individual owners' business models and operational profiles. Owners operating their own vessels may start to invest in long-term efficiency improvements to increase their fleets' CII ratings and thereby long-term earnings potential.

SMALL PLAYERS MAY FIND IT DIFFICULT TO SEIZE THE LONG-TERM ABATEMENT POTENTIAL

Players that continue to navigate their businesses by the rhythm of the asset game may fail to position their operations for long-term efficiency improvements. Small players will find it increasingly difficult to harvest large-scale potential, simply because they lack the scale. Many will prefer to invest in more commoditised standard solutions that will deliver little more than mere table stakes to stay in business. The winners of the long-term efficiency race will be those that operate their fleets at significantly lower costs, and with significantly lower emission footprints but higher earnings.

A STRUCTURAL APPROACH TO FUNDAMENTAL DIGITALISATION IS REQUIRED

The market impact of the new IMO regulation could be a consolidation push for asset ownership towards players with operational control of their fleets and the balance sheet to invest. These players will invest not only in retrofits with long(er) repayment periods, but also in more structural long-term efficiency improvements, including fleet digitalisation and the development of machine-learning models that will help improve both voyage planning (e.g. advanced weather routing systems) and maintenance schedules.

THE MARKET PRESSURE IS BUILDING BUT HAS NOT YET GAINED MOMENTUM

The consolidation trend may not begin to gain momentum until vessels start being penalised for poor CII ratings. Global regulation is tightening, with requirements for vessels to increase their energy efficiency by 2% annually until 2026, but cargo owners could demand earlier adaptation and larger annual improvements.

THE FIRST BARRIER TO ENTRY IS ABOUT TO APPEAR

The ability to offer a premium product at a low price with a market-leading low-emission footprint is likely to present the first real barrier to entry into an industry that has traditionally competed on cost.

A MOUNTAIN TO CLIMB

Decarbonisation of the shipping industry could be the business opportunity of the decade

Addressing climate change requires a wide variety of innovations. The shipping industry will play its part, but the industry may look radically different by the time the global economy has decarbonised. Decarbonisation could spark major changes in the shipping industry's competitive landscape. In the future, revenue and costs may no longer depend solely on the vessel and its commercial and technical management but equally importantly on business models and digital maturity.

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

MULTIPLE STREAMS OF REVENUE

Recall the concept of urban mobility services, which charge a fixed, all-inclusive price per minute in traffic (i.e. car ownership, fuel, parking, maintenance, etc.). If the mobility provider is able to buy the energy at a lower cost than it charges the user, then value is also created from the price arbitrage of the fuel. Imagine, then, the vessel-as-a-service concept being able to deliver value to shareholders not only through operational excellence (i.e. lower costs and lower emissions) and freight rates, but just as importantly from selling greener fuels to cargo owners.

A SERVITISATION MODEL FOR VESSEL OWNERSHIP

In the absence of a spot market for greener fuels, individual owners will find it difficult to compete if they do not have the balance sheet to offer green transportation at an attractive price. The servitisation model allows the green fuel to be offered in combination with the vessel, or maybe more correctly the vessel service can be offered because of the green fuel. We can envisage a business model where the vessel is offered at a discount price to the market, since the fuel is sold at a premium to its purchased price. In that case, the equity investment in the vessel may see a greater return from fuel consumption than freight income.

REDEFINING THE COMPETITIVE LANDSCAPE

For many, this may sound implausible, but imagine if a combination of a global tax on carbon, massive digitalisation, super-standardisation and sector integration were to introduce cost savings and an additional revenue stream that made it possible. The impact on the competitive landscape of the shipping industry could be extraordinary. Ships could become an attractive infrastructure investment supplying low-cost zero-carbon cargo mobility to the market. Owners of the vessels may not identify themselves as shipowners. And many of today's shipowners may begin to operate other people's vessels rather than owning them.

VESSELS WITH A CLEAR ESG PROFILE

Consolidated fleets of super-standardised components offer an attractive business case for circularity, including circular maintenance, as (spare) parts can be remanufactured, reused and recycled multiple times to save costs (and reduce the environmental footprint). This becomes particularly interesting in a servitisation model, where equipment manufacturers extend their business to include the use of their equipment instead of selling it. In this case, the data extraction from operating the standardised fleet of vessels becomes valuable, since it allows the equipment manufacturer to improve performance and optimise the vessel (cradle-to-cradle). The servitisation model allows investments with long repayment periods to be made – maybe even stretching to the next lifetime.

SUMMARY

Resetting the destination or navigating a new route?

The call to decarbonise the global economy across sectors and industries demands radical thinking on how to reinvent many of the basic elements of everyday life. Some of the most transformative effects may come not from actual upgrades to materials or products but from more productive use of them through new business models, digitalisation (think virtual mobility) and better system design. These changes are likely to accelerate the pace of efficiency gains across sectors and industries, beyond anything we have seen before. For many of today's vessel segments, these trends represent a long-term challenge, since trade volumes could begin to shrink across not only segments transporting fossil fuels, but also large Container vessels and large bulk carriers.

KEY TAKEAWAYS:

#1 - THE RACE TO ZERO IS ON

Transitioning to net zero is strategically not only about the fuel but also about the business model. Today, the shipping industry is powered by low-quality fuels, "bottom-of-the-barrel" products that are globally available, cheap and in low demand from other industries. The transition to zero carbon emissions is changing more than the industry's fuel profile. In the future, vessel owners' ability to yield an attractive return on invested capital may require a business model that is designed to harvest maximum efficiency potential, including lowering the cost of capital.

#2 - SHIPOWNERS MAY NOT BE IN THE DRIVER'S SEAT

Change on this scale calls for a global perspective on sector integration. The introduction of greener fuels at scale is some years ahead of us, but it is already beginning to shape the strategic outlook. Vessel ownership is up for review. For small and medium-sized shipowners, large-scale sector integration could prove difficult, because they bring too little volume to the table. Only the largest shipowners with strong balance sheets seem to be battle-ready, although the lifetime costs of owning and operating vessels will need to decline to balance their income potential. This calls for digitalisation, standardisation and economies of scale.

#3 - THE FUTURE OF SHIPPING IS BIONIC

The shipping industry has traditionally competed on cost. That is not about to change. But the potential for cost savings and new streams of revenue is likely to grow when the industry adopts new technologies to power innovation, grow efficiency and develop new services. Players not operating their own vessels find themselves in a difficult position. The long-term efficiency play is not only about technical upgrades to vessels; it is as much a question of business models that fertilise profitability through innovation and long-term efficiency improvements.

#4 - A MOUNTAIN TO CLIMB

Decarbonisation of the shipping industry could be the business opportunity of the decade. Addressing climate change requires a wide variety of innovations. The shipping industry will play its part, but the industry may look radically different by the time the global economy has decarbonised. Decarbonisation could spark major changes in the shipping industry's competitive landscape. In a digital future, revenue and costs may no longer depend solely on the vessel and its commercial and technical management but equally importantly on its business models and digital maturity.

SHIPPING MARKETS AT A GLANCE

SHIPPING MARKETS AT A GLANCE

High earnings and infrastructural bottlenecks

The shipping industry has earned a record amount of money in 2022. The ClarkSea Index has not surpassed its peak from December 2007 of USD 48,500 per day but has managed to maintain a ten-month average of almost USD 38,000 per day, which is USD 5,000 per day higher than its 2007 average. Secondhand prices are high, but current prices are approximately 20-25% below the level last seen when earnings were this high. Market conditions are generally expected to deteriorate in 2023, since a weaker macroeconomic outlook combined with easing infrastructural bottlenecks is expected to increase the fleets' cargo-carrying capacity in tandem with reduced demand expectations. A low orderbook with a short runway supports the medium-term outlook.

CLARKSEA INDEX AND VESSEL PRICES

Shipping markets have continued to perform strongly in 2022, underpinned by longer travel distances, widespread supply chain inefficiencies and modest fleet growth. The ClarkSea Index is within the highest 5% since 2000 and peaked at USD 43,500 per day in May, only USD 5,000 per day below the all-time high from December 2007. Freight rates have lost some momentum and the index ended September 2022 at USD 35,500 per day. The high earnings continue to translate into high investments in new and existing vessels.

Tanker, Gas and Container earnings are within the highest 5% observed since 2000, while Dry Bulk earnings are within the highest 25%.

MANAGEABLE DOWNSIDE RISK

Secondhand prices are high, but current prices are approximately 20-25% below the level last seen when earnings were this high. This suggests that investors have more realistic expectations about future earnings than was the case in 2008. Accordingly, current prices are facing less downside risk.

HIGH SECONDHAND PRICES

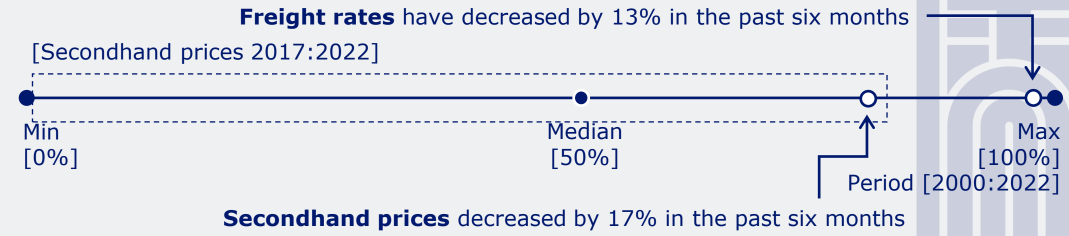
Still, the average secondhand price is among the highest 15% seen since 2000.

NEWBUILDING PRICES ARE UP BY 29%

Newbuilding prices are high and currently hovering around the highest 10-15% observed between 2000 and 2022 across the major vessel segments. The average newbuilding price has increased by 29% since December 2020 but remains 15% below the peak of 2008. Component and energy costs have risen significantly. Japanese steel prices are up by 70% since December 2020.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – NOVEMBER 2022



Distance-adjusted seaborne demand is expected to grow by 1.2% in 2022. Volumes have increased by 0.9%, while slightly longer distances have added the equivalent of 0.3 percentage points. The world fleet is expanding by 3%, while speeds have remained fairly constant. Infrastructural bottlenecks have reduced fleet productivity, especially for Container and Dry Bulk vessels. Freight rates and secondhand prices have been supported by an improvement in fleet utilisation.

Deliveries: The annual inflow of new vessels remains stable at around 1,200 vessels. Few of the larger Dry Bulk vessels have been delivered, which has reduced the dwt level.

Scrapping cooled off during the first nine months of the year. Only 10 million dwt was scrapped during the period, compared to 18 million dwt in 2021 (-45%).

Contracting eased off during the first nine months of the year. 58 million dwt was ordered during the period, compared to 118 million dwt in 2021 (-51%).

S&P activity increased by 26% during the first nine months of 2022. A total of USD 41 billion was transacted compared to USD 33 billion during the same period in 2021.

The **orderbook** represents 10% of the fleet, of which 75% is scheduled for delivery before year-end 2024.

Seaborne trade volumes have remained stable during 2022 and may decline in 2023. Longer travel distances and port congestion have kept the fleet utilised in 2022.

HIGH EARNINGS AND EASING PORT CONGESTION

Surplus vessel capacity is building but is not yet visible

The fundamental balance between supply and demand has deteriorated during 2022, as the world fleet has expanded by 3% while distance-adjusted seaborne trade volumes have only grown by 1.2%.

PORT CONGESTION EASED DURING THE THIRD QUARTER

Port congestion and more general infrastructural bottlenecks have been the key contributors to the tightening of shipping markets in 2022. Throughout the first half of the year, an average of 32.1% of the "deep sea" fleet was at port. This was an increase of 0.7% versus the end of 2021. Congestion eased significantly during the third quarter, when 1.8% of the fleet was added to active service.

THE CLARKSEA INDEX DECLINED DURING THE THIRD QUARTER

The ClarkSea Index increased by USD 5,400 per day to USD 41,400 per day during the first half of 2022 but lost USD 8,700 per day during the third quarter as port congestion eased. The ClarkSea Index ended October at USD 32,700 per day.

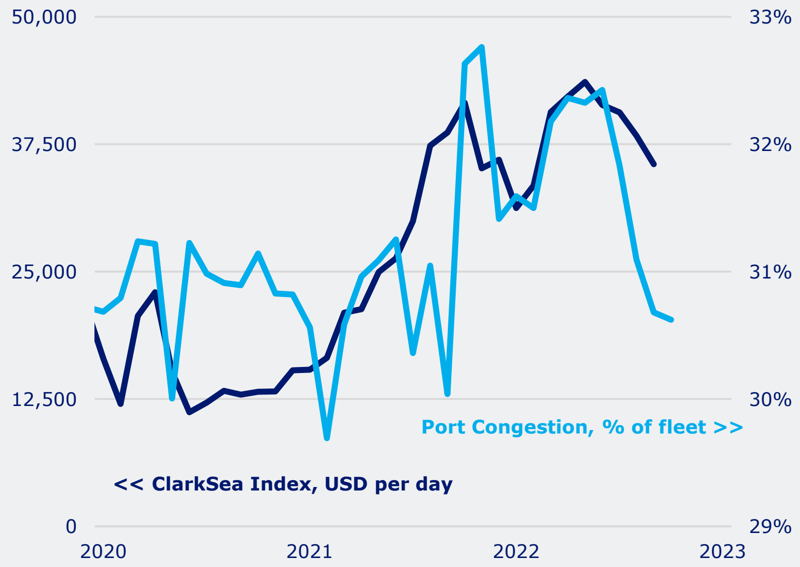
HIGHER EARNINGS IN SOME SEGMENTS

Some vessel segments have performed significantly better than others during 2022. Demand for Product Tankers, LPG Carriers, Crude Tankers and LNG Carriers has increased strongly during the year, while demand for Dry Bulk, Chemicals and Container vessels has lagged behind.

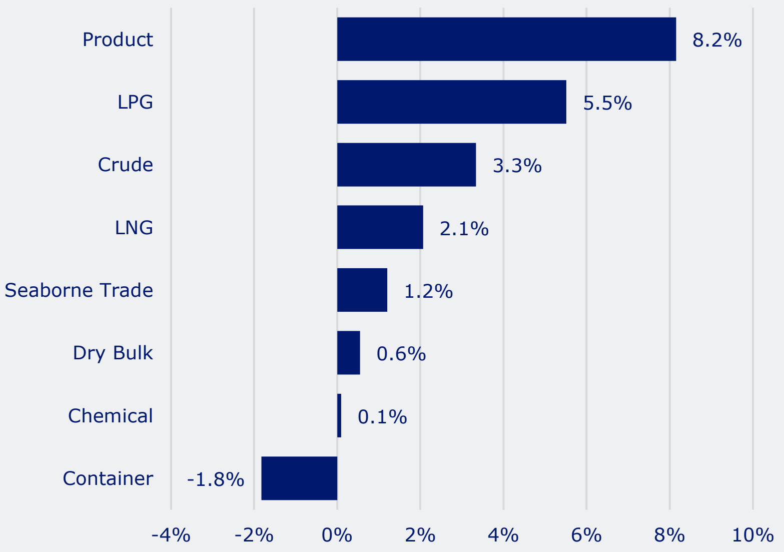
FEW SEGMENTS HAVE MATERIAL ORDERBOOKS BEYOND 2024

The combined contracting activity of 2021 and 2022, has halted the decline of the orderbook. The orderbook currently stands at 10% of the fleet, and most of the vessels on order are scheduled to be delivered during 2023 and 2024. Currently, only Container and LNG have a large inflow of vessels scheduled for 2025.

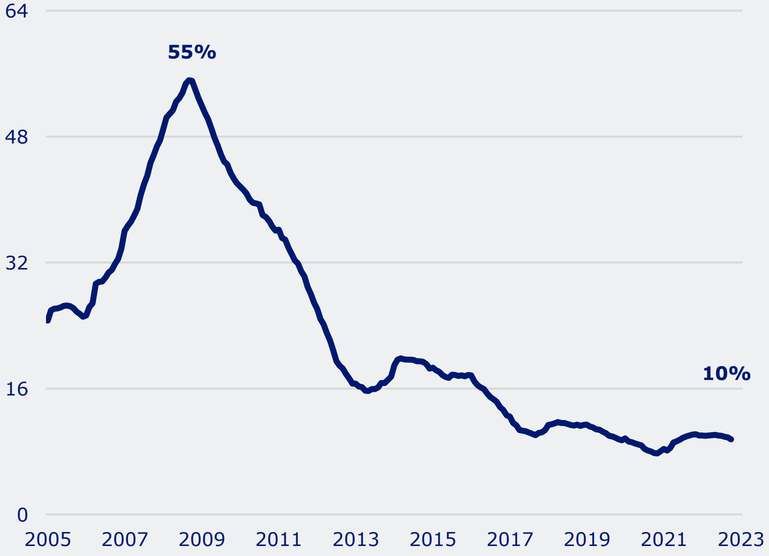
CLARKSEA INDEX AND PORT CONGESTION



GLOBAL SEABORNE TRADE GROWTH, 2022 (TONNE-MILES)



ORDERBOOK-TO-FLEET RATIO (% OF FLEET)



Source: Clarksons, Danish Ship Finance

WHAT TO EXPECT FOR 2023?

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

The global macroeconomic outlook is deteriorating. The IMF predicts that global growth will slow from 6% in 2021 to 3.2% in 2022 and 2.7% in 2023. The forecast for 2023 is the weakest since the 2.5% growth rate seen during the global slowdown of 2001 — apart from during the global financial crisis and the acute phase of the Covid-19 pandemic.

INCREASED RISK OF DEFAULTS

The dramatic increase in energy prices is putting pressure on households, businesses and industries at large. Many businesses are being forced to pass higher costs on to customers or permanently close down. The risk of corporate defaults is increasing. Consumers' purchasing power is rapidly declining, as rising food and energy prices combined with increasing debt servicing costs are reducing their disposable income.

MANY PEOPLE WILL FEEL A RECESSION DURING 2023

The IMF expects that more than a third of the global economy will contract this year or next. It argues that the worst is yet to come, and for many people 2023 will feel like a recession.

LIMITED SUPPORT FROM NEW REGULATION

The upcoming environmental regulations may reduce supply. The EEXI regulation is likely to require that some vessels be temporarily taken out of service for engine power limitation, and pending CII ratings may persuade some owners to reduce speeds on selected vessels to improve their attained CII ratings as per year-end 2023.

SUPPLY IS RUNNING AHEAD OF DEMAND

The fleet is set to expand by 3.5% in 2023 before scrapping. Infrastructural bottlenecks are expected to continue to ease by as much as 1% of the fleet. Distance-adjusted seaborne trade volumes are currently estimated to increase by 3%. These figures indicate that supply is likely to run ahead of demand in some segments and that scrapping of surplus vessel capacity is needed.

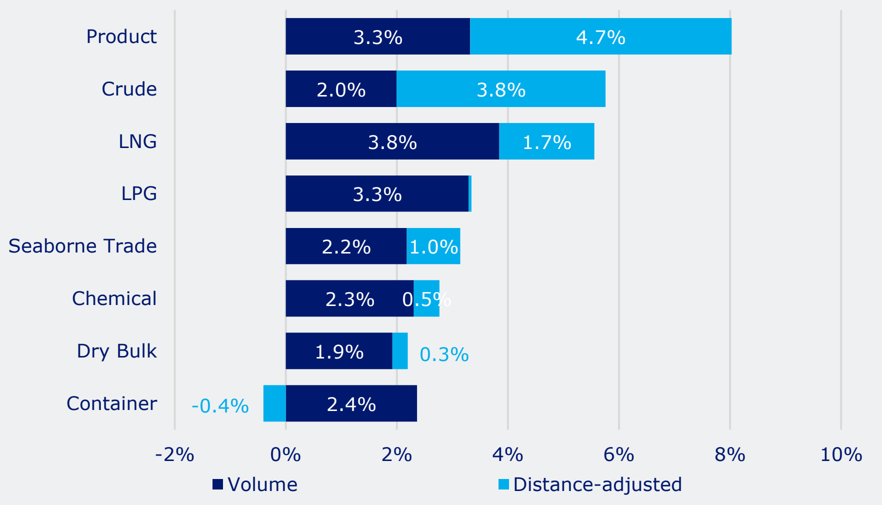
BUT FEW SEGMENTS WILL STRUGGLE IN 2023

The 2023 outlook for the main shipping segments varies. Crude and Product Tankers seem to be on track for healthy markets as long as global oil supply can meet demand. The LNG segment seems positioned for another year with strong earnings. Container and LPG Carriers are scheduled to take delivery of a massive number of new large vessels, which is likely to pressure earnings and secondhand prices. Dry Bulk markets remain generally strong, but a worsening of China's property sector crisis could change the outlook.

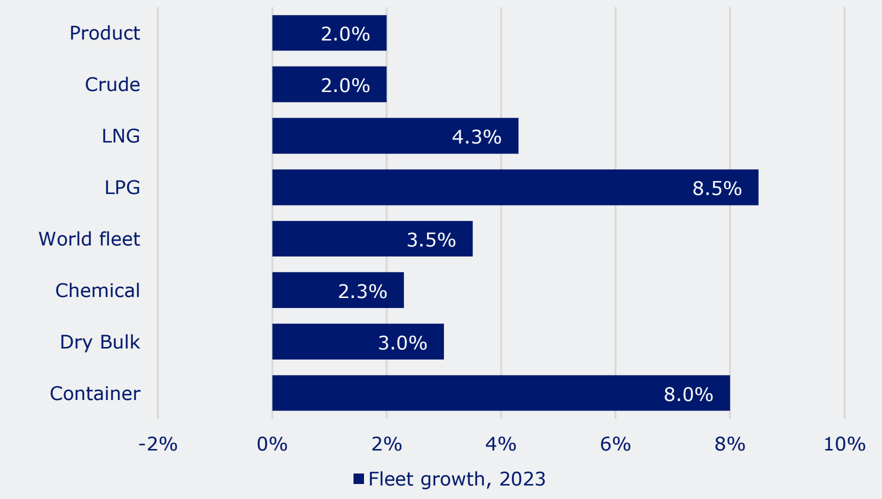
CONSIDERABLE RISK TO THE OUTLOOK

There is considerable risk to the outlook. The global economy is headed for stormy waters, and financial turmoil may well erupt. The shipping industry has navigated volatile markets before. In past cycles, the supply side has expanded strongly alongside demand contractions. This time, the supply side looks manageable, outside the Container segment.

GLOBAL SEABORNE TRADE GROWTH, 2023 (TONNE-MILES)



GROSS FLEET GROWTH, 2023 (% OF FLEET)



Source: Clarksons, Danish Ship Finance

NAVIGATING THE FUTURE FUEL LANDSCAPE

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

Vessels not fitted with scrubbers (approximately 75% of the world fleet in GT and 80% of the orderbook) are facing higher bunker prices, since the price of very low sulphur fuel oil (VLSFO) is trading at USD 700 per tonne.

Owners that have invested in scrubbers have on average saved USD 280 per tonne of bunker fuel during 2022. The price of high sulphur fuel oil (HSO) is currently close to USD 420 per tonne.

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

A growing number of players are investing in upgrades to existing vessels, and many are also investing in new vessels that are somehow prepared for an unclear but greener future. 5% of the fleet is in some way “alternative fuel-capable”.

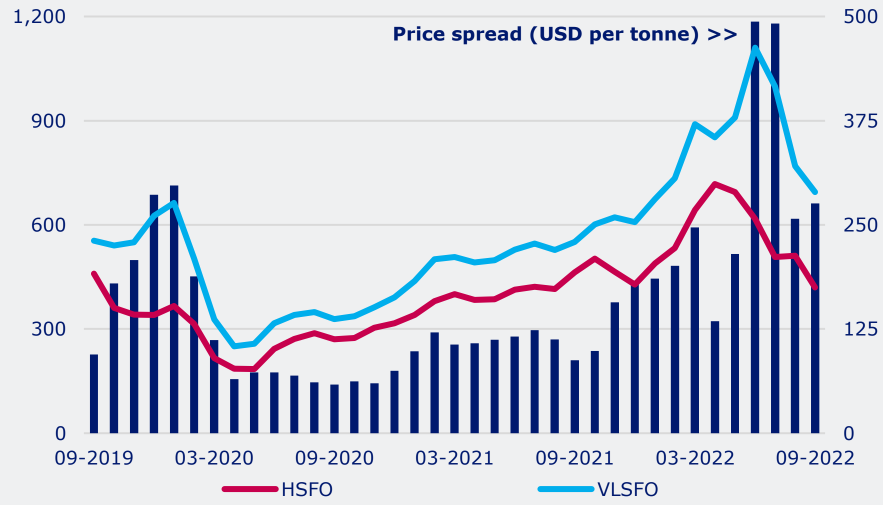
Increased “fuel optionality” is becoming popular when ordering new vessels. More than 40% of the orderbook is for vessels capable of running on alternative fuels. LNG is currently the preferred choice, but LPG, methanol and “ammonia ready” have also gained traction. Remarkably, 56% of VLCCs on order are dual-fuelled with LNG as the alternative fuel. Two-thirds of the LPG orderbook is dual-fuelled with LPG as the alternative fuel, while only 6% of the Dry Bulk orders are dual-fuelled. 22% of the Container orderbook is dual-fuelled with LNG as the preferred choice over methanol.

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

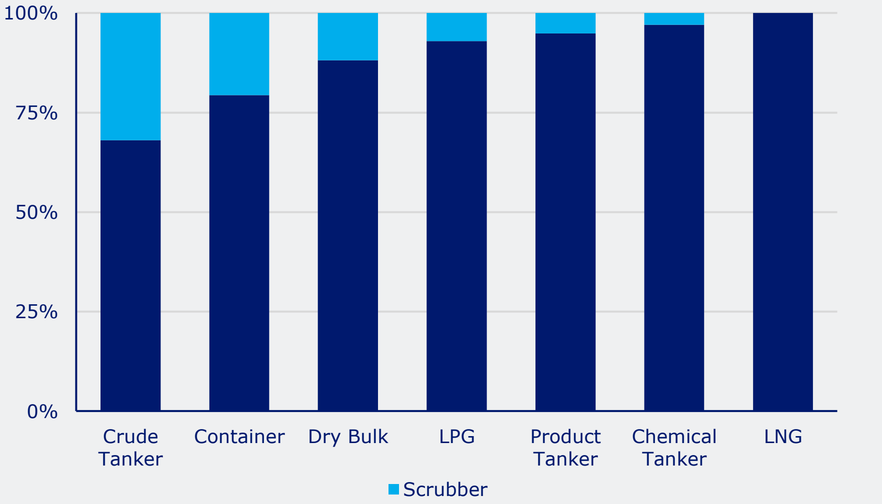
In 2020, LNG was approximately 20% cheaper than VLSFO, but in today’s market, with energy prices soaring, few seem to be taking advantage of their LNG dual-fuel option. In 2022, LNG fuel prices have on average been 2.5 times higher than for VLSFO (on an energy-equivalent basis). By September 2022, LNG cost more than four times as much as VLSFO.

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

HIGH BUNKER PRICES FOR NON-SCRUBBER-FITTED VESSELS



SHARE OF SCRUBBER-FITTED VESSELS (DWT)



Source: Clarksons, Danish Ship Finance

SHIPBUILDING

SHIPBUILDING

Overcapacity is still an issue despite long delivery times at some yards

The shipbuilding industry is currently perceived as having constrained capacity. The reality is more diverse. Some of the largest yards building Container and LNG vessels are fully booked until 2024 and some into 2025. But many more yards are building vessels without attracting any new orders. Orders for new vessels are generally concentrated to a small group of yards within each segment. More advanced vessels are being ordered at even fewer yards, while orders for less advanced vessels are being split between a larger group of yards. Still, a total of 189 yards out of the stock of 284, representing 30% of global yard capacity, are rapidly running out of orders. Some are due to deliver their last vessels as early as this year, while others will empty their orderbooks in 2023.

NEWBUILDING PRICES AND CONTRACTING

Newbuilding prices are high and currently hovering at levels around the highest 10-15% observed between 2000 and 2022 across the major vessel segments. The average newbuilding price has increased by 29% since December 2020 but remains 15% below the peak of 2008. Component and energy costs have risen significantly. Steel prices are up by 70% in the period.

Newbuilding prices are settled between yards that receive new orders. It is difficult to raise prices if more yards are competing for the same order. A total of 284 yards have delivered new vessels during 2022, but only 95 have received new orders. There is significant variation between segments.

In the Container segment, more than 850 vessels have been ordered since the beginning of 2021, but only 49 yards are engaged in building them. The ten largest yards have secured 70% of the tonnage ordered in 2022.

The LNG orderbook has grown beyond 40% of the fleet, but orders are only split between 12 yards. In 2022, contracting activity has been divided between only seven yards, of which the four largest have secured 80% of the ordered tonnage.

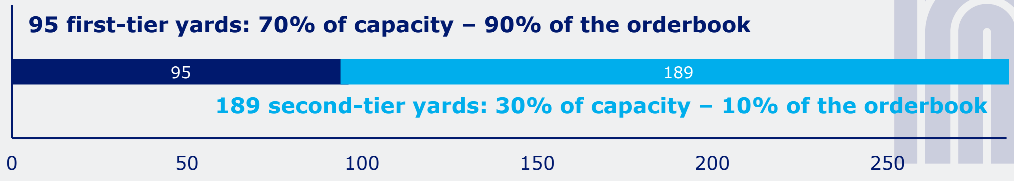
There are more yards with track records of building Dry Bulk vessels. The current orderbook is distributed among 83 yards.

Fewer than 40 yards currently have orderbooks for either Crude, Product or Chemical Tankers.

DS:FUNDAMENTALS

MARKET POSITION - November 2022

***First-tier yards:** Yards with order cover beyond one year, that have received orders in the past 18 months, that have at least two vessels in their orderbooks, and whose orderbooks are not set to run out in the next 24 months.*



The strong contracting for Container and LNG Carriers has increased the global orderbook and will keep some of the largest shipyards fully occupied until at least 2024. However, the lopsided nature of the ordering has created a situation where many of the yards that are not building Container or LNG Carriers are operating at low utilisation rates. Many are delivering vessels without securing new orders. Some are due to deliver their last vessels on order this year or during 2023.

ORDERBOOK: Contracting outperformed deliveries by a margin of 9 million cgt during the first nine months of 2022. The orderbook has continued to grow. New orders have primarily been placed for Container and LNG Carriers, which has favoured yards that build vessels in these segments. The 95 first-tier yards received new orders during 2022, while 75% of the contracted tonnage has been distributed between 20 yards.

YARD CAPACITY remains stable at 52 million cgt, split between 284 yards. China's yard capacity amounts to around 20 million cgt among 120 yards, while only eleven South Korean yards maintain capacity close to 15 million cgt. Japan has almost 10 million cgt in capacity distributed among 48 yards, while Europe and the rest of the world represent close to 100 yards with a combined capacity of almost 7 million cgt.

YARD UTILISATION: Yard capacity is poorly utilised on average, but there is considerable variation between yards. A group of 95 first-tier yards, are utilising 70% of their capacity in 2022. The group of second-tier yards are only utilising 40% of their capacity in 2022 and will use even less in 2023.

MARKET DYNAMICS IN THE LAST SIX MONTHS

Container and LNG Carriers dominate the outlook

The surge in contracting activity for Container and LNG Carriers is creating headlines about long delivery times, high prices and inadequate yard capacity. That is the case, but only for a small group of yards.

CONTAINER AND LNG ORDERS DOMINATE THE ORDERBOOK

The shipbuilding industry has suffered more than a decade of overcapacity. The global orderbook peaked in 2011 and bottomed out in 2021, only to have expanded by 13% in 2022. The increase in 2022 reflects a massive push for fleet renewal among two vessel segments: Container and LNG. These segments account for 24% of the global fleet but an astonishing 56% of the global orderbook (cgt).

CONTRACTING OUTSHINES DELIVERIES

Global contracting has outperformed global deliveries by a margin of 13% in the last five years, which suggests that the yard industry should be recovering. That is true for some parts of the industry but not all.

SMALLER YARDS ARE STRUGGLING TO ATTRACT NEW ORDERS

The strong ordering across two vessel segments has resulted in a lopsided recovery among shipyards. Global yard capacity is currently distributed among 284 yards; 95 yards have received new orders in 2022, although all yards have delivered at least one vessel. Many yards are emptying their orderbooks without receiving any new orders, while a smaller group of yards have seen massive increases in their order backlogs.

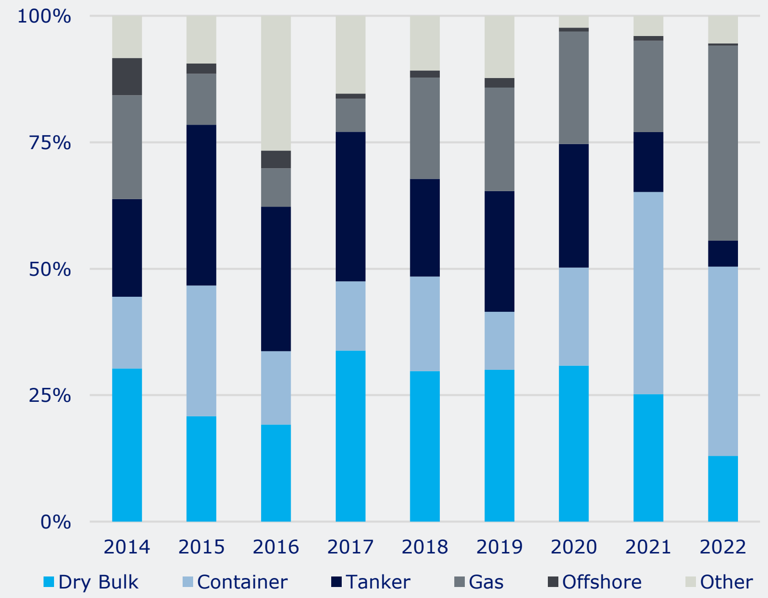
STRONG ORDER COVER AT FIRST-TIER YARDS

A group of 95 first-tier yards are outperforming their peers. These yards represent 70% of global yard capacity but 90% of the global orderbook. They are continuously restocking their delivered capacity and currently have an average order cover of 29 months, whereas the remaining 189 second-tier yards on average are set to run out of orders in less than half a year.

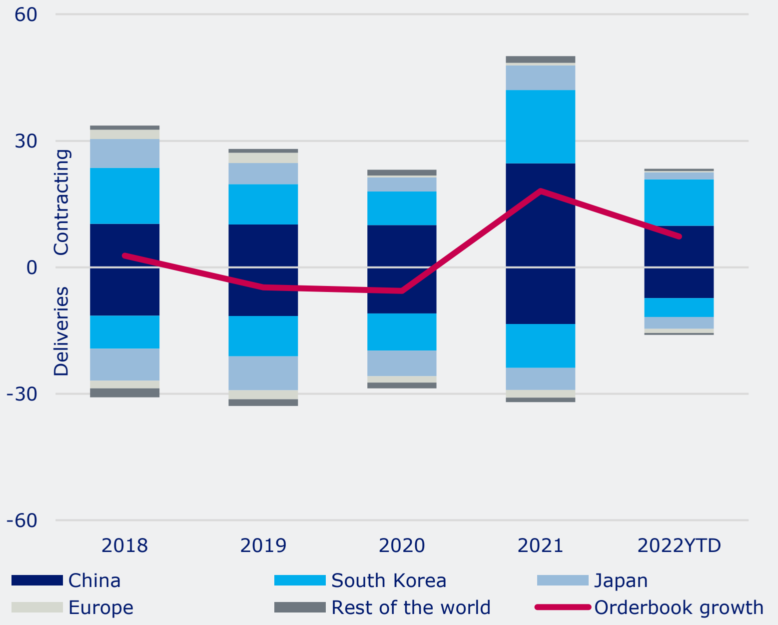
SOARING ALTERNATIVE FUEL ORDERING

Within the group of first-tier yards, we find a core of 15 yards, representing 43% of yard capacity, that have attracted 66% of orders in 2022. Of all orders with alternative fuel options, 77% have been placed at these 15 yards.

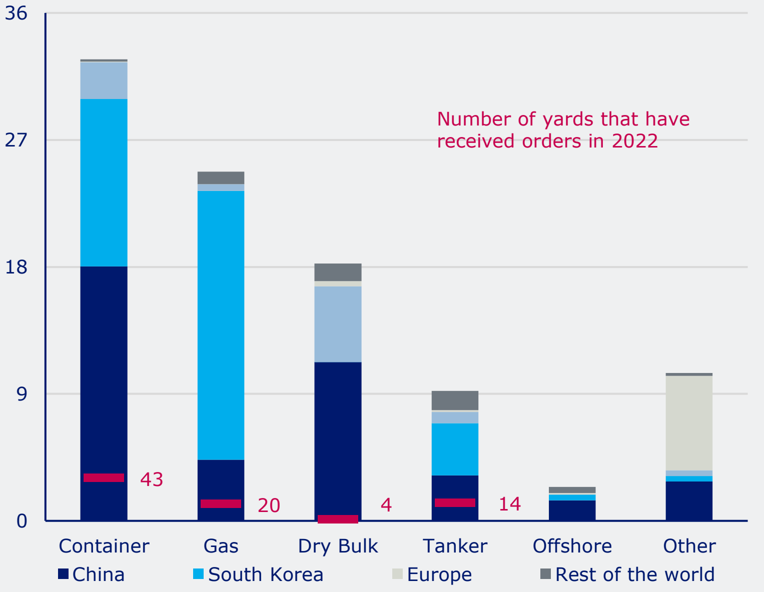
CONTRACTING BY SEGMENT (MILLION CGT)



ORDERBOOK (MILLION CGT)



ORDERBOOK BY SEGMENT AND REGION (MILLION CGT)



Source: Clarksons, Danish Ship Finance

YARD CAPACITY AND YARD UTILISATION

First-tier yards attract the lion's share of new orders

The consolidation process continues to shape the competitive landscape. Yard capacity has been fairly stable during the year, but many yards are running dangerously low on orders. Average yard utilisation outside the group of first-tier yards is approaching 40% in 2022. This means that many yards that do not build Container or LNG Carriers only have employment for less than half a year.

UTILISATION NOT AFFECTED BY REDUCED GLOBAL YARD CAPACITY

Global yard capacity is running at close to 52 million cgt distributed. Minor changes have been recorded during 2022, with an increasing gap between first-tier and second-tier yards. The best-performing first-tier yards have boosted their yard utilisation from 65% in 2021 to 70% in 2022. The group of second-tier yards are underperforming, average yard utilisation has dropped from 52% in 2021 to 42% in 2022.

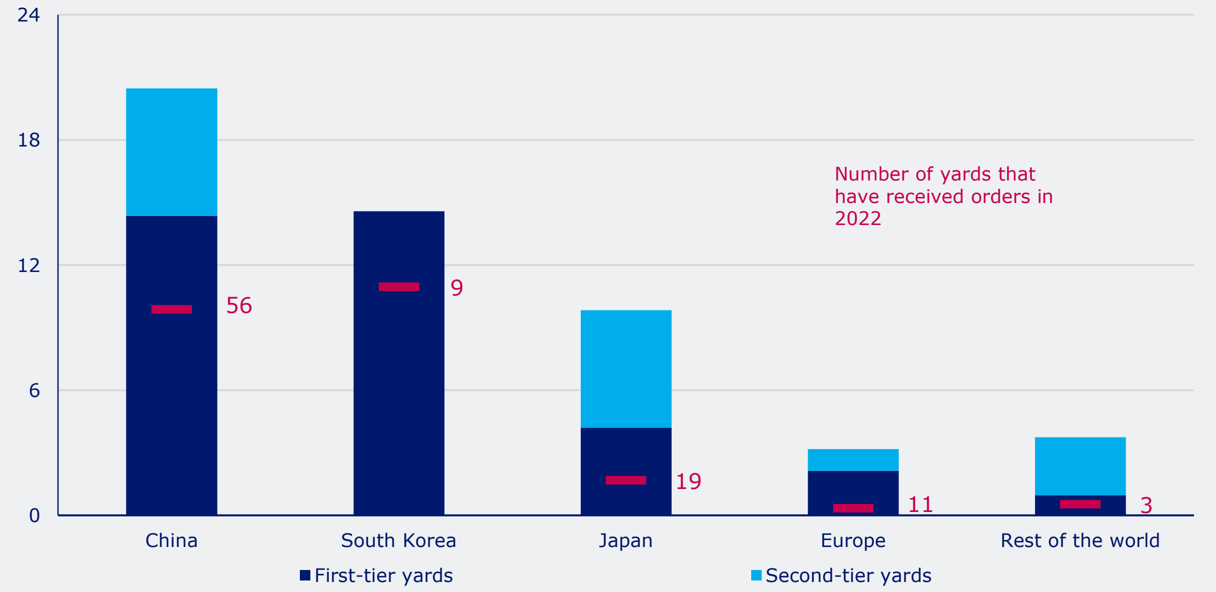
CHINESE AND SOUTH KOREAN YARDS ARE DRIVING MARKET CONSOLIDATION

There is a clear trend of the 48 Chinese and ten South Korean first-tier yards outperforming most other yards. These 58 yards represent 56% of global yard capacity and 75% of the orderbook, sustaining significantly higher capacity utilisation than the rest. The Chinese first-tier yards utilised 74% of their yard capacity in 2021 and are set to utilise 81% in 2022. Utilisation at the South Korean first-tier yards is expected to drop from 70% in 2021 to 57% in 2022, reflecting low annual deliveries. The low deliveries in 2022 do not reflect periods of unemployment but rather an orderbook dominated by LNG and Container vessels which are being built in 2022 but not delivered until 2023.

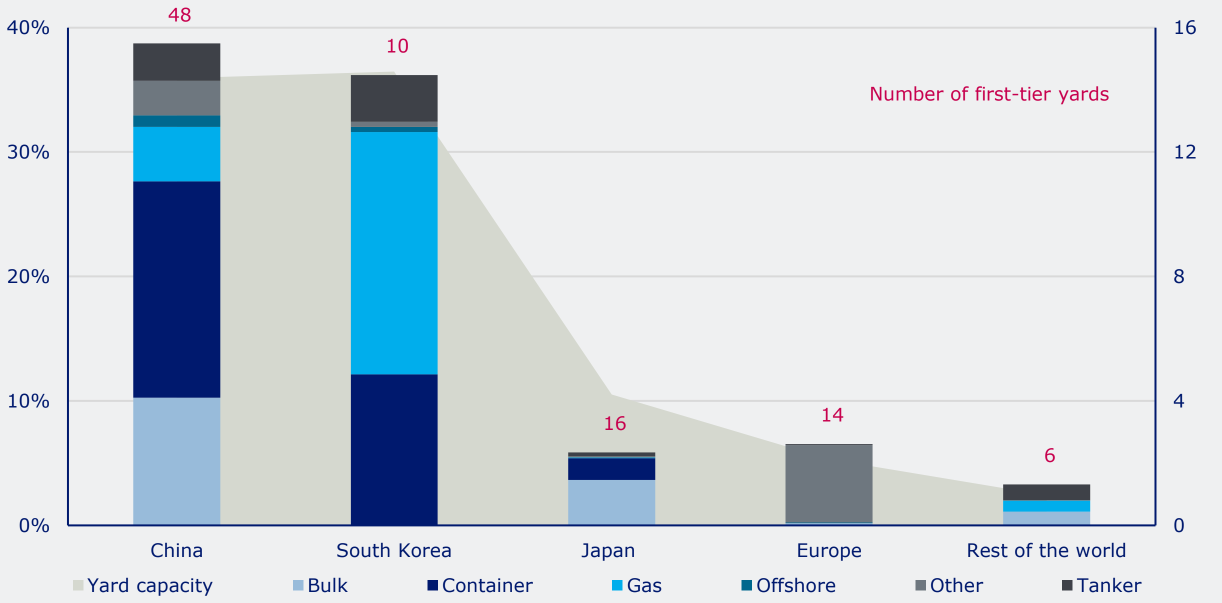
SLUGGISH ACTIVITY AT JAPANESE YARDS

The 16 Japanese first-tier shipyards, representing 8% of global yard capacity but 43% of Japanese capacity, have seen their average yard utilisation increase from 55% in 2021 to 64% in 2022. Japanese yards have only secured 7% of contracting in 2022 while holding 19% of active global yard capacity.

ACTIVE YARD CAPACITY (MILLION CGT)



SHARE OF GLOBAL ORDERBOOK (%) AND YARD CAPACITY (MILLION CGT)



Source: Clarksons, Danish Ship Finance

SHIPBUILDING MARKET OUTLOOK

First-tier yard utilisation is strengthening, while second-tier yards are running out of orders

The shipbuilding industry is going through a phase where a relatively small group of yards are building the majority of vessels on order. This trend clearly reflects high segment concentration in the orderbook combined with more advanced vessels being ordered. Not all yards are equally equipped to introduce energy-saving technologies and dual-fuelled engines. Many yards that are not building large Container vessels or LNG Carriers are struggling to attract new orders and are thus seeing their orderbooks empty quickly.

INCREASED YARD UTILISATION

Global yard utilisation is projected to increase from 61% in 2022 to 64% in 2023, only to decline to 60% in 2024. The drop in 2024 will be caused by a very low orderbook at second-tier yards that year.

FIRST-TIER YARDS ARE SEEING HIGH UTILISATION

The utilisation rate at first-tier yards is expected to rise from 70% in 2022 to 83% in 2023 and 78% in 2024, driven by increased deliveries of Container and LNG Carriers. First-tier yards in China and South Korea are the main contractors.

MANY YARDS ARE RUNNING OUT OF ORDERS

The group of 189 second-tier yards, representing 30% of global yard capacity, are highly exposed to overcapacity. But in addition to the second-tier yards, 46 of the 95 first-tier yards are also scheduled to deliver their last orders in either 2023 (12 yards) or 2024 (34).

SECOND-TIER YARDS ARE STRUGGLING

An alarming 74 second-tier yards, representing 6% of global yard capacity, will deliver their last orders during 2022. In 2023, another 69 second-tier yards (11% of yard capacity) are scheduled to deliver their last vessels on order.

GLOBAL YARD CAPACITY COULD SHRINK BY 18%

Global yard capacity could shrink by 9 million cgt (18%) by year-end 2024 if yards that are running out of orders are closed the year after their last delivery.

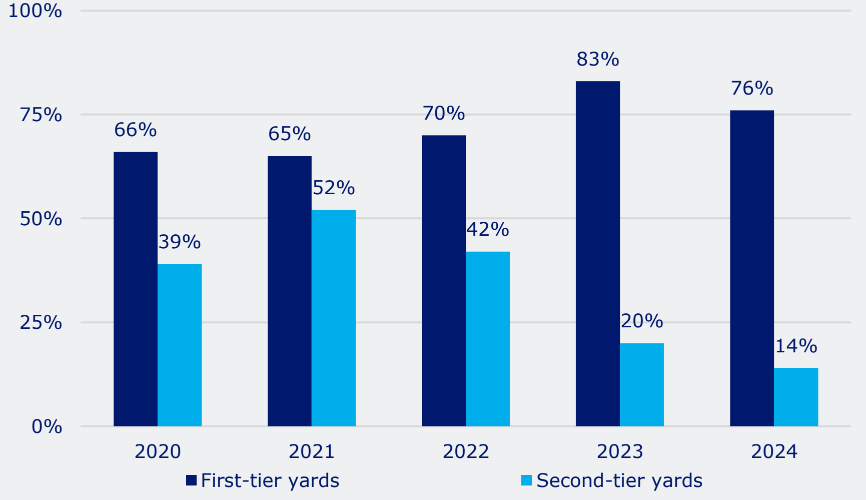
MANY FIRST-TIER YARDS ARE ALSO STRUGGLING

By year-end 2024, the number of first-tier yards could have declined from 95 yards in 2022 to 48 while still representing a combined yard capacity of 30 million cgt. New orders will be placed, but the trend is clear.

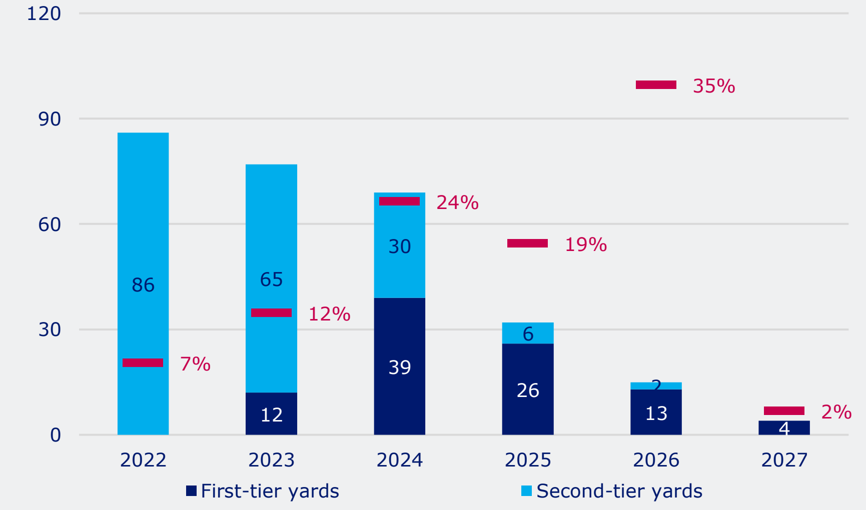
LOW JAPANESE YARD UTILISATION

Japanese yards are struggling to attract new orders. Japanese yards account for 19% of global yard capacity but only 10% of the orderbook. Japanese first-tier yards are expected to experience an uptick in utilisation from 59% in 2022 to 74% in 2023, only to drop to 24% in 2024. Second-tier yards are scheduled to utilise only 24% of capacity in both 2023 and 2024.

YARD UTILISATION (DELIVERY/CAPACITY)



YARDS OUT OF ORDERS (NO.) AND % OF THE FLEET (MILLION CGT)



Source: Clarksons, Danish Ship Finance

CONTAINER

CONTAINER

The market is entering a downward spiral earlier than expected

Unwinding port congestion and negative tonne-mile demand will shape the Container industry towards the end of 2022 before a massive inflow of new tonnage hits the market in 2023 and 2024. Underlying demand is waning, since food and energy inflation is directing consumer spending away from containerised demand and interest rate hikes are increasing debt servicing costs globally. There is no doubt that surplus vessel capacity will be a major topic as soon as 2023, but it remains to be seen how tightly liner operators will be able to manage capacity at the expense of tonnage providers. Vessels that are too young to be scrapped are likely to be placed in lay-up. Secondhand prices are expected to return to pre-Covid levels and older, less efficient vessels will be scrapped.

FREIGHT RATES AND SECONDHAND PRICES

The box rate increased by 4x between June 2020 and June 2022, while the average timecharter rate surged by 10x. The average secondhand price index increased by more than 3x. The average newbuilding price was up 33% in the period. The average secondhand price lost 12% on average between June 2022 and September 2022, while charter rates and box rates dropped by 38% and 20%, respectively.

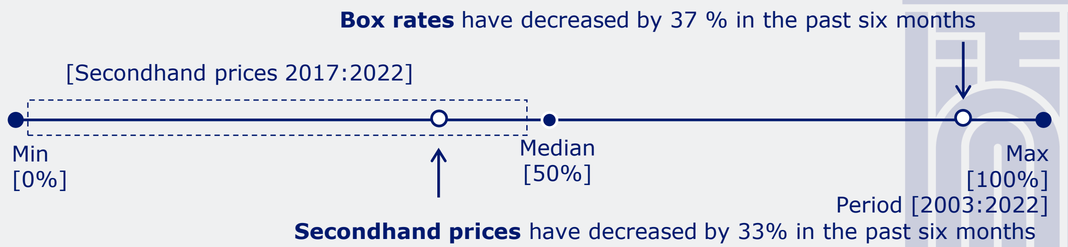
From June 2020 to June 2022, the secondhand price for a ten-year-old 3,500 teu vessel increased more or less in line with its earnings potential in the charter market. Fixture periods lengthened from an average of five months to 25 months and the value of the timecharter rate increased by USD 51 million. The secondhand price rose by USD 54.5 million, from USD 7.5 million in June 2020 to USD 62 million in June 2022.

The secondhand price of larger vessels increased more than their earnings potential in the charter market. A ten-year-old 8,800 teu vessel saw charter income increase by USD 72 million in the period, while the secondhand price was up by USD 109.5 million to USD 140 million.

From June to September 2022, the average timecharter rate declined by 38% and the average charter period shortened by ten months to 15 months. The average secondhand price for a ten-year-old vessel dropped by a multiplier of between 1.5x and 3x versus the drop in their earnings potential in the charter market.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – NOVEMBER 2022



The Container market has experienced a period of exorbitant freight rates and secondhand prices. The bonanza has been driven by Covid related infrastructural bottlenecks. Distance-adjusted seaborne demand has increased by 5% since 2020, while the fleet has expanded by approximately 9%. Port congestion absorbed surplus vessel capacity to a degree where the market came close to its capacity limit. Today, easing infrastructural bottlenecks and waning demand are rapidly exposing the market to a significant surplus in underlying vessel capacity.

Deliveries: A total of 0.9 million teu is scheduled to be delivered in 2022, before exploding to more than 2.4 million teu in 2023 and 2.8 million teu in 2024.

Scrapping: No vessels have been scrapped during 2022 due to the high freight rate environment.

Contracting: A total of 2.1 million teu was ordered during the first nine months of 2022, of which 45% was ordered during the first quarter of the year.

Orderbook: The orderbook continues to expand, as more vessels are being ordered than delivered. A total of 7 million teu (27% of the fleet) is currently on order, distributed between more than 900 vessels. The vast majority is scheduled to be delivered in 2023 and 2024.

Demand: The demand outlook is weakening quickly, since higher energy and food prices are reducing consumers' disposable income. Fears of low or negative growth in key economies are only worsening the outlook.

MARKET DYNAMICS IN THE LAST SIX MONTHS

Infrastructural bottlenecks are loosening up in tandem with negative tonne-mile demand

Infrastructural bottlenecks have reduced the cargo-carrying capacity of the Container fleet for the past three years and have fuelled an extraordinary surge in freight rates. Port congestion reduced supply by an additional 0.8 million teu in 2020. In 2021, additional capacity of 0.5 million teu was absorbed, while the inefficiency removed 0.5 million teu, on average, during the first ten months of 2022.

HIGH INVESTMENT ACTIVITY

Box and timecharter rates have increased strongly in tandem with the reduced cargo-carrying capacity of the fleet. The extraordinarily high earnings have sparked a substantial fleet renewal process. More than 6 million teu or a capacity corresponding to almost 25% of the fleet was contracted during 2021 and the first nine months of 2022. A total of USD 67 billion was invested in new ships, while another USD 22 billion changed hands in the sale and purchase market.

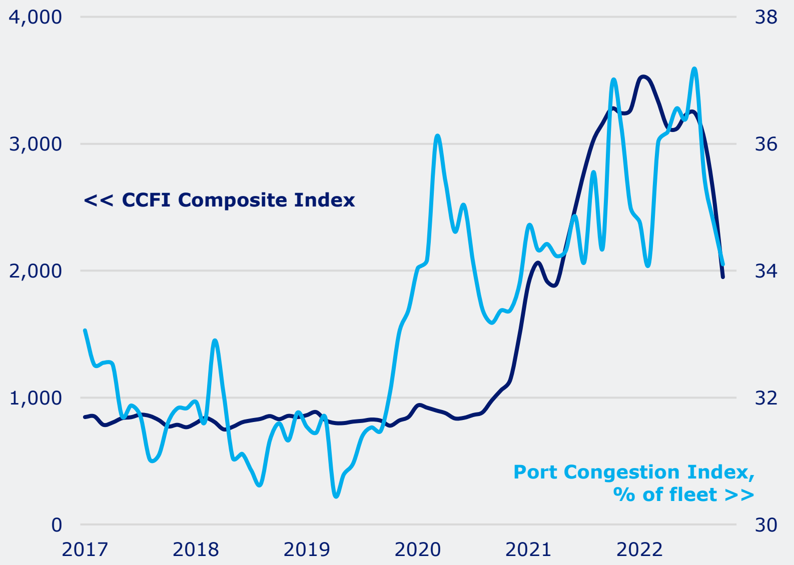
REDUCED MARKET FUNDAMENTALS

Signs of surplus vessel capacity are emerging even before the inflow of vessels accelerates in 2023 and 2024. Deteriorating macroeconomic conditions have changed market sentiment. Container volumes are hardly expected to grow in 2022, but shorter distances are pushing tonne-mile demand into negative territory. Distance-adjusted demand is expected to decline by 1.5-2% in 2022, while the fleet continues to expand.

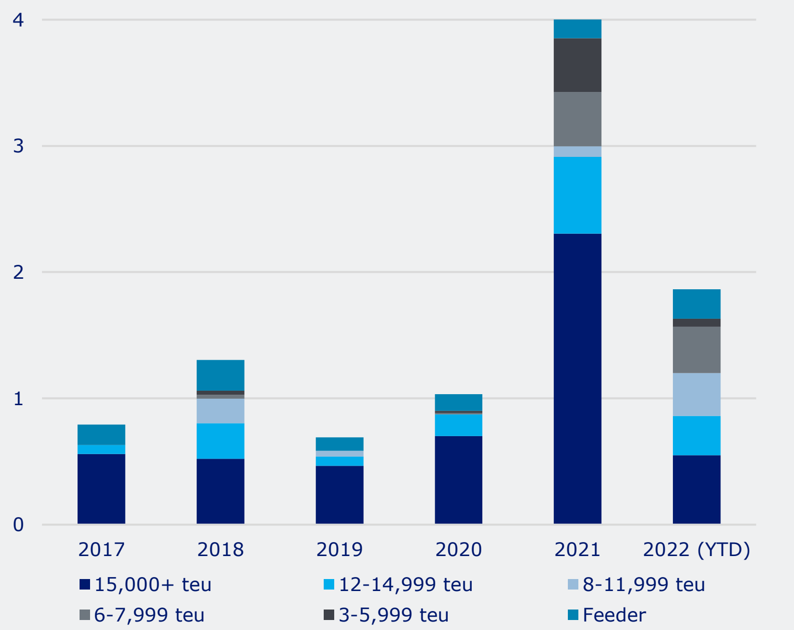
IMPACT OF SURPLUS VESSEL CAPACITY MAY NOT BE EVEN

The market is heading for significant overcapacity in 2023 and 2024. The impact on box rates will depend on how strictly liner operators can manage capacity. Tonnage providers own, on average, 51% of the fleet, but they own more than 55% of vessels between 6,000 teu and 16,000 teu. They own 66% of vessels on order in the size range 6-7,999 teu. It remains to be seen if surplus vessel capacity will be limited to tonnage providers primarily or whether a fight for market share returns among the liner operators.

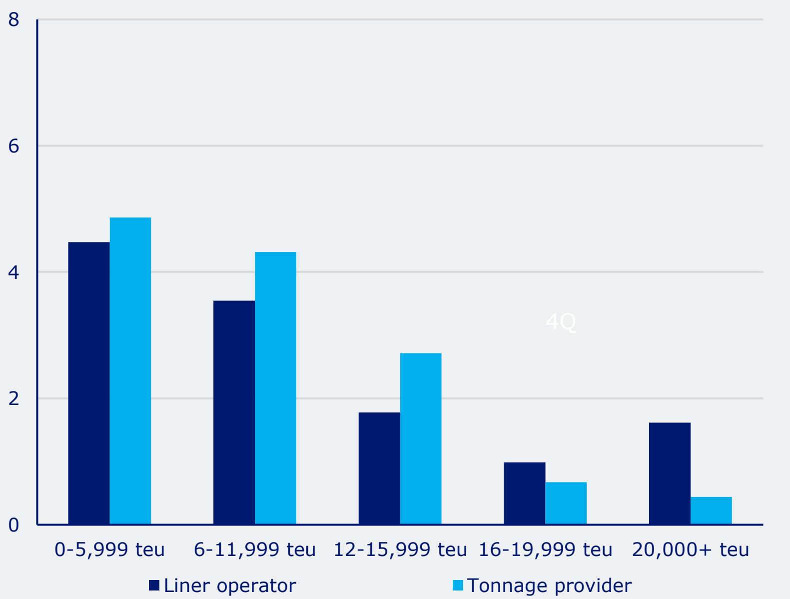
BOX RATES AND PORT CONGESTION



CONTRACTING BY SUBSEGMENT (MILLION TEU)



CONTAINER FLEET BY OWNERSHIP AND SIZE (MILLION TEU)



Source: Clarksons, Danish Ship Finance

SUMMARY: CONTAINER MARKET OUTLOOK

Global economic activity is experiencing a broad-based and sharper-than-expected slowdown

The global economic outlook is deteriorating. Increasing food and energy prices combined with higher interest rates are resulting in significantly lower household spending and higher manufacturing costs. The IMF expects that for many people 2023 will feel like a recession. The Container industry is positioned for growth. The fleet is set to expand massively in 2023 and 2024, and there are few obvious scrapping candidates. Liner operators will return vessels to tonnage providers and surplus vessel capacity is likely to go into lay-up. Box and timecharter rates, together with secondhand prices, are expected to return to post-Covid-19 levels.

Box and timecharter rates are declining even before the massive orderbook is delivered. The infrastructural bottlenecks that have constrained the fleet's cargo-carrying capacity are slowly being resolved and more capacity is becoming available. Secondhand prices have been falling significantly faster than dictated by the drop in timecharter income since June 2022.

A BLEAK SHORT- AND MEDIUM-TERM OUTLOOK

The short-term outlook is bleak, as a massive fleet expansion of 2.4 and 2.8 million teu – the equivalent of 10% and 11% of the fleet – is scheduled for 2023 and 2024. There are no obvious scrapping candidates, since the older vessels in the fleet are significantly smaller than the incoming vessels. Premature scrapping and lay-up of vessels seem inevitable.

MUCH DEPENDS ON THE COUNTERPARTY RISK

Until June 2022, secondhand prices developed largely in tandem with vessels' earnings potential, which may suggest that owners of vessels on charter should be facing a low risk of default as long as the charter contract is in place. But lessons learned during previous crises have taught us that some market participants renegotiate terms in times of massive surplus vessel capacity.

HOW MUCH CAN LINER OPERATORS LIMIT THEIR CHARTERING-IN OF VESSELS?

It is difficult to predict which vessel segment is most exposed to overcapacity. It boils down to liner operators' capacity management and route planning. The ten largest operators are currently deploying 85% of the global fleet. Liner operators own the lion's share of the largest vessels. These vessels will be deployed, and smaller vessels will then be cascaded onto other routes until port constraints put an end to the cascading. Tonnage providers own more than half the capacity in some vessel segments. Parts of these segments could be more exposed if the alliances can route optimise without a significant share of the segment in question.

LITTLE IMPACT FROM THE UPCOMING CLIMATE REGULATION

The climate agenda remains front and centre in the industry, but the short-term impact is expected to be limited. The upcoming EEXI regulation is likely to require some vessels to be temporarily taken out of service for engine power limitation. Simulated CII ratings have suffered from higher speeds and high congestion leading to more time spent in ports. Still, the CII regulation is not expected to have a material impact on supply until the mid-2020s. By that time, many of the oldest vessels might have been taken out of service simply because of overcapacity.

SOME VESSELS MAY NEVER BE BUILT

Newbuilding prices have increased strongly but seem to be trailing the costs of building the vessels. It remains to be seen if parts of the orderbook end up not being built, either because a yard defaults or it fails to provide the buyer with a refund guarantee.

CONTAINER FLEET OUTLOOK

Surplus vessel capacity is building up, with tonnage providers the most exposed

Surplus vessel capacity is building up as infrastructural bottlenecks ease.

LARGE ORDERBOOK...

Overall, the orderbook stands at a record 7 million teu, up from just 2 million teu in September 2020. As a share of fleet capacity, the orderbook equals 25% of the fleet in teu, which is a 12-year high, though well below the 60% seen in late 2007.

...FOR "ECO" DUAL-FUELLED VESSELS

One-third of the vessels in the orderbook are "alternative fuel-capable", with LNG (30%) as the preferred option over methanol (6%). 80% of the vessels on order are equipped with electronic controlled engines, while it is only 34% of the fleet.

STRONG INFLOW OF NEW VESSELS IN 2023 AND 2024

The orderbook runs until 2026, but 78% of the orders are scheduled to be delivered before the end of 2024. Tonnage providers have placed 44% of the capacity ordered. Their orderbook is more front-loaded, with 92% of orders to be delivered by year-end 2024. One-third of the orders placed by liner operators are to be delivered in 2025 and 2026.

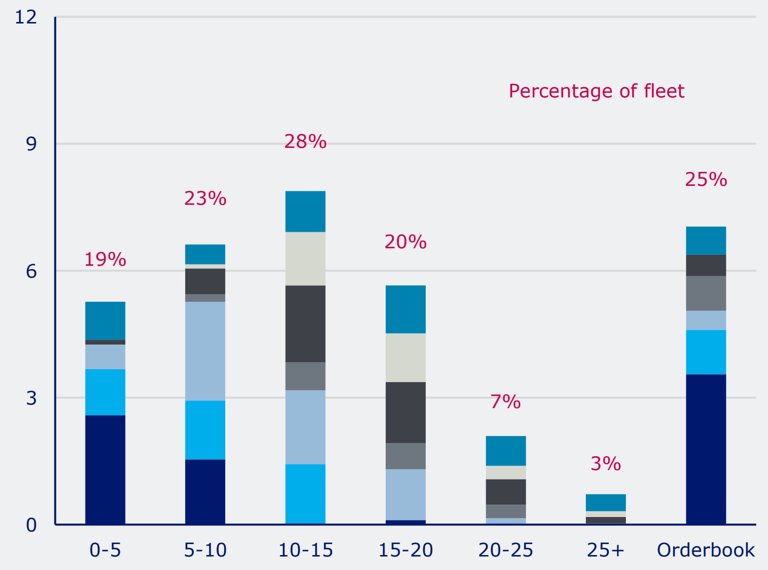
LIMITED SCRAPPING POTENTIAL

The ordinary scrapping potential is not high, as only 10% of the fleet is older than 20 years – and no scrapping candidates are to be found in the segments that are growing the most. Surplus vessel capacity is expected to build and the oldest vessels are likely to be scrapped prematurely. Many vessels will undergo periods of lay-up.

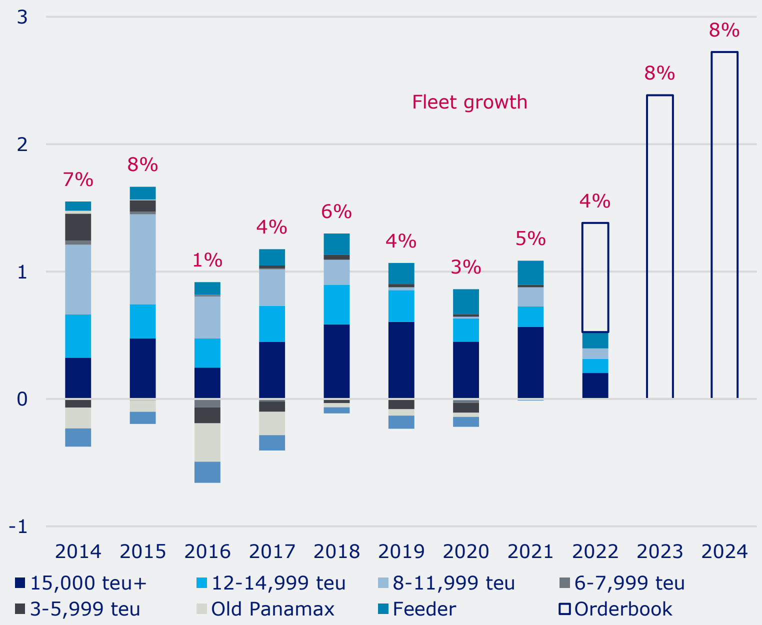
LOW EARNINGS AND DEPRECIATING SECONDHAND PRICES

The industry has earned a lot of money during the past two years, which may indicate that it will take time before surplus vessels are scrapped. Liner operators have scheduled their orders over a longer period, which may mean they take longer to return surplus vessel capacity to the tonnage providers. That may allow timecharter rates to depreciate more slowly. Still, lessons from previous crises have taught us that renegotiation is widespread when overcapacity dominates the outlook.

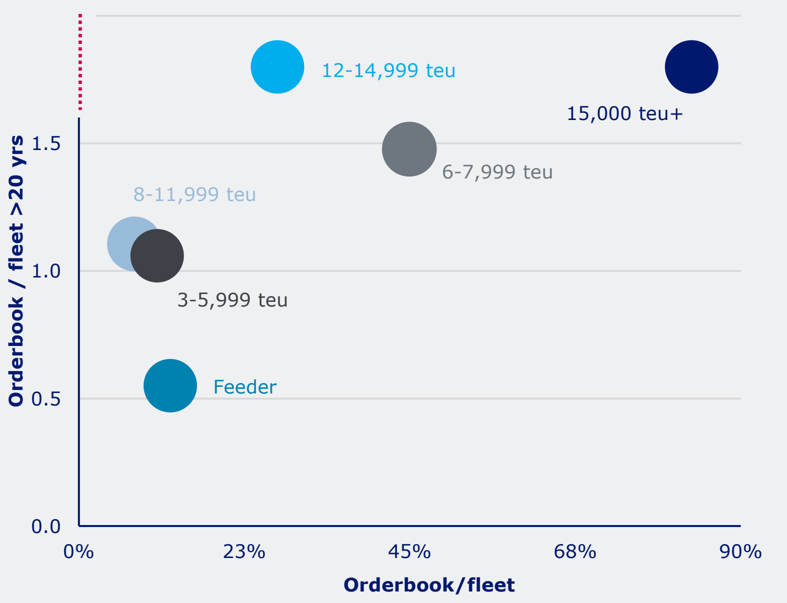
AGE DISTRIBUTION (MILLION TEU)



FLEET DEVELOPMENT (MILLION TEU)



FLEET RENEWAL POTENTIAL (TEU)



Source: AXS Marine, Clarksons, Danish Ship Finance

CONTAINER DEMAND OUTLOOK

The Container industry has been planning for a major fleet renewal, but new capacity is coming in at a time of very low demand

Container demand increased strongly when Covid-19 redirected consumer spending towards containerised goods. Today, this trend is reverting, but consumer spending is not simply returning to leisure and fossil fuels. Rising food and energy prices combined with higher interest rates are significantly reducing household spending and raising manufacturing costs. The demand outlook for Container vessels is bleak. Volumes are already struggling to be upheld, but declines in 2023 could be significant.

DARK CLOUDS ARE GATHERING

The global economy is headed for stormy waters, and financial turmoil may well erupt. The global cost of living is rising due to higher food and energy prices and increasing debt servicing costs globally.

LOW ECONOMIC GROWTH

The IMF predicts that global growth will slow from 6% in 2021 to 3.2% in 2022 and 2.7% in 2023. The forecast for 2023 is the weakest since the 2.5% growth rate seen during the global slowdown of 2001 — with the exception of the global financial crisis and the acute phase of the Covid-19 pandemic.

SHORT-TERM RECESSION

The weak outlook reflects significant slowdowns for the three largest economies. The US saw GDP contract in the first half of 2022, sending the annual growth expectation down to 1.6% for 2022 and 1% for 2023, relative to 5.7% in 2021. The euro area is expected to go into recession during the second half of 2022, which is expected to lower annual GDP growth from 5.2% in 2021 to 3.1% in 2022 and 0.5% in 2023. Chinese GDP is being negatively affected by prolonged Covid-19 outbreaks, lockdowns and a growing property sector crisis. The Chinese economy is expected to grow by only 3.2% in 2022 and 4.4% in 2023, relative to 8.1% in 2021.

A VULNERABLE CHINESE PROPERTY SECTOR

A worsening of China's property sector crisis could spill over to the domestic banking sector and weigh heavily on the country's growth, with negative cross-border effects across industries and sectors. Real estate investments are likely to decline over the next two years. No shipping segment will remain untouched if the Chinese property sector begins to decline.

MANY PEOPLE WILL FEEL A RECESSION DURING 2023…

The IMF expects that more than a third of the global economy will contract this year or next. It argues that the worst is yet to come, and for many people 2023 will feel like a recession.

...BUT LABOUR MARKETS REMAIN STRONG

These challenges do not imply that a large downturn is inevitable. In many countries, including the US, the UK and the euro area, labour markets remain tight, with historically low unemployment rates and high levels of vacancies.

A CHANGING GEOPOLITICAL LANDSCAPE

Still, the energy crisis, especially in Europe, is not a transitory shock. The geopolitical realignment of energy supplies in the wake of Russia's war against Ukraine is broad and permanent.

THE STRONG US DOLLAR ADDS TO GLOBAL PRICE PRESSURE

The external environment is already very challenging for many economies. The sharp appreciation of the US dollar against most other currencies is adding significantly to domestic price pressures and to the cost of living for these countries. The inflationary pressures have triggered a rapid and synchronised tightening of monetary conditions that is likely to weigh heavily on economic activity and global trade not only in 2023 but also well into 2024.

POSITIONED FOR GROWTH BUT UP AGAINST RECESSION

The Container industry is positioned for strong growth in trade volumes with an orderbook-to-fleet ratio of 27%. But given the current global economic outlook, there seems little indication that trade will grow as quickly as hoped. Instead, signs are that 2023 and 2024 will be difficult years, with not only liner operators but also tonnage providers struggling to manage capacity.

RATES AND VALUES ARE LIKELY TO DROP

Surplus vessel capacity seems inevitable. The age profile of the fleet leaves little potential for age-driven demolition. Instead, younger vessels will need to be laid up and older, less efficient vessels will have to be scrapped prematurely. Secondhand prices will decline back near pre-Covid levels. Timecharter rates will suffer, while box rates will reflect how effectively liner operators are managing the capacity across trade lanes.

DRY BULK

DRY BULK

It all depends on the effects of Chinese fiscal stimuli

The Dry Bulk market has exited a strong bull market. The Baltic Dry Index peaked at a 14-year high of 4,800 back in October 2021 and has since declined to 1,900. Infrastructural bottlenecks have supported freight rates beyond fundamentals, but these are dwindling. Freight rates and secondhand prices are now being determined in a market that is struggling with surplus vessel capacity and weakening demand. The BDI has declined by 33% during 2022, but secondhand prices have proved more resilient. The demand outlook is uncertain. Higher energy prices and lower economic growth are not supportive of demand, but there are hopes that a renewed injection of Chinese fiscal stimuli will support the Chinese real estate sector and Dry Bulk demand in 2023.

FREIGHT RATES AND SECONDHAND PRICES

In October 2022, the Baltic Dry Index stood at 1,900. This is 17% below the level from January, whereas the average secondhand price has only declined by 2% despite healthy S&P activity. Capesize vessels have been under pressure, with spot earnings for non-scrubber-fitted vessels below OPEX in early September. The smaller vessels have fared better. Easing port congestion has been a key driver for the weaker Dry Bulk market.

The value of a one-year timecharter rate for a Capesize vessel has declined by USD 12 million during the past 12 months, but the price of a ten-year-old vessel is only down by USD 6 million, to USD 30 million. Younger and older vessels have declined less.

HIGH SECONDHAND PRICES...

Based on past pricing of similar earnings, the price could drop by approximately 30% or USD 9 million. In the event of this, the price-to-earnings ratio would still be within the highest 30%, whereas a median price-to-earnings ratio would indicate a price of only USD 15 million.

...ACROSS SEGMENT AND AGES

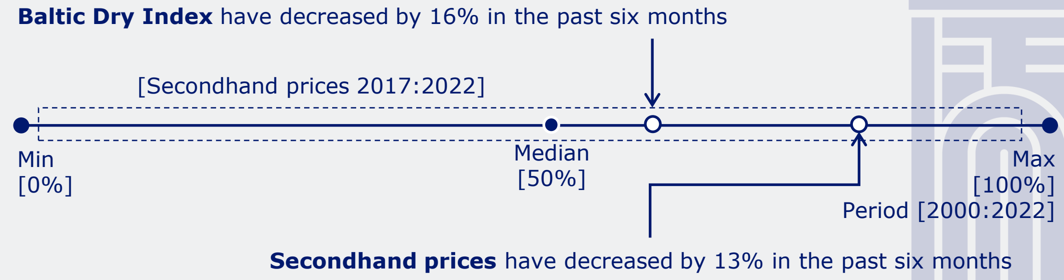
The other three segments have experienced a similar market development, with the vessels' earnings potential having dropped significantly more than the price correction.

25-30% PRICE REDUCTION

We expect that an average price reduction of 25-30% could come into play within the foreseeable future.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2022



Distance-adjusted seaborne demand is predicted to grow by 0.6% in 2022, since longer travel distances are expected to compensate for the 0.4% drop in seaborne volumes. The fleet is scheduled to grow by 2.8% in 2022, while active fleet supply has been reduced by port congestion. Fleet utilisation has declined, especially for the larger vessels. Sailing speeds are low, with Capesize vessels sailing at historically low speeds.

Deliveries continue to decline. 31 million dwt is scheduled for delivery in 2022, down from 38 million dwt in 2021 and 49 million dwt in 2020.

Scrapping has almost halved since last year, with only 3.3 million dwt scrapped distributed between 30 vessels.

Contracting has also come down from last year's 49 million dwt, with only 16 million dwt distributed between 223 vessels ordered during the first nine months of 2022.

Orderbook: The orderbook has declined by 11% during 2022 and is currently at a historical low of 7% of the fleet. The orderbook for Capesize vessels is also at a historically low level of 5.8% of the fleet.

Demand is suffering from a weak property sector in China, the suspension of Ukrainian grain exports, and macroeconomic headwinds for minor bulk trade. Iron ore and minor bulk volumes are down by 1%, grain is down by 3%, and coal volumes have been largely flat in 2022.

Travel distances: A shift in trading patterns has increased travel distances and mitigated some of the impact from lower volumes on vessel demand.

MARKET DYNAMICS IN THE LAST SIX MONTHS

Surplus vessel capacity is building, since seaborne volumes are declining and fleet availability is increasing

The Dry Bulk market is facing declining fleet utilisation, as demand volumes are shrinking amid modest fleet growth. Easing port congestion is increasing fleet availability.

REDUCED FLEET UTILISATION

Dry Bulk volumes have declined by 1.6% during 2022. Longer travel distances have balanced out some of the decline but not enough to absorb the 2.8% fleet expansion. Port congestion supported freight rates at the beginning of the year, but this has since eased, increasing the "active" fleet by approximately 4%.

BLEAK STEEL OUTLOOK

Worsening macroeconomic headwinds and rising food and energy prices have increased costs and reduced global growth and industrial demand. Many energy-intensive industries, including steel mills, are struggling. China's steel industry is further challenged, as the property sector is on the brink of a significant slowdown. Global seaborne iron ore trade is projected to decline by 2% in 2022.

STABLE COAL VOLUMES

Distance-adjusted seaborne coal volumes are expected to remain stable during 2022 despite the loss of some Russian volumes. Trade patterns have shifted, since an increased focus on energy security, particularly in Europe, has supported coal-fired power generation. Weaker Chinese demand has been absorbed by Europe and India.

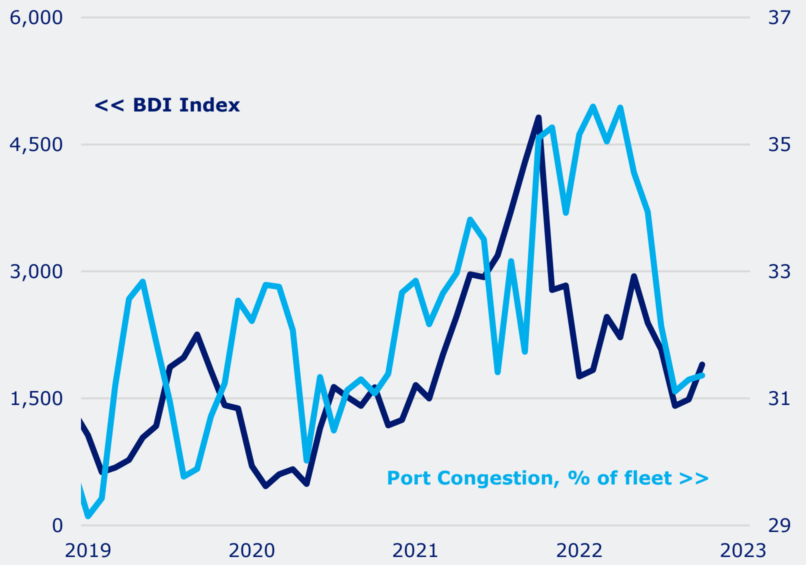
LOWER GRAIN TRADES

A drop in grain exports from Ukraine and, to some extent, Russia, is expected to reduce seaborne grain volumes by 2.4% in 2022. The ongoing conflict is interfering with farmers' ability to prepare fields, plant seeds, and protect and fertilise crops, which will likely result in even lower volumes next harvest season.

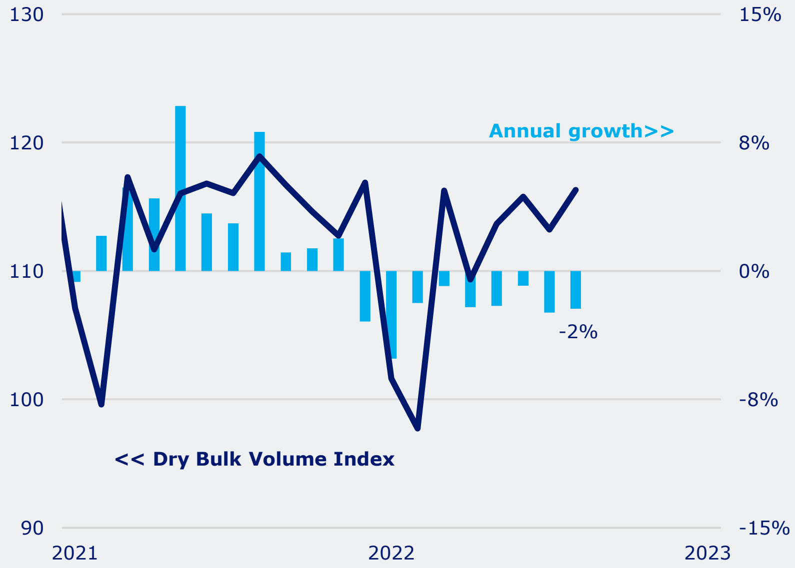
MINOR BULK VOLUMES ARE DECLINING

Seaborne minor bulk shipments are closely aligned with economic growth and industrial production. Shipments have been declining by 1.6% in 2022. It is hard to see volumes turning around until there is a broader economic recovery.

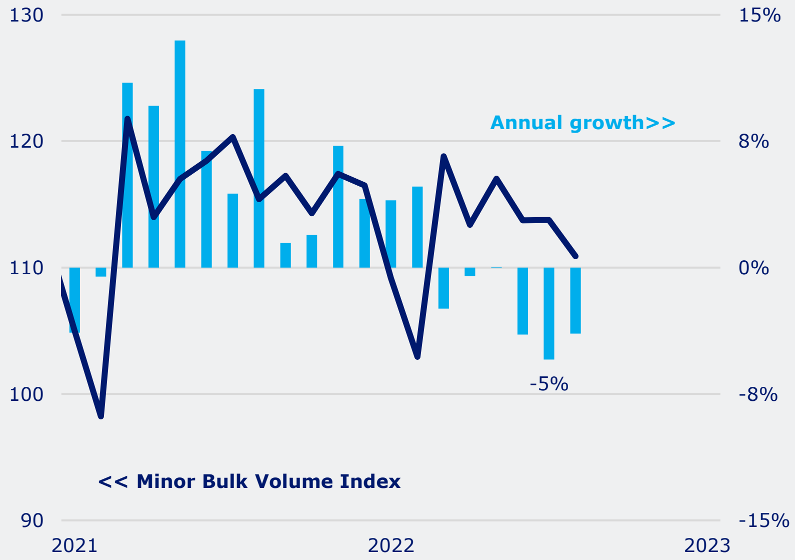
BALTIC EXCHANGE DRY INDEX AND PORT CONGESTION



SEABORNE DRY BULK VOLUMES (INDEX)



SEABORNE MINOR BULK VOLUMES (INDEX)



Source: Clarksons, Danish Ship Finance

SUMMARY: DRY BULK MARKET OUTLOOK

Deteriorating demand is driving the market outlook

China has introduced new stimulus packages to mitigate the effects of the Covid-19 pandemic and boost economic recovery. It remains to be seen if fiscal injections will be enough to restore consumer confidence and drive a recovery in not only the Chinese economy but also in the Dry Bulk market. Much indicates that we are heading for a period of surplus vessel capacity.

The Dry Bulk market is heading for overcapacity. Global demand is weakening, while the fleet is set to expand by approximately 3% in both 2022 and 2023. Increasing energy prices, rising commodity prices and lower economic growth are combining to reduce demand for minor bulk and steel (and iron ore). Coal demand is expected to increase in 2023 and there are hopes that grain volumes will recover to 2021 levels.

LIMITED FLEET GROWTH

The orderbook-to-fleet ratio is at a historical low of 7%. The orderbook is running out quickly, with few vessels on order beyond 2024. The age distribution of smaller vessels allows for significant scrapping without the economic life of older vessels being reduced. The Capesize fleet does not have many older vessels left. Should demand fail to employ the incoming capacity, younger vessels will need to be scrapped to balance supply and demand. This would be at the expense of lower secondhand values for older Capesize vessels, since their economic lifetimes could drop below 20 years.

DOWNSIDE RISK IN SECONDHAND PRICES

We are concerned about secondhand prices generally, as price-to-earning ratios are currently at high levels. Secondhand prices could drop by up to 30% in today's market, and further depreciation is likely when supply outpaces demand.

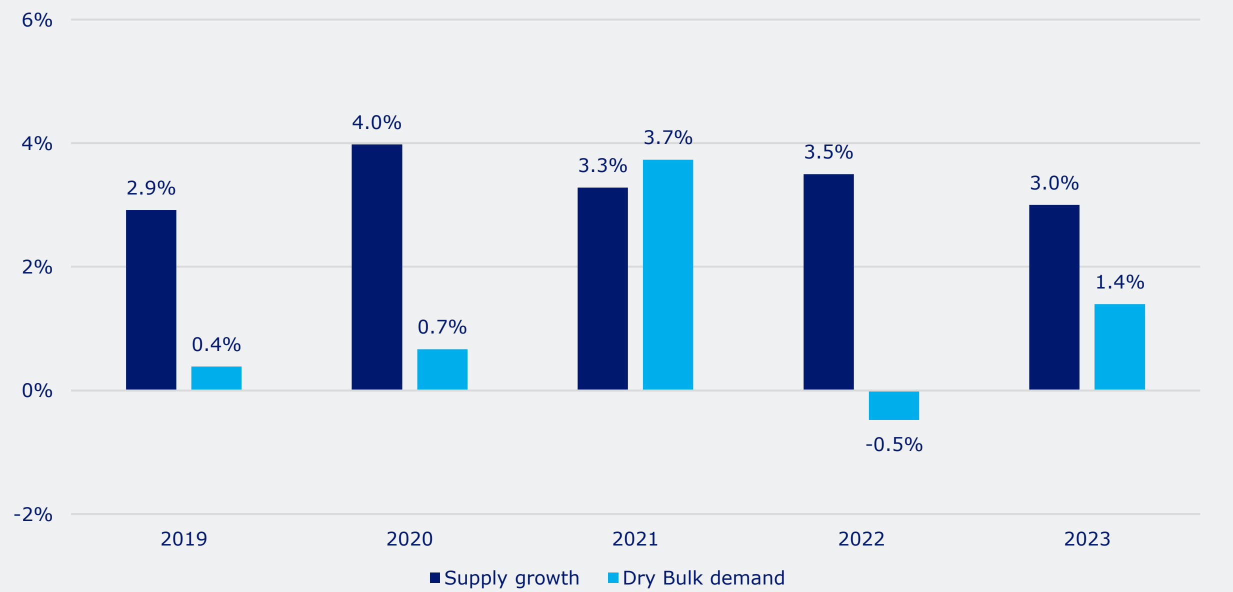
REDUCED FLEET AVAILABILITY DUE TO SLOW STEAMING

Reduced port congestion is causing the active fleet to expand by more than just deliveries, but further slow steaming is likely to happen if surplus vessel capacity builds. The new IMO environmental regulations are not expected to have a material impact on speeds, since speeds tend to decline when surplus vessel capacity builds. Still, some older vessels may temporarily be taken out of service for retrofits.

THE ELEPHANT IN THE ROOM IS THE CHINESE REAL ESTATE OUTLOOK

The Chinese real estate sector is a big unknown. China seems to be reaching the limits of its capital-intensive growth path. A slowdown in growth in personal disposable income could be about to burst a bubble in the world's most expensive real estate market, where real estate is being traded at 24 times annual income. Dry Bulk volumes face significant downside risk if Chinese stimuli do not drive a recovery in domestic real estate. We could be heading for a structural downward shift in the demand curve for Dry Bulk volumes in the coming year.

SUPPLY (GROSS) AND DEMAND BALANCE (DWT AND TONNE-MILES)



Source: Clarksons, Danish Ship Finance

DRY BULK FLEET OUTLOOK

Increased risk of surplus vessel capacity but further slow steaming may balance the market

Surplus vessel capacity may begin to build, but lower freight rates and new environmental regulations may facilitate further slow steaming and hence improve fleet utilisation.

LOWEST ORDERBOOK IN 18 YEARS

The orderbook-to-fleet ratio peaked in November 2008 at 80% (117% for Capesize vessels) and has since been on a downward-sloping trajectory. By October 2022, it had reached an 18-year low of 7% (5.8% for Capesizes). Approximately half the orderbook is scheduled to be delivered during the fourth quarter of 2022 or in 2023. The fleet is set to grow by 3.5% in 2023 (before scrapping).

ECONOMIC LIFETIMES ABOVE 20 YEARS

Outside the Capesize segment, there is a good balance between older vessels and orderbooks. The Handysize segment has more than two vessels older than 25 years for each vessel on order, while the Handymax and Panamax fleets will need vessels older than 20 years.

CAPESIZE: ECONOMIC LIFETIMES BELOW 20 YEARS

The Capesize segment will be challenged if demand fails to employ the incoming capacity. With more than 110 vessels on order, only two vessels older than 25 years and 42 vessels between 20 and 25 years, those older than 15 years will become scrapping candidates. Demolishing these would lower the secondhand prices of older vessels.

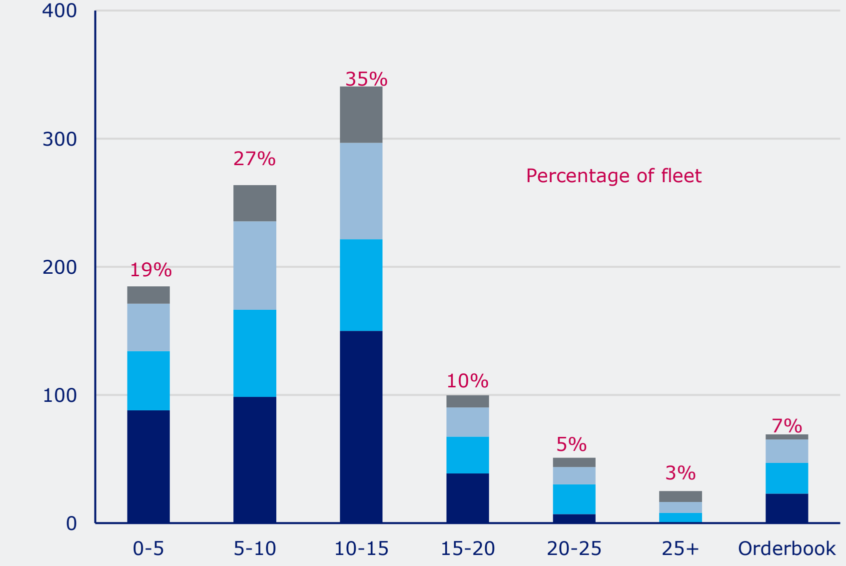
DOWNSIDE RISK IN CURRENT PRICES

Despite the low scrapping activity, Capesize vessels have seen their average scrapping age decline from 25 years in 2021 to 22 years in 2022. Secondhand prices are expected to fall when their economic lifetimes shorten. The effect has not yet been reflected in prices.

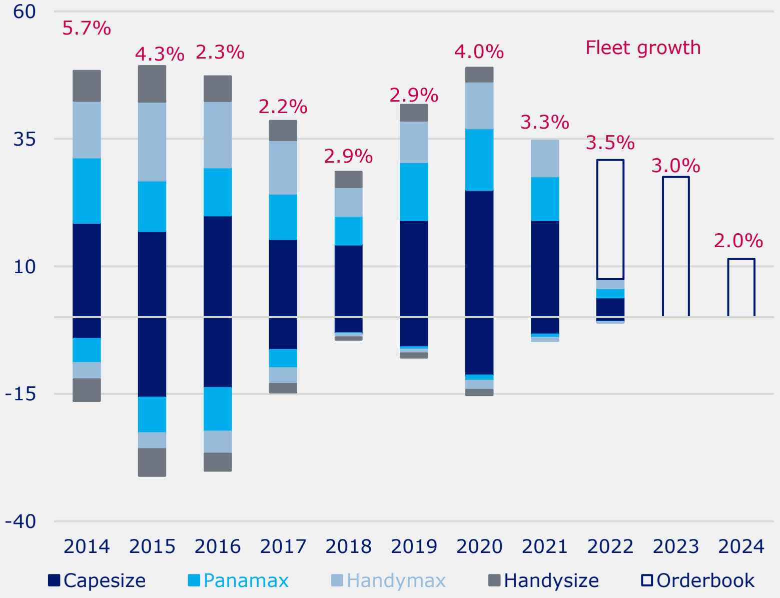
REDUCED SPEEDS WILL IMPROVE THE OUTLOOK

The IMO environmental regulations coming into force in 2023 are likely to curtail fleet productivity, as some vessels will be temporarily taken out for retrofitting, while others will slow steam to stay compliant. The adaptation rate remains to be seen, but it could lower fleet productivity somewhat. Still, scrapping is likely to increase in 2023 and 2024.

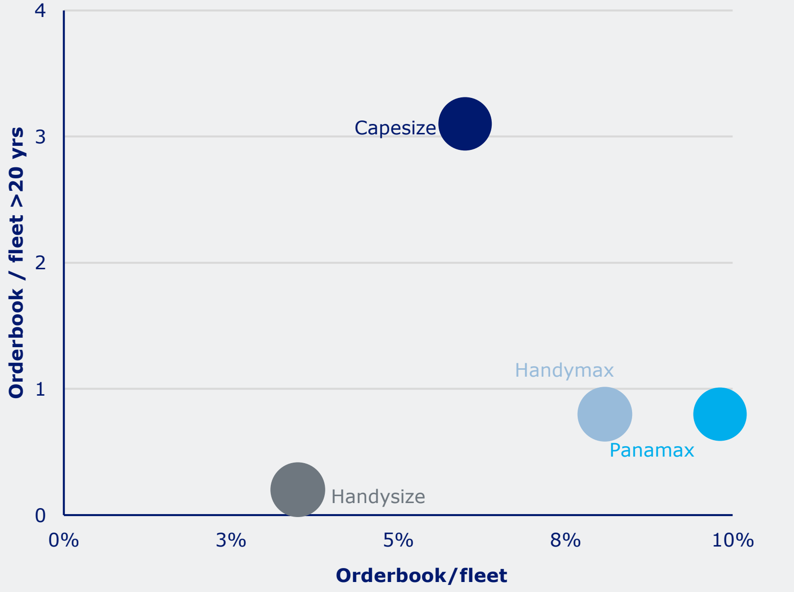
AGE DISTRIBUTION OF FLEET (MILLION DWT)



FLEET DEVELOPMENT (MILLION DWT)



FLEET RENEWAL POTENTIAL (DWT)



Source: Clarksons, Danish Ship Finance

DRY BULK DEMAND OUTLOOK

There will be low growth in seaborne Dry Bulk volumes during 2023

Little demand growth is expected for 2023 because of the low global economic growth expectations and high energy prices. There is significant downside risk if Chinese stimuli do not drive a recovery in domestic real estate.

ALMOST FLAT VOLUMES IN 2023

Dry Bulk demand was weak during the first eight months of 2022. Volumes are expected to end the year down 1.6%, whereas longer distances will leave tonne-miles demand growth at -0.5%. In 2023, Dry Bulk demand is expected to increase by 0.8%, while longer distances are expected to add 0.6% to this.

MUCH DEPENDS ON A RECOVERY IN CHINESE REAL ESTATE

Chinese steel demand contracted by 6.6% in the first eight months of 2022, but annual volumes are expected only to fall by 4%. In 2023, Chinese stimuli could prevent steel demand from contracting further. Global steel demand in 2023 is expected to remain flat given the assumption that new stimulus measures are to be introduced and lockdown measures largely removed in the latter part of 2022.

DOWNSIDE RISK EXISTS

There is significant downside risk if these assumptions are not met. The slowing global economy poses further downside risks, not only for China but for shipping and Dry Bulk in particular. See our demand deep dive for additional information on Chinese growth.

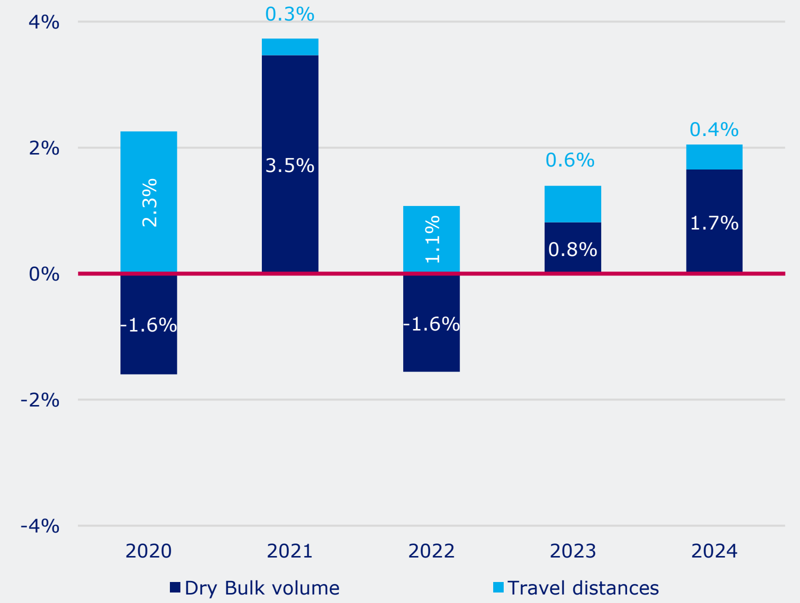
LITTLE GROWTH IN IRON ORE BUT GRAIN MAY RECOVER

Global iron ore volumes are expected to decline in 2023 but longer distances are predicted to absorb the lost volumes. Grain is expected to recover much of the lost territory during 2023. Distance-adjusted demand are predicted to grow by 4.2% in 2023.

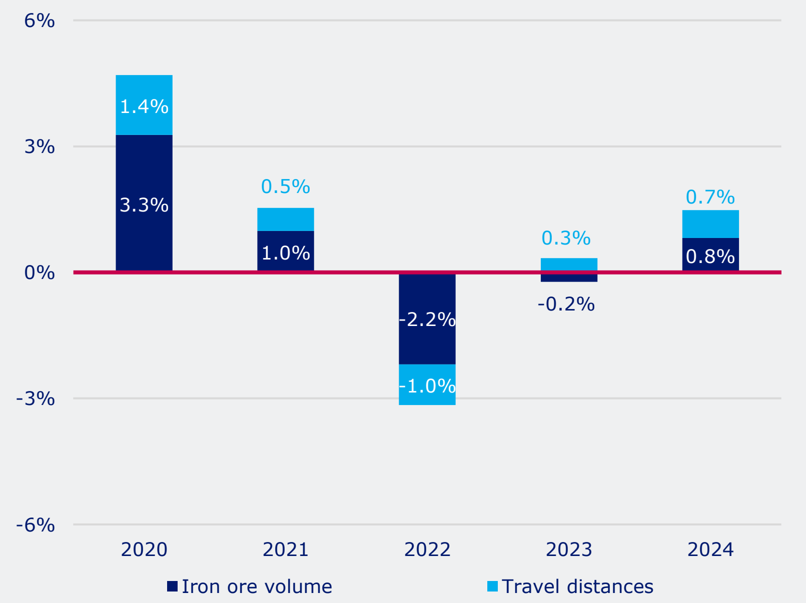
COAL SHIPMENTS TO INCREASE BY 2% IN 2023

Global coal shipments are still below 2019 volumes but are expected to grow by 1.6% in 2023. Minor bulk volumes reflect global industrial production, which is expected to struggle during 2023 because of low economic growth and high energy prices.

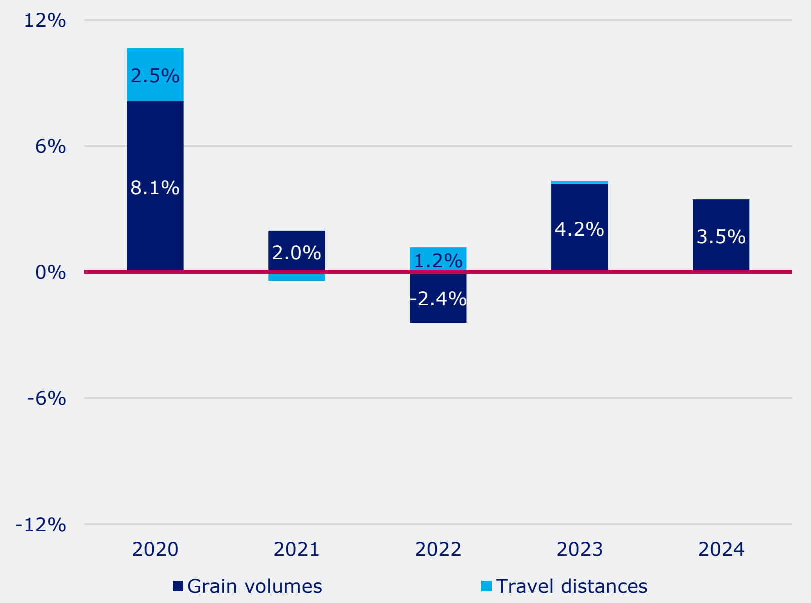
SEABORNE DRY BULK DEMAND (ANNUAL GROWTH)



SEABORNE IRON ORE DEMAND (ANNUAL VOLUME GROWTH)



SEABORNE GRAIN TRADE (ANNUAL GROWTH)



Source: Clarksons, Danish Ship Finance

DRY BULK DEMAND DEEP DIVE (1/2)

The Chinese property boom is weakening

The Chinese growth engine is sputtering, with prolonged Covid-19 outbreaks, lockdowns and a growing property sector crisis reducing economic activity and trade. The IMF predicts that the Chinese economy will grow by only 3.2% in 2022 and 4.4% in 2023, relative to 8.1% in 2021. Given the size of China's economy and its importance for global supply chains, this will weigh heavily on global trade in general and Dry Bulk in particular.

INVESTMENT-DRIVEN GROWTH...

To understand the severity of the current situation, we need to keep in mind that the Chinese economy, over the last two decades, has powered its growth engine with massive investments, including in infrastructure and real estate.

...AS A POLITICAL CHOICE

Government policy to make housing an engine for growth combined with the rapid urbanisation in China has created strong demand for residential housing. The limited availability of other investment options has made real estate the most important asset class for Chinese households, amounting to about 59% of urban household assets in 2019.

RESIDENTIAL REAL ESTATE HAS DRIVEN ALMOST 70% OF TOTAL REAL ESTATE INVESTMENT

For over two decades, China's real estate sector has grown at a remarkable pace. Total real estate investment rose from around 3% of GDP in 2000 to a peak of 14.8% in 2014 and stood at 12.9% of GDP at end-2021 (compared to an average of around 5% in OECD countries). Investment in residential real estate accounts for almost 70% of total real estate investment.

30% OF GDP COMES FROM REAL ESTATE

The importance of the real estate sector goes beyond direct investment numbers. Around 30% of GDP comes from real estate and various activities along its supply chain, including the use of inputs such as steel, cement and energy. The sector is also a large employer, not only in the construction phase but also during maintenance and upgrades. The ripples from residential housing influence demand for household appliances and furniture. In addition, the sector is capital-intensive and receives financing from financial markets and banks and is an important source of revenue for local governments through land sales.

THE ECONOMY IS ABOUT TO SHIFT GEAR

Today, some of the fundamentals underpinning China's property boom are weakening. The era of double-digit economic growth is over as China reaches the limits of its capital-intensive growth path. A slowdown in growth in personal disposable income is therefore on the cards in the coming years, in addition to ongoing demographic changes such as lower birth rates, fewer new marriages, and slowing urbanisation. China's working-age population is declining, as the population is ageing, with the number of elderly projected to reach 20% of the total by 2025. The combination of these factors could produce a structural downward shift in the demand curve for housing and the economy.

CHINESE HOUSES ARE AMONG THE MOST EXPENSIVE IN THE WORLD

It may be too early to tell whether the housing bubble is about to burst, but the boom in the real estate sector is evident in price trends. The average price per square metre across 100 major cities shows that residential housing prices in Tier 1 cities more than doubled between 2010 and 2021 to roughly RMB 43,000 per square metre. Growth in house prices has outpaced income growth; prices are now 24 times annual income. Houses in China's Tier 1 cities are among the most expensive in the world.

THE RISK OF DEFAULT IS ON THE RISE

There are signs that household balance sheets are coming under increasing pressure, which may threaten households' ability to service mortgage loans. Total household debt has been rising consistently, from 27% of GDP in 2010 to an estimated 61% of GDP in January 2022. The combination of super-high property prices, rising household indebtedness and slowing growth in disposable income increases the risk that some households may not be able to meet their mortgage obligations.

Source: Clarksons, IMF, World Bank, Danish Ship Finance

DRY BULK DEMAND DEEP DIVE (2/2)

Dry Bulk volumes could increase in 2023, but the outlook is deteriorating

REDUCED ACTIVITY DUE TO LOWER DEMAND

The large stock of uncompleted housing in China combined with weakening demand from homebuyers is concerning. There are numerous pre-sold housing projects currently underway that run the risk of never being completed as more developers run into liquidity problems. Estimates by the IMF indicate that the current backlog of uncompleted pre-sold housing across the country will take five years to complete, assuming no new housing starts.

BANKS COULD BE FORCED TO REDUCE LENDING

A worsening of China's property sector crisis could spill over to the domestic banking sector and weigh heavily on the country's growth, with negative cross-sector effects. The decline in real estate sales prevents developers from accessing a much-needed source of liquidity to finish ongoing projects, putting pressure on their cash flows and raising the possibility of further debt defaults. Concerned with the delays in the delivery of residential units, thousands of buyers are calling for a moratorium on mortgage payments, which would lead to forbearance and exacerbate the risk of non-performing loans for banks, as well as the liquidity squeeze facing developers. If loans collateralised by land or property are added to mortgages and real estate development loans, the banking sector's total exposure to the real estate sector may be as high as 40-50% of total banking loans. Should the value of collateral deteriorate significantly, banks could be forced to curtail lending.

A REAL ESTATE CRISIS COULD SPILL OVER INTO INFRASTRUCTURE PROJECTS

Uncertainty over the property sector could also have an impact on local government finances. Land sales are an important source of revenue for local governments. Revenue from land sales averages 29.5% of consolidated fiscal revenues in China, with provinces like Hunan, Jiangsu and Zhejiang raising more than 50% of consolidated fiscal revenues from land sales. In addition to direct proceeds from land sales, local government financing vehicles (LGFVs) also use future land sale revenues as collateral to raise debt financing. A sustained reduction in revenue from land sales may therefore jeopardise the ability of local governments to fund infrastructure projects, a key driver of growth in the past.

SIGNIFICANT DOWNSIDE RISK

The macroeconomic impact of a property market slump poses the biggest threat to financial stability. The outsized role of real estate in China's GDP means that prolonged market-wide uncertainty and loss of confidence may substantially reduce real estate sales and investment, dampen economic growth, and raise overall credit risks. Further, property-related sectors, including construction, would see weaker demand and lower production. The World Bank estimates that a 20% fall in real estate activity could lead to a 5-10% drop in GDP, even without amplification from a banking crisis or accounting for the importance of real estate as collateral.

HOW TO STIMULATE GROWTH WITHOUT CONSUMER CONFIDENCE

In the short term, China faces the dual challenge of balancing Covid-19 mitigation with supporting economic growth. Recurrent Covid-19 outbreaks are adding to economic uncertainty, weighing on private investment and consumption, and reducing the effectiveness of policy measures. China has the macroeconomic space to counter the growth slowdown. The government has increased public spending and introduced tax rebates and policy rate cuts. But it remains to be seen whether the stimuli will be effective while mobility restrictions persist.

DRY BULK VOLUMES COULD INCREASE IN 2023...

There is a chance that another round of debt-financed infrastructure and real estate investment may maintain or even increase Dry Bulk volumes in 2023, but the outlook is deteriorating. The growth model is ultimately unsustainable and the indebtedness of many corporates and local governments is already too high.

...BUT A PERMANENT SHIFT TOWARDS FEWER SHIPMENTS IS EXPECTED

Seaborne Dry Bulk volumes declined by 4% in 2009 and 2% in 2020. A significantly larger and presumably permanent correction in volumes can be expected when the Chinese economy shifts from its current growth engine to becoming "self-reliant" and orientated towards "domestic circulation", as it was expressed in 2020 in China's 14th Five-Year Plan.

Source: Clarksons, IMF, World Bank, Danish Ship Finance

CRUDE TANKER

CRUDE TANKER

Crude Tanker earnings have bounced back, but how long can this last?

Since the start of the Russia-Ukraine war, the Crude Tanker market has positioned itself for a short-term gain. Crude trade flows being shifted more towards long-haul trade and dislocation of vessels have increased earnings for Aframax and Suezmax vessels, while VLCCs are not far behind. Global oil demand is expected to increase further, but various risks are looming. Recession fears in Western countries coupled with low growth rates in Asia may tip the balance in the oil markets, with the uncertainty causing high price volatility. Nevertheless, the Crude Tanker market seems to be to some extent sheltered from these risks. Longer travel distances may compensate for lower volumes, while earnings are also being supported by an all-time-low orderbook.

FREIGHT RATES AND SECONDHAND PRICES

Crude Tanker earnings have increased in all segments. Aframaxes and Suezmaxes have benefited from an increase in long-haul voyages due to changing crude trade flows. VLCC earnings have primarily been driven by higher activity in the US Gulf, but lockdowns in China have reduced crude imports, and thereby VLCC demand, significantly. Earnings premiums for eco and scrubber-fitted vessels have remained high due to high oil prices.

VLCC: After a long period of low earnings, freight rates are finally gaining some momentum. In the past six months, the one-year timecharter rate has increased to USD 41,600 per day (up 163% from an all-time low). This level was last seen in 2019. The price of a five-year-old VLCC has risen by 20% in the same period, reaching USD 89 million.

Suezmax: Demand for Suezmax vessels has increased, partly driven by the surge in Russia-Asia trade and the US-Europe trade. The one-year timecharter rate has risen by 74% in the past six months, to USD 33,200 per day. The price of a five-year-old vessel has increased by 22%, reaching USD 62 million.

Aframax: Higher activity from the US-Europe trade and longer distances driven by the Russia-Asia trade have lifted the one-year timecharter rate by 84% to a 12-year high of USD 32,500 per day. The price of a five-year-old vessel has increased by 21% to USD 57 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2022

Freight rates are above the median and have increased by 107% in the past six months

Secondhand prices are well above the median and have increased by 21% in the past six months

Tonne-mile demand for seaborne crude oil was relatively stable in the first nine months of 2022. Average voyage distances increased significantly for Aframaxes, but lower crude imports in China reduced tonne-mile demand for VLCCs. Fleet utilisation weakened during the period, as the fleet expanded by 2.9%. Slow steaming improved fleet utilisation slightly, with average speeds declining 1.1% (primarily older vessels adjusting to upcoming regulations).

Deliveries: 16 million dwt was added to the fleet in the first nine months of 2022 (3.7% of the fleet) compared to 15 million dwt in the same period in 2021. An additional 6.5 million dwt is scheduled to be delivered this year.

Scrapping has slowed in 2022, with 3.4 million dwt demolished in the first nine months. This is less than half the level of scrapping in the same period in 2021.

Contracting has almost stalled in 2022, with only 1.5 million dwt contracted in the first nine months, compared to some 13.5 million dwt in the same period in 2021. Since July, only two VLCCs have been contracted.

Orderbook: 19.8 million dwt is currently on order, a 57% decline since the start of the year. This represents 5% of the fleet.

Demand: Seaborne trade volumes increased by 5.5% in the first nine months of 2022 compared to the same period in 2021. This was driven by higher demand in OECD countries. Current volumes are still 2.5% below 2019 levels.

Travel distances have increased in 2022, supported by the Russia-Ukraine war. Aframax and Suezmax vessels have benefited with more long-haul voyages, while the VLCCs are steadily following suit.

MARKET DYNAMICS IN THE LAST SIX MONTHS

The Russia-Ukraine war continues to have an impact on the Crude Tanker market

Imbalances in global oil markets continue to drive the recovery for Crude Tankers. Newbuilding activity has been low, due to limited yard availability and high newbuilding prices.

TONNE-MILE DEMAND HAS MAINLY INCREASED FOR AFRAMAXES

The Russia-Ukraine war has changed global crude trade flows. Crude oil is being transported over longer distances, since European imports are shifting away from Russian oil to longer-haul alternatives. Compared to 2019, tonne-mile demand in Q3 for Aframaxes increased significantly.

RUSSIAN CRUDE HAS FOUND NEW DESTINATIONS...

Russian seaborne exports of crude oil have increasingly been shipped to Asia (particularly India and China) since the war started. In August, the share of seaborne crude exports to Asia surpassed that to Europe for the first time (48% to Asia vs. 45% to Europe). The shift in export destinations from Russia has also created an opportunity for more Suezmax vessels to get in on the trade. The share of Suezmaxes loading in Russia has increased to around 35% in 2022 compared to 23% in 2021.

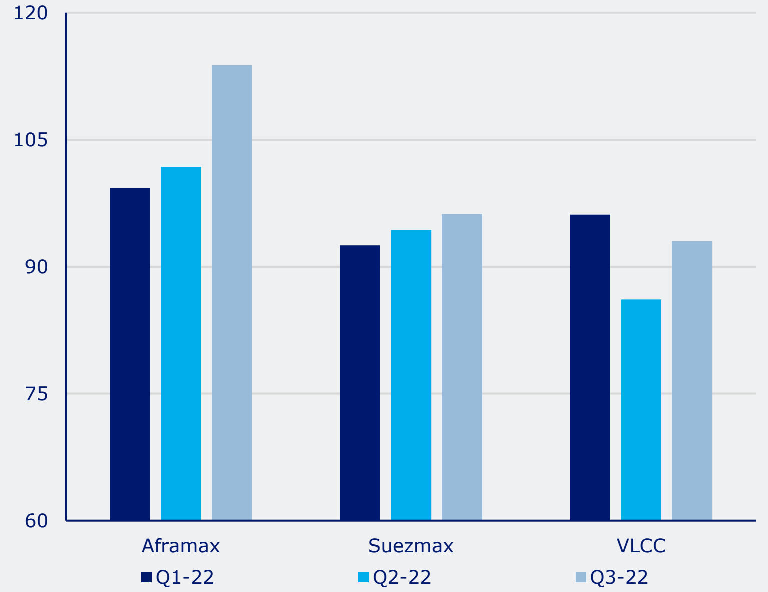
...WHILE EUROPE HAS PURSUED OTHER SOURCES

At the beginning of 2022, Europe imported around 34% of its crude oil from Russia. In October, this was down to 17%. The Russian barrels were substituted with higher supplies from the US, Norway, Egypt and Iraq. The US-Europe trade has traditionally been shipped on Aframaxes and Suezmaxes, but in 2022 VLCCs have taken more market share.

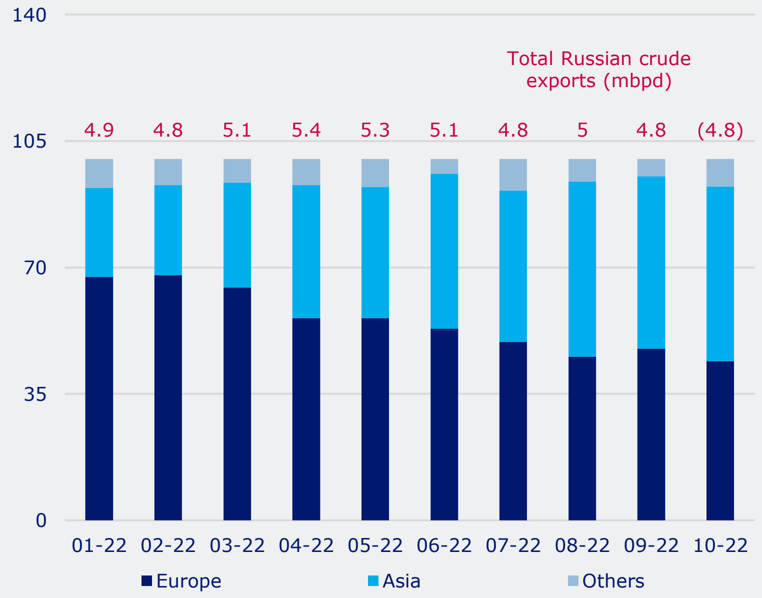
CONTRACTING STALLS; OLDER VESSELS ARE CHANGING HANDS

S&P activity has remained high in 2022. 100 Crude Tankers changed hands in the first nine months. This is almost on a par with the same period last year. In line with our expectations, the secondhand market has been booming, primarily for older vessels. Contracting activity, on the other hand, has been almost non-existent. A mere nine vessels have been contracted in 2022. The high S&P activity in the secondhand market has also pushed prices up for older vessels. The price of a 15-year-old VLCC has reached an 11-year high of USD 47 million.

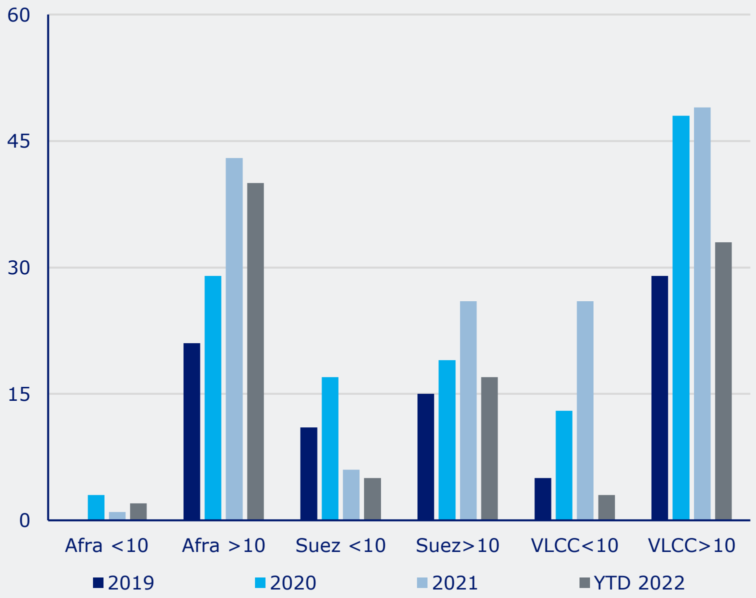
TONNE-MILE GROWTH BY SUBSEGMENT (2019=100)



RUSSIAN SEABORNE CRUDE EXPORTS BY LOAD REGION (%)



SALES BY SUBSEGMENT AND AGE GROUP (NO. OF VESSELS)



Source: Clarksons, Alphatanker, Danish Ship Finance

SUMMARY: CRUDE TANKER MARKET OUTLOOK

The Crude Tanker market is benefiting from increased earnings, but various risks persist

The turnaround in earnings has finally come to the Crude Tanker market, as global inefficiencies continue to push for more long-haul trade. Demand for Crude Tankers is expected to increase further in the short to medium term as the global oil market becomes more fragmented. Earnings are expected to be supported by limited fleet growth, as contracting of new vessels has almost come to a standstill. Although demand is expected to increase, the market remains rather fragile.

DEMAND FOR CRUDE TANKERS IS SET TO INCREASE IN THE SHORT TO MEDIUM TERM

Global oil demand has seen a sudden increase in 2022, driven by a recovery in global travel activity following the end of Covid-related restrictions. Furthermore, the ongoing Russia-Ukraine war has pushed natural gas prices up (especially in Europe), which has prompted a higher gas-to-oil switch for many industrial companies. Current projections estimate that global oil demand will grow by 2% annually in 2022 and 2023. Demand for Crude Tankers is expected to increase by 3.6% in 2022 and 5.2% in 2023. Changing crude oil trade flows and imbalances in the global supply chain are resulting in longer average voyage distances for Crude Tankers.

HIGHER INVESTMENT IN UPSTREAM ACTIVITIES INDICATES COMMITMENT TO FOSSIL FUELS

Although global oil demand is expected to increase in the short to medium term, we see signs that the market is also expecting demand to remain high in the longer term. More investment is being channelled into greenfield activities, which by definition are more long-term in nature. The Russia-Ukraine war has exposed the importance of energy security. European countries are diversifying their supplies of fossil fuels, in order to hedge against these risks. This coupled with high oil prices has encouraged oil majors to also focus on drilling for new oil in order to secure supply in the long term.

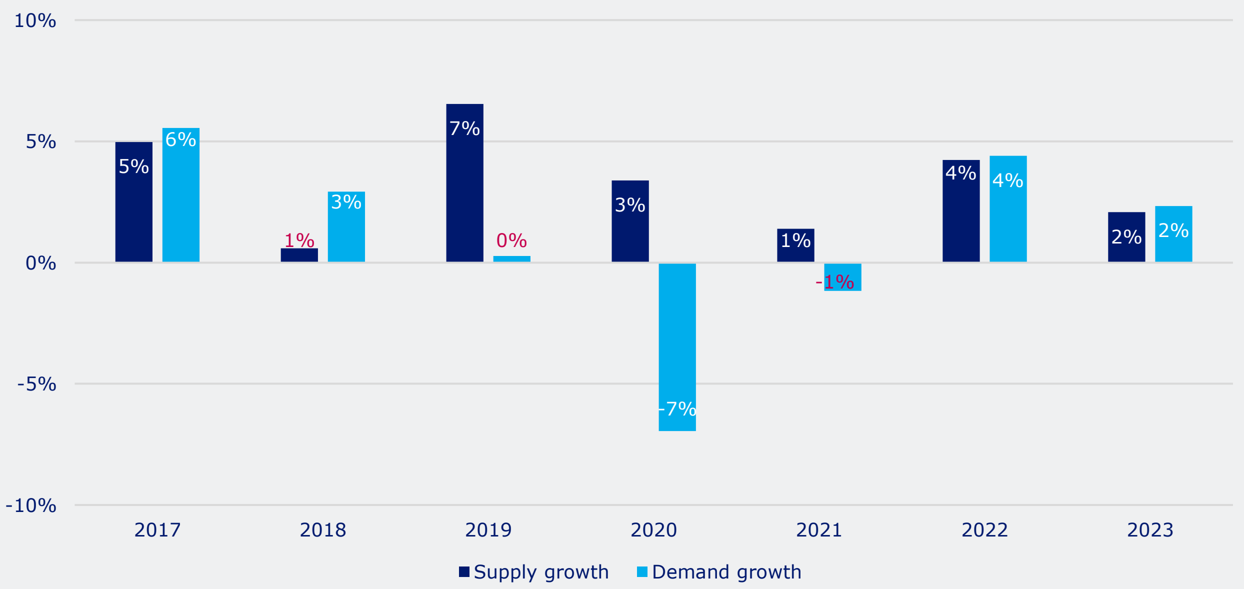
SUPPLY-DEMAND IMBALANCE IS EXPECTED TO DRIVE EARNINGS HIGHER FOR ALL SUBSEGMENTS

If oil demand continues to increase up until 2030 (as is currently projected by S&P Global), then the supply of vessels may run short. Contracting has almost stalled due to uncertainty over future fuels and risks of stranded assets, and the orderbook-to-fleet ratio is at an all-time low. Given that no more vessels are contracted, around 270-280 newbuilt Crude Tankers may be needed by 2030, with an especially pressing need for VLCCs. This may push freight rates even higher. Furthermore, 40% of the current Crude Tanker fleet does not have a scrubber installed, nor an eco-electronic engine. These vessels will likely have to reduce their operational speeds in order to comply with the upcoming EEXI/CII regulations. As such, we may also see a reduction in the active fleet.

ALTHOUGH OIL DEMAND IS EXPECTED TO INCREASE, THE MARKET REMAINS RATHER FRAGILE

The global oil market is rather fragile. Historically, an imbalance of 2 mbpd (approximately 2%) has caused the global oil market to crash. The current high prices are increasing the incentive to drill for new oil and boost global oil supply. However, oil demand could be hit by an upcoming global recession or the push towards renewable energy. Consequently, we may see more frequent periods of increased oil price volatility.

SUPPLY AND DEMAND BALANCE (DWT AND TONNE-MILE)



Source: Clarksons, Alphatanker, Danish Ship Finance

CRUDE TANKER FLEET OUTLOOK

While shipowners stay away from the newbuild market, they may instead invest more in keeping older vessels running

The orderbook continues to shrink, as shipowners are still refraining from contracting new vessels. Hence, limited fleet growth is expected in the short to medium term, with sanctions also reducing the active fleet.

FLEET GROWTH IS EXPECTED TO REMAIN LOW FOR SOME TIME

The orderbook has continued to decline since our last report, reaching an all-time low of 5% of the fleet. Based on the current orderbook, the fleet is set to expand by 4.6% in 2022, 2.2% in 2023 and a mere 0.2% in 2024 before scrapping. Fleet growth may periodically be offset by vessels going for hull surveys and scrubber retrofits. This is estimated to offset fleet growth by 2% in 2022 and 1.5% annually in 2023 and 2024, leading to a periodical reduction of the fleet in 2024.

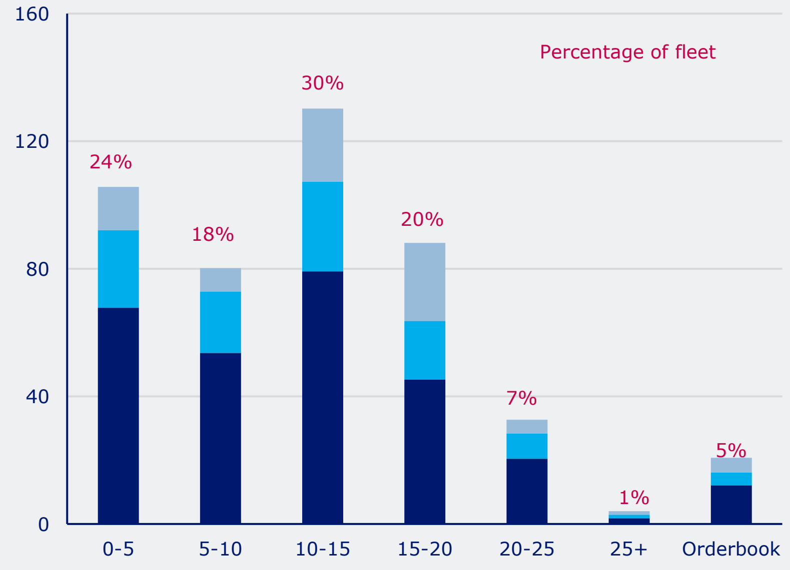
HIGH EARNINGS WILL LOWER THE INCENTIVE FOR SCRAPPING

Demolition activity has remained relatively low in 2022, with 22 Crude Tankers scrapped so far. This corresponds to 0.8% of the fleet. Crude Tanker vessels older than 20 years account for 8% of the fleet. By next year, this ratio will have risen to 13%, while by 2025 these vessels will account for 20% of the fleet (given no more Crude Tankers are ordered). Even though a large part of the fleet is ageing, we expect scrapping to remain low in the short to medium term, as higher demand will boost earnings.

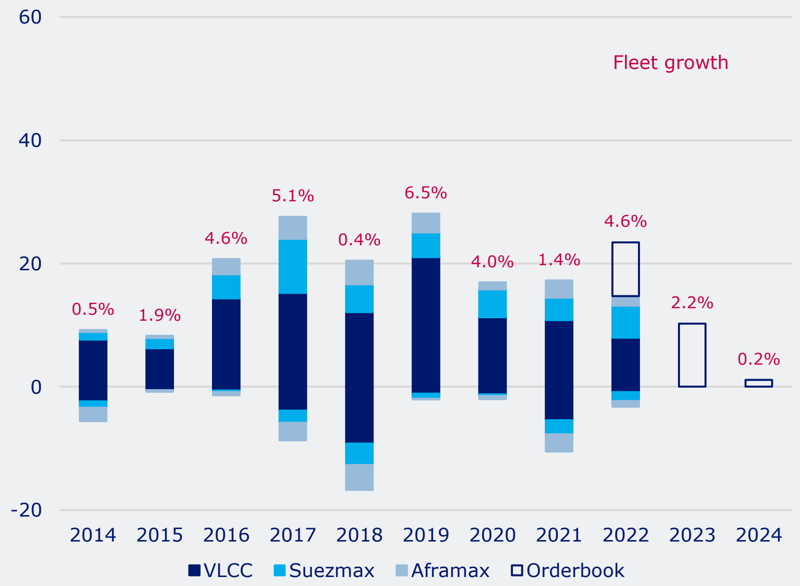
MORE VESSELS COULD JOIN THE SHADOW FLEET

The EU has already planned an oil embargo on Russian oil, which is due to take effect in December 2022. On top of this, the G7 and EU countries have agreed to implement a price cap on Russian oil exports. However, if Russia decides to ignore these sanctions, we may see vessels transporting Russian crude isolated from the international insurance market. As such, the so-called "shadow fleet" – Tankers moving sanctioned oil outside the insurance market – could increase. By September 2022, 425 Aframaxes and Suezmaxes had loaded crude oil from Russian ports. Of these, 41 were Russian owned. We may therefore see many of the older Crude Tankers joining the shadow fleet in the coming years. Some Crude Tankers currently carrying Iranian oil might also shift their focus towards transporting Russian oil. An increase in the shadow fleet will generally lower the cargo-carrying capacity of the active Crude Tanker fleet.

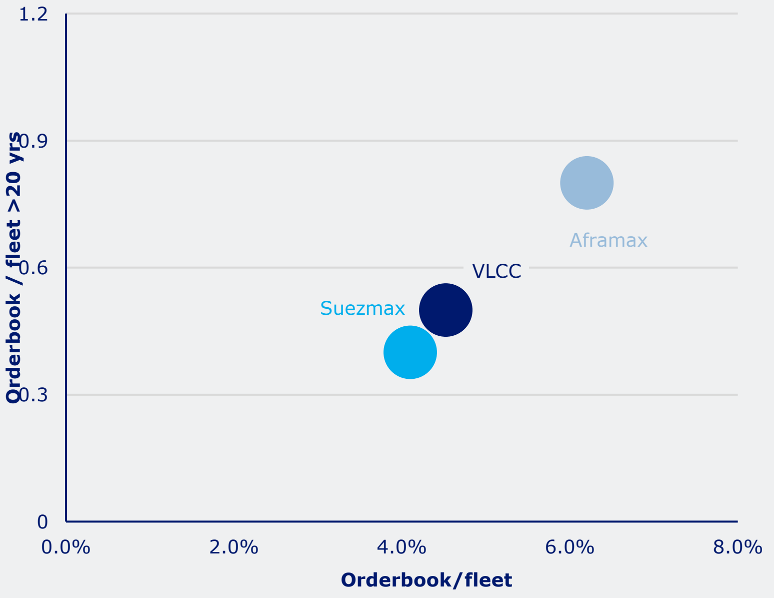
AGE DISTRIBUTION (MILLION DWT)



FLEET DEVELOPMENT (MILLION DWT)



FLEET RENEWAL POTENTIAL (DWT)



Source: Clarksons, Danish Ship Finance

FLEET DEEP DIVE: INCREASING ECONOMIC LIFETIMES OF CRUDE TANKERS?

If demand increases without any new ships coming in, we may see economic lifetimes increase at the expense of efficiency

The limited contracting activity coupled with upcoming regulations is putting pressure on the current Crude Tanker fleet. If demand continues to increase up to 2030, we may see economic lifetimes lengthen.

PRESSURE ON THE CURRENT FLEET IS MOUNTING

Various factors are ramping up pressure on the current Crude Tanker fleet. The stalled contracting activity and low orderbook limit the potential future supply growth. Moreover, upcoming GHG regulations (EEXI and CII) are expected to have implications for the active fleet, as some vessels will have to reduce operational speeds and go for retrofits in order to be compliant.

40% OF THE FLEET IS NON-ECO AND NON-SCRUBBER

Today, around 40% of the fleet is either not fitted with a scrubber or does not have an eco-electronic engine installed. Many of these vessels are at risk of being non-compliant with the upcoming EEXI/CII regulations. The first step for these vessels will be to improve their efficiency scores through operational optimization. However, at some point certain vessels may also need to undergo retrofits in order to stay competitive. Around half of the 40% are under 15 years of age. These could be potential candidates to undergo retrofitting for new engine parts or other design or propulsion-related measures. As such, future fleet growth may periodically be offset by even more than the previously mentioned 1.5-2% (due to already planned hull surveys and scrubber retrofits).

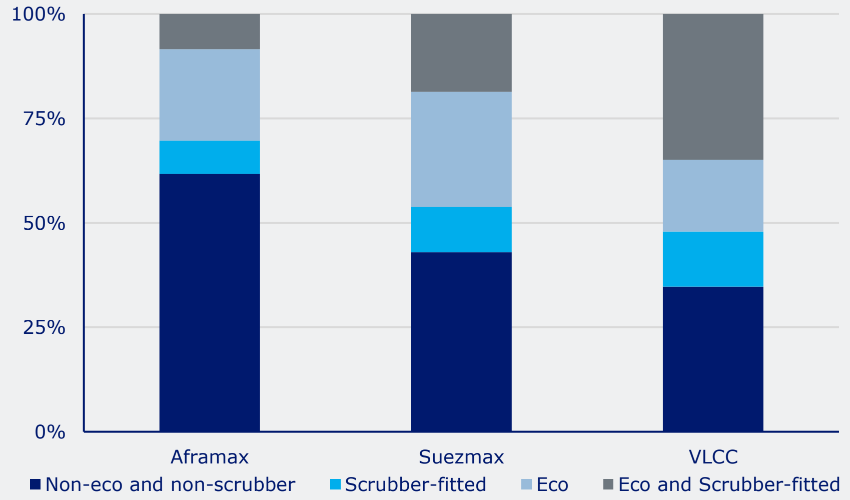
270-280 MORE VESSELS COULD BE NEEDED BY 2030

S&P Global currently projects global oil demand to increase by a little over 11 mbpd to 111 mbpd from 2022 to 2030, given that the global economy does not fall into a deep or lasting recession. A large part of this growth will be driven by non-OECD countries, as the middle class is increasing and demand for petrochemicals will remain high. The additional barrels are expected to be transported by sea, as infrastructural investments in pipelines and railways seem unlikely given concerns over energy security. Assuming the current shift towards long-haul crude oil trades continues and given the changing refinery landscape, an additional 380 Crude Tankers may be needed in 2030, of which 190 would be VLCCs. The current orderbook is expected to push 102 Crude Tankers out onto the sea by 2026, but around 270 more vessels would still be needed.

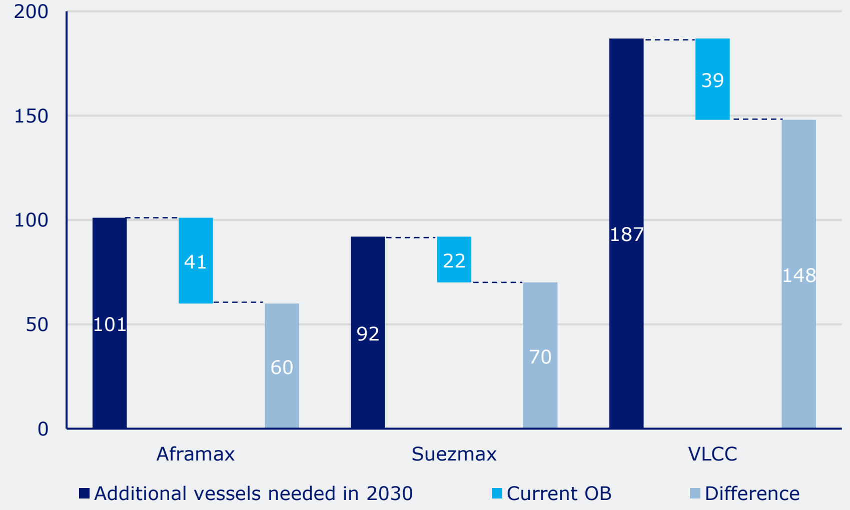
ECONOMIC LIFETIMES MAY INCREASE BY 6-8 YEARS

Demolition activity was relatively low in the first nine months of 2022, with 3.4 million dwt scrapped (0.8% of the fleet). Increasing demand coupled with limited supply growth and higher earnings is expected to keep demolition activity low in the near term. Furthermore, some shipowners are likely to hold on to their old vessels in order to cash in on earnings. Given that we may need around 270 more vessels by 2030, the economic lifetimes of current Crude Tanker vessels would have to increase by up to six to eight years to an average scrapping age of 27-29 years, assuming no further vessels are contracted or demolished.

CRUDE TANKER FLEET ECO AND SCRUBBER FITTED (% OF FLEET)



VESSELS REQUIRED IN 2030 (NO. OF VESSELS)



Source: Clarksons, S&P Global, Alphatanker, Danish Ship Finance

CRUDE TANKER DEMAND OUTLOOK

Demand is expected to grow in the short to medium term, but we are also seeing indications of increases in the longer term

Demand is expected to increase in the short to medium term. Right now, Aframax and Suezmaxes are benefiting, but VLCC rates are also expected to rise.

GLOBAL OIL DEMAND SET TO INCREASE BY 2.3 MBPD IN 2023

Global oil demand is expected to increase by around 2% annually in 2022 and 2023, given the global economy is not hit by a deep recession. The growth in 2022 is partly being driven by the rapid recovery in travel activity in OECD countries. Furthermore, high natural gas prices have propelled a gas-to-oil switch in Europe. In September 2022, natural gas spot prices were almost double the price of crude oil (measured in MMBtu). Growth in 2023 is set to be driven by non-OECD countries, as the Chinese economy is expected to recover from Covid-related consequences.

RUSSIAN PRODUCTION IS EXPECTED TO BE HIT BY SANCTIONS

EU sanctions on Russian barrels will come into effect by the end of 2022. Most likely, Russia will ship more to China and India, but the sanctions are also expected to hit sales of Western technology to the Russian oil industry. This may reduce Russian production by a little over 1 mbpd up until 2023, which will affect demand for Aframax Tankers. The US is expected to boost crude oil production by more than 1 mbpd by the end of 2023 as shale producers take advantage of the current high oil prices. VLCCs will benefit from the increase, as they transport almost half of US seaborne crude exports.

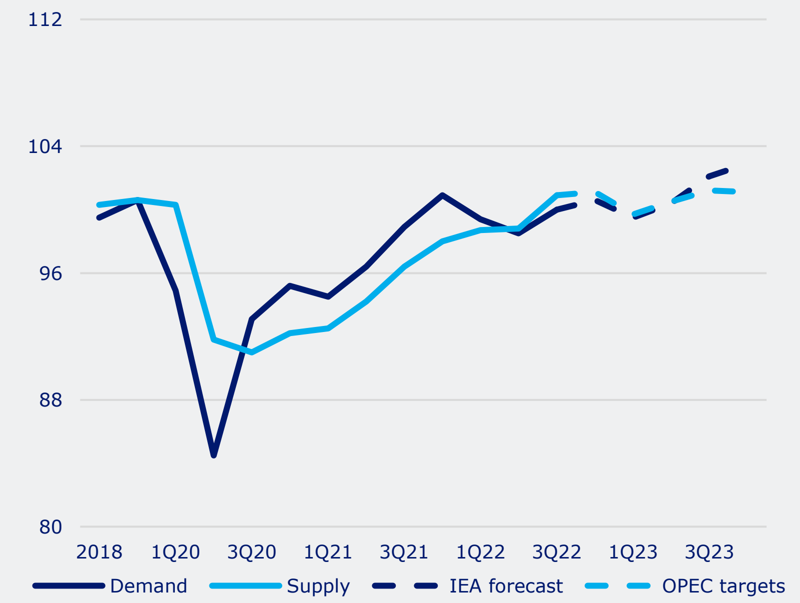
OPEC+ HAS CUT PRODUCTION BY 2 MBPD

OPEC+ has cut production by 2 mbpd, which could reduce demand for VLCCs. In 2022, 70% of crude volumes transported by VLCCs have been loaded in the Middle East. But OPEC+ had already been undershooting its initial targets by some 3 mbpd. Hence, the agreed production cut may not have much impact on Crude Tankers after all.

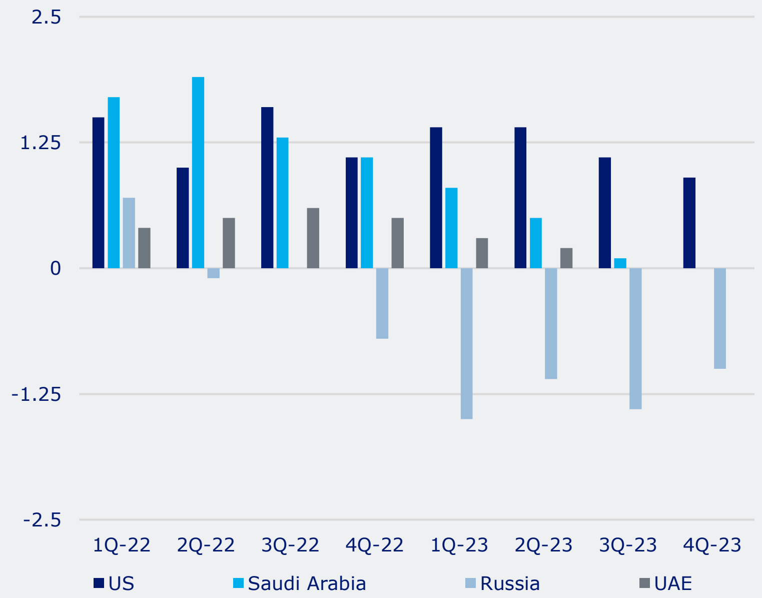
UPSTREAM INVESTMENT INCREASING

Investment in greenfield activities in 2021 has – for the first time since 2014 – overtaken investment in brownfield activities. Greenfield investment is expected to increase by 29% from 2022 to 2025 before dropping again due to increased focus on renewables. The shift in focus towards greenfield investments indicates that concerns over energy security have awakened interest in securing future oil supplies – especially in Europe.

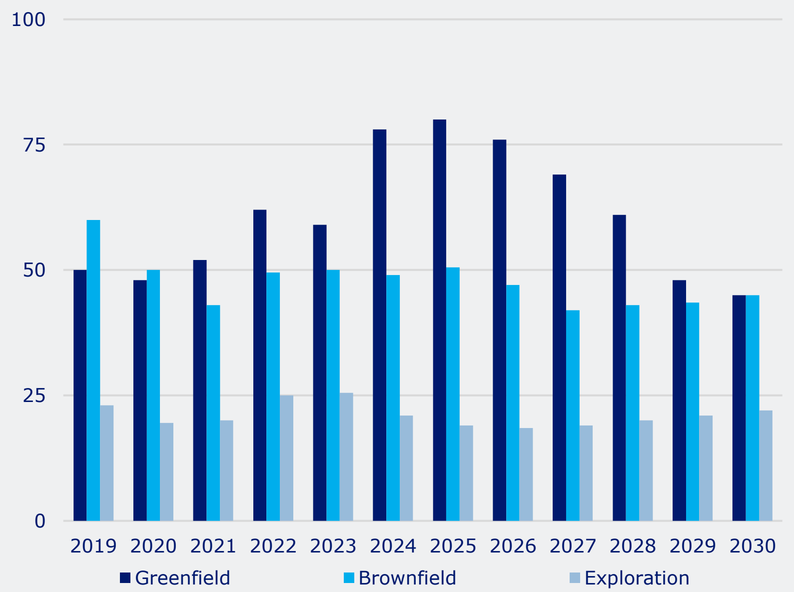
OIL SUPPLY AND DEMAND FORECAST (MILLION BPD)



Y-O-Y GROWTH IN OIL PRODUCTION (MBPD)



UPSTREAM OIL AND GAS EXPENDITURE (USD BILLION)



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

DEMAND DEEP DIVE: HOW FRAGILE IS THE CURRENT OIL MARKET?

The current oil market is fragile, but the Tanker market may be more robust due to the changing trade flows

Historically, small variations in the supply-demand balance have tipped oil prices. However, the Tanker market seems to be more resilient to these this time.

GLOBAL OIL SUPPLY IS CONTROLLED BY A FEW PLAYERS

Global oil demand has generally followed the same trends as the global economy. When economic activity rises, we usually see transport activity pick up and higher demand for fuel oil from industry, etc. Conversely, global oil supply is controlled by a handful of countries with the capability of adjusting output quickly.

IMBALANCE OF 2 MBPD CAN MAKE A DIFFERENCE

Historically, crude oil prices have seen a y-o-y decline of more than 20% when global oil supply has exceeded demand by around 2 mbpd. Amid the deregulation of the US oil industry in 1981, we saw prices decline by 71% over the next six years. The average oil stock build-up before this price crash was around 1.5 mbpd, which accounted for 2-3% of the global oil market. During the 2014 crash, we saw crude oil prices drop by 63%. Before this price crash, we saw an average stock build-up of 2.45 mbpd. Hence, it does not take a lot for the market to turn drastically and for prices to drop.

THE OIL MARKET BALANCE COULD EASILY BE TIPPED

Current short-term projections show that the oil market will be in balance by 2023. However, there are various risks to these projections. A drop in the global economy of 2-3% could cause prices to fall drastically. Supply gluts also pose a risk to the market. If sanctions on Iran are lifted, it is expected to reach its full production capacity of 3.8 mbpd within a year. Likewise, oil production in the US is set to increase significantly, as current price levels have incentivised private shale producers to boost output. This could flood the market with extra barrels which may in fact not be needed.

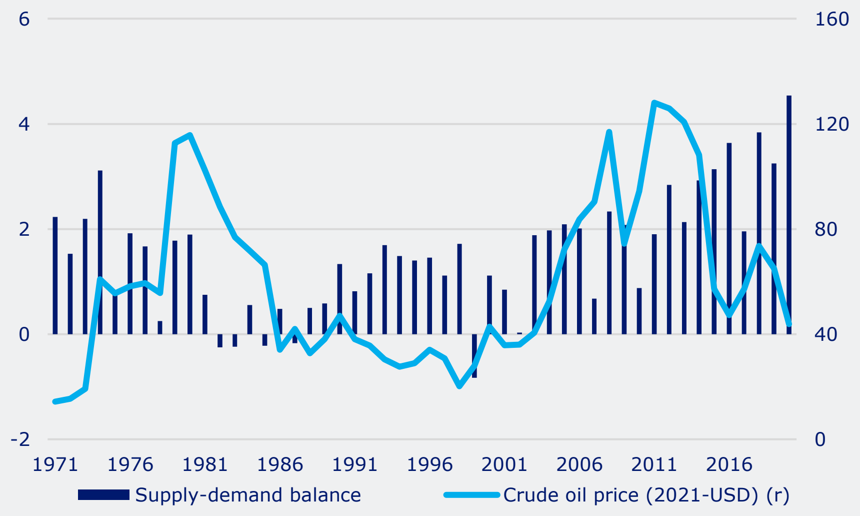
PEAK OIL IS MOVING CLOSER

The concept of peak oil production has been discussed throughout the past many decades. Traditionally, peak oil production has been expected to occur 30-40 years after the time of prediction. However, in recent years (and especially in 2022), many of the major energy organisations, financial institutions, etc. have predicted that the peak will occur in the first few years of the 2030s. Peak oil has moved closer as growing concerns over energy security have stimulated higher investments in renewables. This is partly also why shipowners have held back from contracting new vessels.

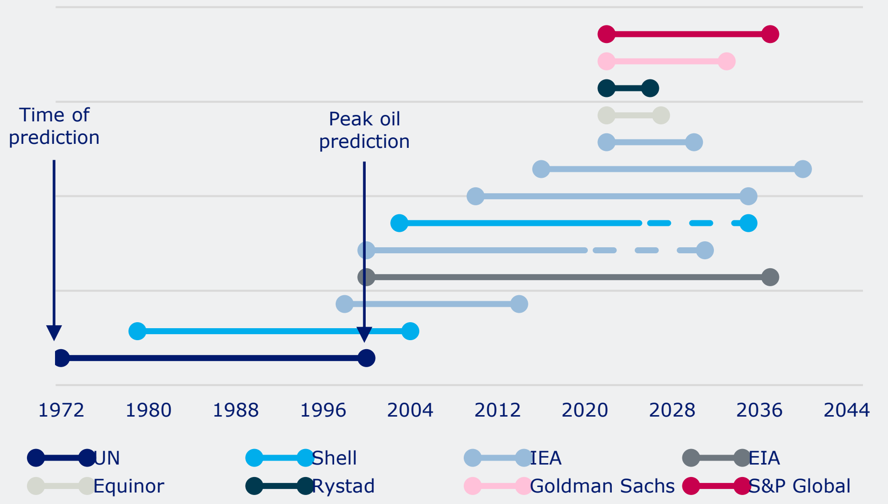
TANKERS MAY NOT BE AFFECTED IF DEMAND FALLS

Although the global oil market is facing various risks in terms of oversupply and falling demand, this may not have much impact on Crude Tankers. The upcoming Western sanctions on Russian oil will likely create a fragmented market. Russian barrels will increasingly be transported to Asia and Africa, while Europe is expected to import more from the US and Middle East. As such, long-haul voyages are expected to boost tonne-mile demand, even though we may not see an increase in volumes.

GLOBAL DEMAND-SUPPLY BALANCE (MBPD) AND OIL PRICES (USD)



ESTIMATES FOR THE TIMING OF PEAK OIL PRODUCTION



Source: IEA, Nasdaq, EIA, Shell, Rystad, UN, Equinor, Goldman Sachs, S&P Global, Danish Ship Finance

PRODUCT TANKER

PRODUCT TANKER

Strong market fundamentals and all-time-high earnings for Product Tankers

The Product Tanker market has experienced a rapid increase in demand, driven by a rebound in global oil demand coupled with changing seaborne trade flows of refined products. Low fleet growth has enabled increased fleet utilisation, which has boosted average earnings close to all-time highs. Despite recession fears, demand is expected to increase further in the short and medium term, driven by the ongoing shift towards more long-haul trading. Furthermore, new high-capacity refinery facilities are due to come online in the next few years, easing the tightness in the oil market and increasing seaborne trade of refined products. High earnings are expected to increase contracting activity from current low volumes. Still, a more fragmented oil market, due to the upcoming sanctions, may reduce fleet productivity.

FREIGHT RATES AND SECONDHAND PRICES

Product Tanker earnings have grown significantly across all subsegments and are now close to all-time-high levels. Longer voyage distances and low fleet growth have strengthened fleet utilisation. MR Tankers have seen increased activity in the Atlantic Basin, while LR Tankers have benefited from more long-haul routes from the Middle East and Asia to Europe.

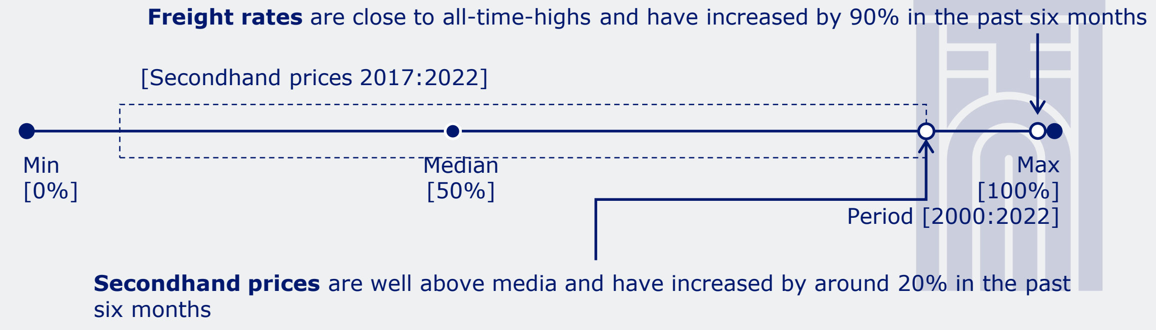
LR2: Higher trade activity from the Middle East to Europe and Asia has increased demand for LR2 Tankers. The one-year timecharter rate has risen by 62% in the past six months, reaching USD 32,000 per day. The price of a five-year-old LR2 Tanker has increased by 20% in the same period, to USD 60 million.

LR1: Average travel distances have not increased significantly for LR1 vessels, but fleet utilisation has strengthened on the back of high Indian imports of refined products. The one-year timecharter rate has risen by 136%, to USD 37,500 per day (surpassing that for LR2 Tankers). The price of a five-year-old vessel has increased by 26%, reaching USD 44 million.

MR: Greater long-haul activity for MR Tankers has pushed the one-year timecharter rate up by 79%, to USD 27,500 per day. The price of a five-year-old vessel has increased by 20%, to USD 39 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2022



Tonne-mile demand grew by around 7% in the first ten months of 2022. Seaborne volumes increased, but the primary driver of demand was longer average voyage distances for MR and LR2 Tankers. Fleet utilisation strengthened in the period, as the fleet expanded by a mere 1.1%. Average speeds also grew by 1.5% but had only a minor impact on fleet utilisation.

Deliveries decreased from 6.2 million dwt in the first ten months of 2021 to 3.8 million dwt in the same period in 2022 (2% of the fleet). An additional 1.8 million dwt is due to be delivered during the fourth quarter of 2022.

Scrapping also slowed during the first ten months of 2022. Around 1.7 million dwt was demolished in the period, half the volume scrapped in the same period in 2021.

Contracting has reached a six-year low, with only 2.7 million dwt contracted so far in 2022. In the past three months, only six Product Tankers have been ordered.

Orderbook: 9 million dwt is currently on order, an 8% drop since the start of the year. The orderbook represents just 5% of the fleet.

Demand: Volumes have increased by 2% so far in 2022 compared to 2021, driven by a rebound in travel activity. Seaborne trade volumes have grown, but they are still below 2019 levels.

Travel distances have increased significantly in 2022, due to changing trade flows on the back of the Russia-Ukraine war. MR Tankers have seen more long-haul activity across the Atlantic Basin.

MARKET DYNAMICS IN THE LAST SIX MONTHS

Longer travel distances are driving the freight rate recovery

Tides have turned for the Product Tanker market owing to the upcoming sanctions against Russia and a tight oil market. Earnings have skyrocketed across all segments.

TONNE-MILE DEMAND HAS SURPASSED PRE-PANDEMIC LEVELS

Demand has increased significantly in 2022, as the Russia-Ukraine war and global imbalances in supply chains have continued to extend average voyage distances. Tonne-mile growth has surpassed 2019 levels for all subsegments, especially for MRs and LR2s. The US has become one of the top load destinations for MRs in 2022, primarily at the expense of Russian ports. 13% of total refined product volumes transported on MRs have been loaded in US ports. LR2s have experienced increased activity on the Middle East to Asia routes.

GLOBAL INVENTORIES ARE STILL RUNNING LOW

Global oil production has been on the rise, but inventories of both refined products and crude oil are still running at a five-year low. Global crude throughput at refineries increased by 2.3 mbpd year-on-year in Q3-22 and is expected to reach pre-pandemic levels in Q4-22 (partly also due to seasonal factors). However, US commercial stocks of refined petroleum products have still declined by 1%. This is excluding the release of 180 million barrels from the Strategic Petroleum Reserve. As such, build-up of global inventories may increase demand for Product Tankers.

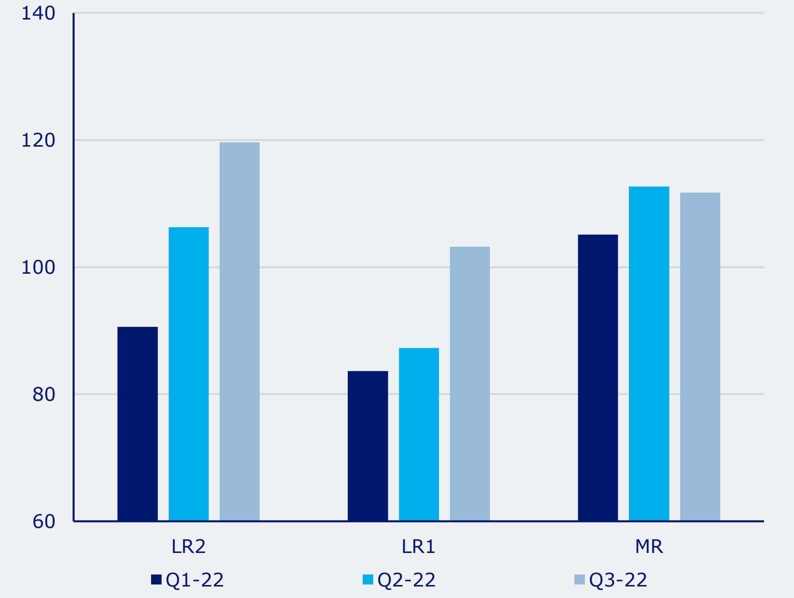
ELECTRIC CAR SALES HAVE BOOMED IN 2022

Global EV sales have boomed in 2022, with sales in the first half of 2022 increasing by 62% compared with the same period last year. This was in spite of global average electricity prices doubling in the same period. The ongoing electrification of the car industry (particularly in OECD and to some extent in China) has started affecting demand for gasoline and diesel negatively in these regions.

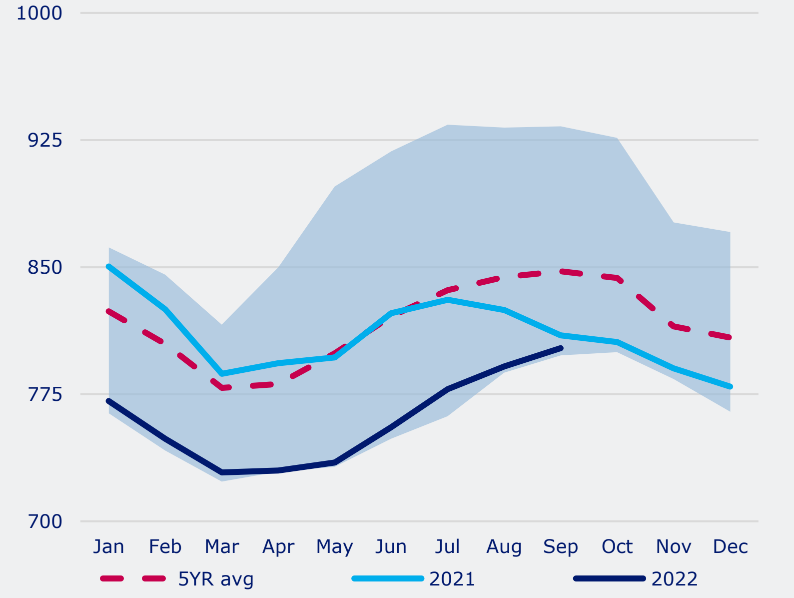
LONG WAY TO GO IN THE MOVE AWAY FROM RUSSIAN OIL

European imports of Russian refined products have almost halved since the start of the Russia-Ukraine war, going from 40% to 23% in October 2022. The lower imports have largely been substituted by refined products from the Middle East, US and Asia. Although Russian imports are on a downward trajectory, they are still by far Europe's largest source of refined products.

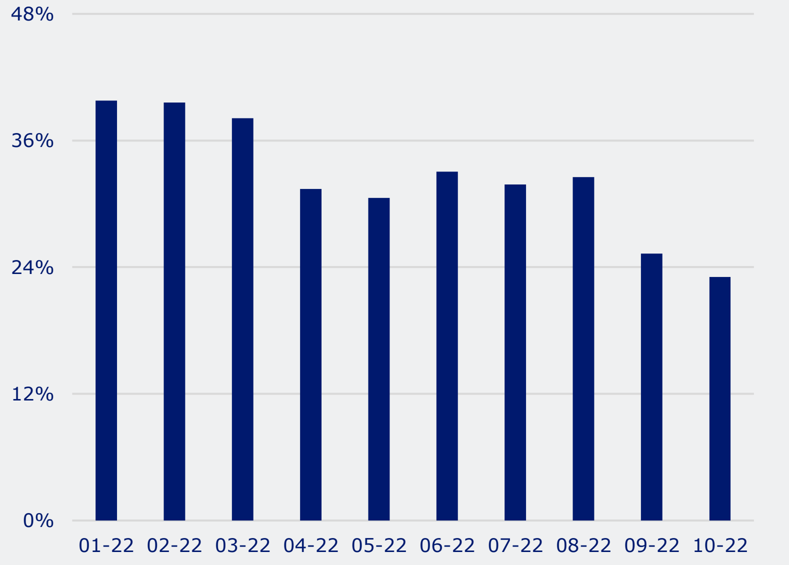
TONNE-MILE GROWTH BY SUBSEGMENT (2019=100)



US STOCK OF PETROLEUM PRODUCTS (MILLION BARRELS)



EUROPEAN SEABORNE IMPORTS OF RUSSIAN PRODUCTS (%)



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

SUMMARY: PRODUCT TANKER MARKET OUTLOOK

Low fleet growth and longer travel distances are shaping the market outlook

Longer trading routes and a tight Product Tanker market have driven earnings to record levels. Low fleet growth and a further shift towards long-haul trade routes are expected to keep earnings high in the short to medium term. Larger vessels in particular will benefit. Earnings may be supported further by a decline in fleet productivity, as a more fragmented oil market is expected to lower the fleet's cargo-carrying capacity by increasing the time spent on ballast voyages.

PRODUCT TANKER DEMAND IS EXPECTED TO INCREASE DRIVEN BY LONGER DISTANCES

Similar to the Crude Tanker market, tonne-mile demand for Product Tankers is expected to increase in the short to medium term. The primary driver of the growth will be longer average voyage distances. Seaborne oil products trade (in volumes) is projected to increase by 2.4% in 2022 and 3.3% in 2023, while distance-adjusted demand is set to increase by 8% in both years. Voyage distances are set to increase, as the upcoming European sanctions will shift part of the MR Tanker fleet from trading short-haul routes (Russia-Europe) towards more long-haul trades such as the US-Europe or US-South America routes. LR2s are also expected to benefit from long-haul trades of middle distillates from Asia to Europe.

LOW FLEET GROWTH IN THE SHORT TERM BUT CONTRACTING ACTIVITY LIKELY TO INCREASE

The orderbook is at an all-time low due to limited yard availability and a complex long-term fuel outlook that increases the risk of stranded assets. The fleet is scheduled to increase by 3% in 2022 and 2% in 2023. New vessels are likely to be ordered on the back of the strong market. The tight market has lifted secondhand prices, in particular for older vessels. Secondhand vessels are now being traded at a premium to the newbuilding price parity. This may further encourage shipowners to contract new vessels.

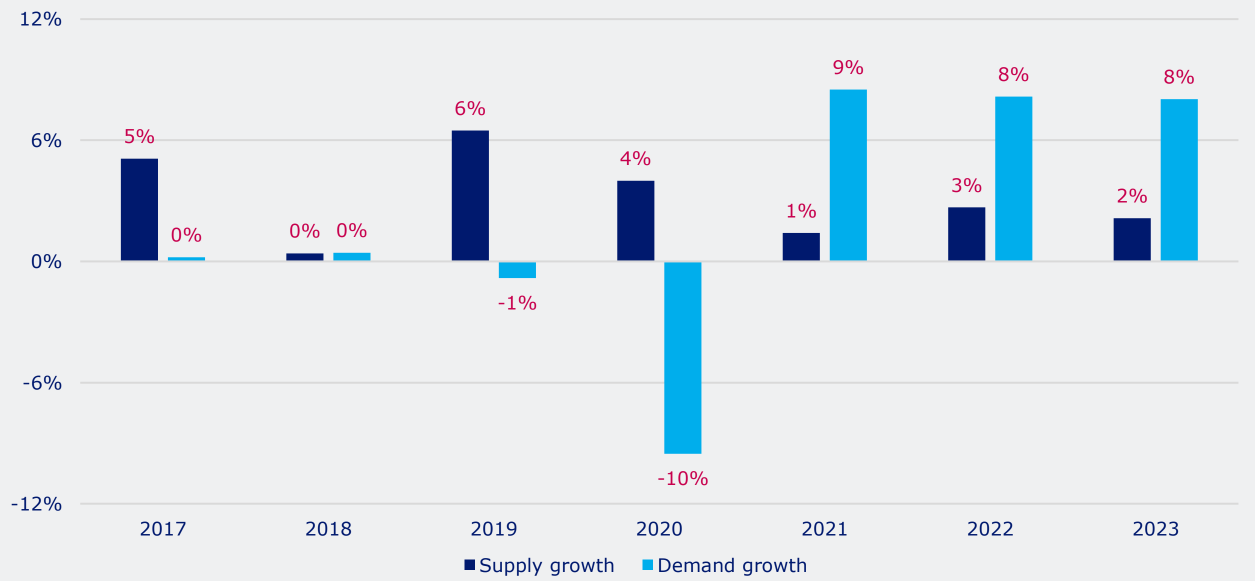
TIGHT AND FRAGMENTED OIL MARKET MAY DAMPEN FLEET PRODUCTIVITY

A more fragmented oil market, due to the sanctions imposed on Russian oil, is expected to reduce the fleet's productivity. Sanctions on cargo volumes are reducing the fleet's ability to optimise trading patterns by increasing ballast distances and lowering the fleet's combined cargo-carrying capacity. This may not affect individual vessels' CII ratings negatively (as the actual cargo is not used in the calculation), but it is lowering the efficiency of the fleet and cargo owners may penalise individual vessels for their EEOI ratings.

CHANGES IN THE REFINERY LANDSCAPE WILL BENEFIT LARGER PRODUCT TANKERS

In the coming years, new high-capacity refinery facilities are expected to come online in the Middle East and China. The added capacity in the Middle East will benefit larger Product Tankers at the expense of Crude Tankers. This added capacity is expected to fulfil a large part of Europe's oil products needs once old and inefficient European refineries close. Capacity increases in China will likely benefit both MR and LR Tankers.

SUPPLY AND DEMAND BALANCE (DWT AND TONNE-MILES)



Source: Clarksons, Alphatanker, Danish Ship Finance

PRODUCT TANKER FLEET OUTLOOK

A low orderbook and limited yard availability at top-tier yards until 2025 bode well for earnings in 2023 and 2024

A low orderbook will limit fleet growth in 2023 and 2024, but higher earnings and secondhand prices are likely to encourage more owners to contract new vessels for delivery in 2025 and beyond.

LOW ORDERBOOK TO LIMIT FLEET GROWTH IN THE SHORT TERM

The current orderbook corresponds to only 5% of the fleet, which is the lowest level seen since 1996. The fleet is set for gross expansion of 3% in 2022, 2.1% in 2023 and 0.9% in 2024. The active fleet will temporarily be reduced by 1.8% in 2022 and 1.5% in 2023 and 2024, when vessels are taken out for special surveys and scrubber retrofits.

HIGH EARNINGS MAY ENCOURAGE MORE CONTRACTING...

Earnings have almost tripled since the start of the Russia-Ukraine war. Balance sheets have strengthened, as the average market value of the fleet has increased by almost 30% since January 2022. Contracting may be fuelled further by the fact that secondhand prices are currently trading at a premium to newbuilding prices (which was not the case in January 2022).

...BUT YARD AVAILABILITY REMAINS LIMITED

While ordering is expected to increase, low yard capacity at top-tier yards until 2025 curtails the fleet's growth potential for 2023 and 2024. Only 20 vessels have, so far, been ordered in the second half of 2022 (0.6% of the fleet). The orders have primarily been contracted at yards that have previously been considered second-tier. The most recent order is scheduled for delivery in 2025.

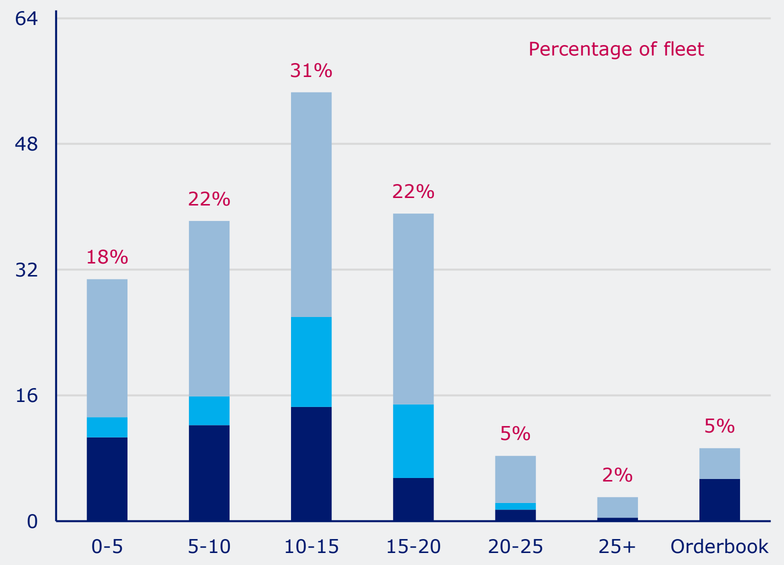
OWNERS EXPECTED TO LOCK VESSELS INTO LONGER CONTRACTS

Tanker vessels typically trade in the spot market. However, high earnings and a tight market are likely to incentivise owners to lock more vessels into long-term charter contracts. In the long term, the transition towards alternative fuels could see more vessels entering into long-term contracts to balance their fuel commitments with their earnings commitments.

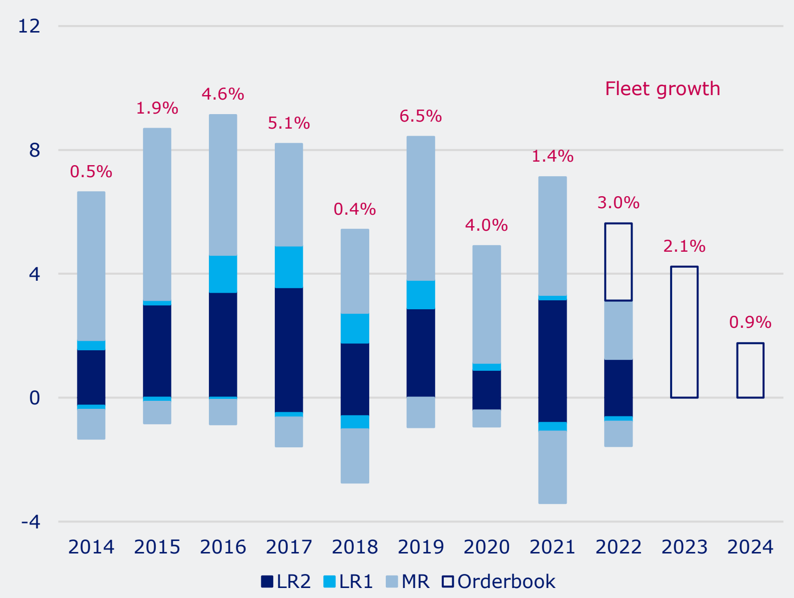
2% OF THE PRODUCT TANKER FLEET IS RUSSIAN-OWNED

Around 2% of the fleet and 1.5% of the orderbook are Russian-owned. These vessels are likely to join the Product Tanker shadow fleet, thereby lowering their potential to transport cargo from other ports. This could reduce the active fleet further.

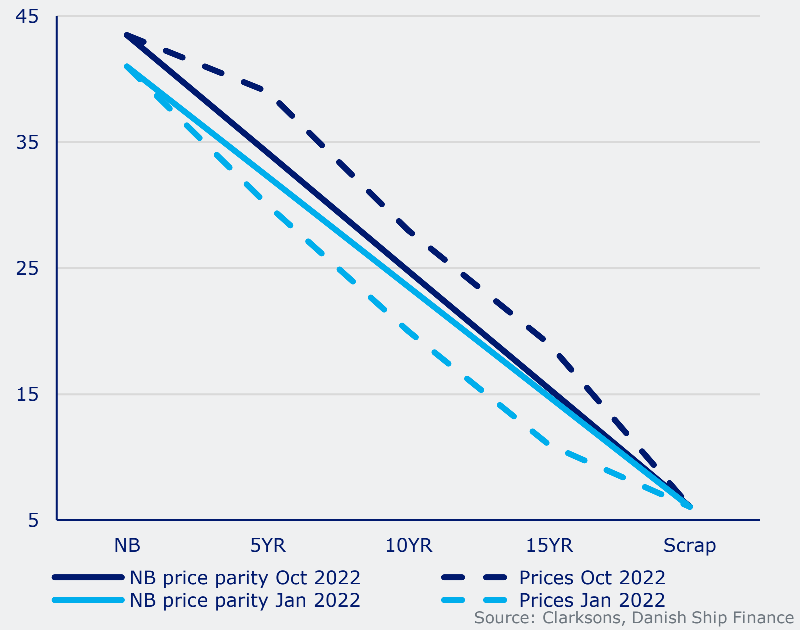
AGE DISTRIBUTION (MILLION DWT)



FLEET DEVELOPMENT (MILLION DWT)



MR NB PARITY VS. SECONDHAND PRICES (USD MILLION)



Source: Clarksons, Danish Ship Finance

PRODUCT TANKER DEMAND OUTLOOK

Demand is expected to grow modestly in 2023, but longer travel distances are likely to support freight rates

Shifting trade flows and a changing refinery landscape are expected to support distance-adjusted demand for Product Tankers in 2023 and 2024. Larger vessels are set to benefit the most.

TRAVEL ACTIVITY EXPECTED TO DRIVE GROWTH...

Oil demand is projected to surpass 2019 levels by Q1-23. Growth in 2022 will primarily have been driven by a rebound in jet fuel demand in OECD countries. Domestic and international travel in OECD is projected to reach around 90% of 2019 levels in 2022, while Asian demand (mainly China) remains low due to lockdowns.

...BUT A RECESSION WILL LIKELY HIT TRAVEL DEMAND FIRST

The global macroeconomic outlook is deteriorating. High energy and food prices are increasing the cost of living and exposing US and European consumers to periods of low or even negative economic growth in 2022 and 2023. Many Asian economies, including China's, are also experiencing periods of very low economic growth. Travel activity is likely to decline and is expected to see reduced demand. But the Product Tanker market seems to be sheltered if volumes fall, supported by longer voyage distances.

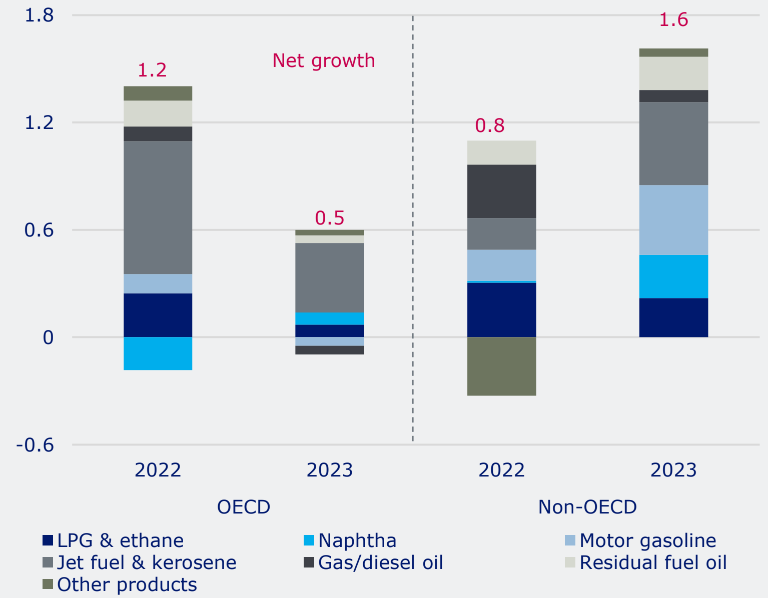
LARGER VESSELS TO BENEFIT FROM NEW REFINERY CAPACITY

New refinery facilities are expected to add more than 4 mbpd to global refinery capacity in 2022 and 2023. The Middle East and China account for about 75% of the expansion. Old refineries in Europe and the US are expected to close, eventually, but the current high margins may mean the capacity adjustment is postponed. LRs are set to benefit from longer travel distances when capacity is closed, since more volumes are likely to be transported between the Middle East and Europe. In 2022, the Middle East has accounted for about 30% of global loadings that were transported by LR1s and LR2s.

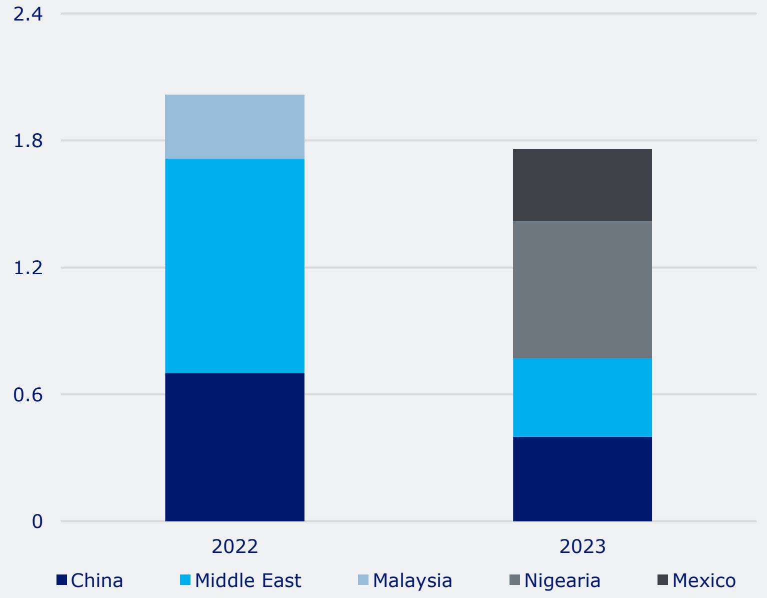
CHINA COULD BOOST EXPORTS BY 50-60% IN THE NEAR TERM

Chinese imports of refined oil products could increase in 2023 and 2024 if domestic refineries do not raise their utilisation beyond the 74% that is currently expected. State-owned refiners have proposed hiking utilisation rates by around 10 percentage points in response to the allocation of higher export quotas. This could increase Europe's imports of Chinese diesel. In either case, demand for Product Tankers is likely to benefit.

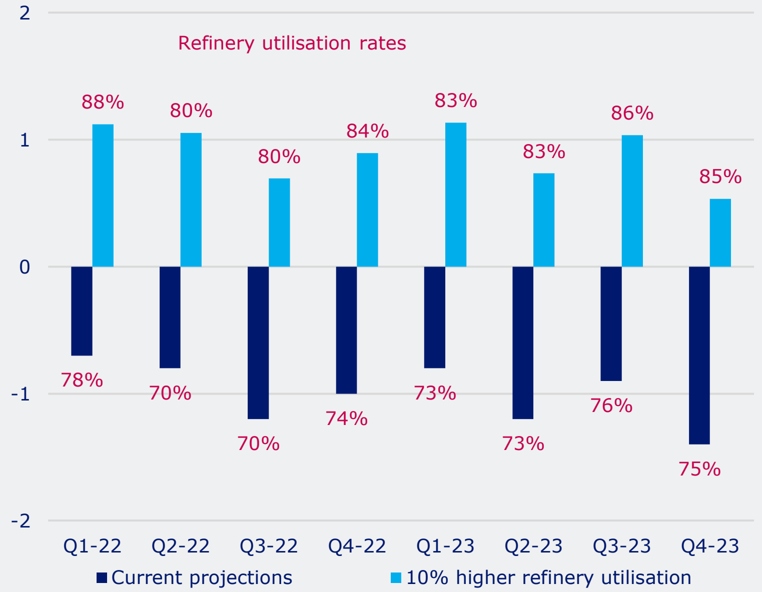
GROWTH IN REFINED PRODUCTS DEMAND BY REGION (MBPD)



SELECTED NEW REFINERY FACILITIES (MBPD)



CHINA'S IMPLIED REFINED PRODUCTS STOCK CHANGE (MBPD)



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

DEMAND DEEP DIVE: FRAGMENTED MARKET MAY REDUCE FLEET PRODUCTIVITY

Market fragmentation is likely to support healthy fleet utilisation and strong earnings

A more fragmented oil market is expected to increase time spent on ballast voyages, constraining fleet productivity. In an already tight market, this may drive earnings even higher, while it may be negative for the fleet's overall emissions.

AVERAGE PRODUCT TANKER EARNINGS UP BY 300%

Since the start of the Russia-Ukraine war, average Product Tanker earnings have increased by over 300%. Earnings are higher across all subsegments. The significant rise in earnings can be attributed to the sudden recovery in demand coupled with the changing trade flows of refined products.

THE MOVE TOWARDS A MORE FRAGMENTED MARKET...

The upcoming Western sanctions on imports of refined products from Russia will likely create a more fragmented market. Similar to the Crude market, refined products from Russia will increasingly be shipped to Asia, while Europe will import more from the Middle East, the US and Asia. In other words, Product Tanker demand will be driven by increased long-haul trade.

...WILL LIKELY KEEP NUMBER OF BALLAST DAYS HIGH

Product Tankers transporting Russian oil products may benefit from higher freight rates (due to higher risk premiums), but they may also be barred from loading or discharging at Western ports. Furthermore, a tight and fragmented global oil market may necessitate long ballasting voyages, thereby reducing the fleet's cargo-carrying capacity.

BALLAST VOYAGES MAKE UP HALF OF THE TIME AT SEA

During 2021, ballast voyages accounted for 52% of the time spent at sea by Product Tankers on average. This was an increase of 3 percentage points from 2019. The high levels in 2021 were due to low demand and fleet utilisation. However, even though demand has recovered significantly since then, ballast voyages continue to make up a large part of the total time spent at sea. In Q3-22, ballast voyages accounted for 51% of the time spent at sea.

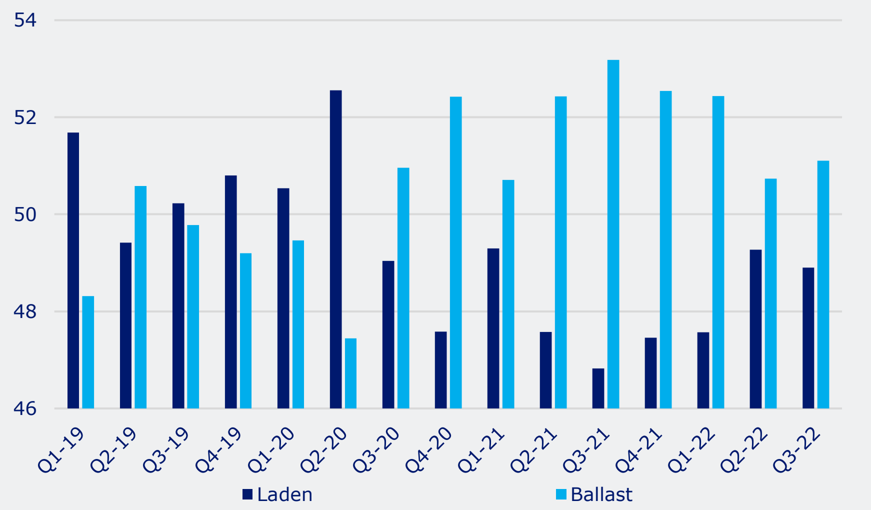
MORE VESSELS ARE LOADING FROM THE SAME PORT

A large part of the Product Tanker market engages in tramp/spot trading. Oil price arbitrage and fluctuating regional demand make it difficult to place vessels on fixed routes. However, we have seen an increase in the number of vessels loading at the same port after discharging at a given place. In 2019, around 16% of the fleet on average travelled back to the same load port, while in Q3-22 this ratio was up to around 20%. In particular, MR Tankers loading in Russia and the US came back from long ballast voyages. If this pattern continues, the fleet's cargo carrying-capacity may decline.

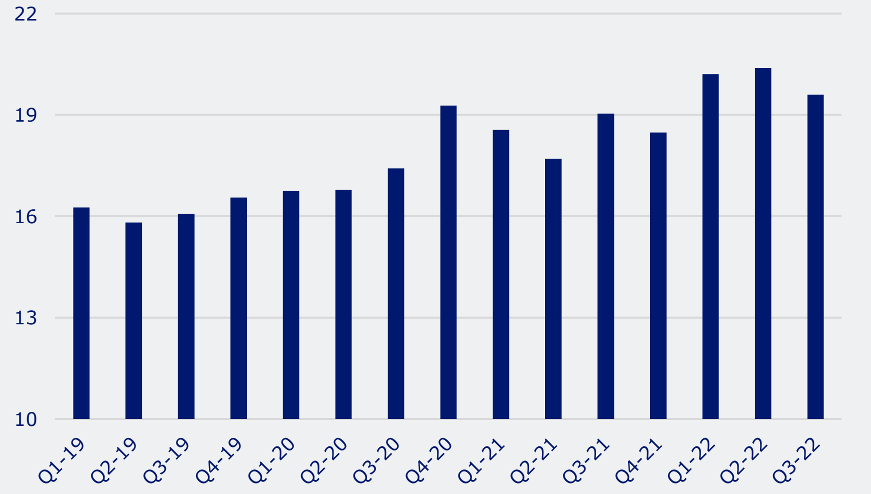
NO IMPACT ON CII BUT EEOI WILL BE AFFECTED

The CII shows emitted CO_2 per cargo-carrying capacity (not actual cargo) and nautical mile. As such, more ballast voyages may have a positive impact on vessels' CII ratings, as fuel consumption is lower when they are empty. This will affect EEOI ratings negatively, though, as this measure takes into account the actual cargo. Cargo owners may take these sustainability measures into account in their decision-making process.

LADEN-BALLAST SPLIT IN THE PRODUCT TANKER SEGMENT (%)



PRODUCT TANKERS TRAVELLING BACK TO SAME PORT (%)



Source: Clarksons, IEA, Alphatanker, Danish Ship Finance

LPG CARRIER

LPG CARRIER

Strong market sentiment but dark clouds are gathering

The LPG market has performed strongly in 2022. Demand has been expanding slightly ahead of supply. VLGCs have experienced shorter travel distances but a strong uplift in volumes. MGCs have struggled with declining volumes, but longer distances have kept the fleet employed. For 2023, a record-high inflow of new vessels is expected to put significant pressure on timecharter rates and secondhand prices. We believe that timecharter rates could decline by 30-50% during 2023. Recovery will follow when the combination of demand growth and demolition of older, less efficient vessels balances the market. Supply and demand are predicted to grow in parallel during 2024, but low fleet utilisation in 2023 will continue to weigh on the market in 2024.

FREIGHT RATES AND SECONDHAND PRICES

LPG earnings increased by 15% on average during the first nine months of 2022 compared to the same period last year. The index increased by 7% from January to September 2022. Secondhand prices were up by 3% in the period. Newbuilding prices increased by 6% on average, while prices for the largest and most advanced vessels rose by 8%.

VLGC secondhand prices have increased fairly in balance with their earnings potential. The price of a five-year-old vessel rose by 3% (USD 2 million) from September 2021 to September 2022, while the one-year timecharter rate gained 6%. That corresponds to a value increase of USD 600,000 for a one-year contract. The price of the five-year-old vessel thereby increased by an earnings multiplier of 3, indicating slightly higher expectations for future earnings.

LOW ADDITIONAL EARNINGS EXPECTATIONS

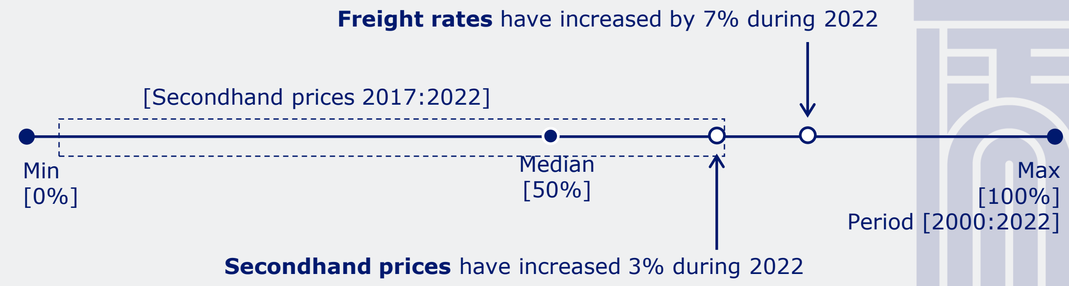
For MGCs, the one-year timecharter rate increased by 13% between September 2021 and September 2022, which implies a value increase of USD 1 million for a one-year contract. The secondhand price of a five-year-old MCG increased by USD 1.5 million (3%), which corresponds to an earnings multiplier of 1.5.

EARLY RETIREMENT OF OLDER VESSELS

The secondhand price of a 20-year-old MGC remains very low compared to its younger sisters, indicating that the market is expecting these vessels to be retired before they turn 30 years old.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2022



Market conditions have been healthy during 2022. Demand has been expanding in tandem with supply. The LPG fleet is scheduled to grow by 7% in 2022, while distance-adjusted demand is projected to grow by 7.5%. Seaborne volumes are expected to increase by 7%. The fleet's cargo-carrying capacity has been reduced by shorter distances for VLGCs, slow steaming and longer waiting times in ports. A massive inflow of new vessels is scheduled for 2023.

Delivery: The annual inflow of new vessels is scheduled to be 3 million cbm in 2022, up from 2.4 million cbm last year. The majority of deliveries are set to be MGCs and VLGCs.

Scrapping: Only ten vessels were scrapped during the first nine months of 2022, with a combined capacity of 46,000 cbm. In the same period last year, 96,000 cbm were scrapped. The average scrapping age has been 29 years.

Contracting activity has been relatively weak, with only 31 vessels ordered with a combined capacity of 1.9 million cbm. This is approximately two-thirds of the volume contracted, on average, during the last five years.

Orderbook: The orderbook amounts to 8.7 million cbm, of which 74% represents VLGCs and MGCs. The total orderbook is equivalent to 21% of the fleet, down from 23% in January 2022.

Demand: Seaborne trade volumes have increased by 7% in 2022 and are expected to grow by 3% in 2023. Longer travel distances have added 0.5 percentage points to demand, driven by increased trade flows to Europe from the US and the Middle East.

MARKET DYNAMICS IN THE LAST SIX MONTHS

Demand is expanding ahead of supply

The world is facing great geopolitical instability. Energy security is a growing concern, especially in Europe. European imports of LPG volumes increased by 8% during the first nine months of 2022, while Asian imports grew by 5%. Asia adding more volumes than Europe.

LONGER DISTANCES ARE SUPPORTING FLEET UTILISATION

The LPG market on average benefited from higher volumes and slightly longer distances during the first three quarters of 2022. Distance-adjusted LPG demand increased by 6% in the period, while the fleet expanded by 5%.

VLGC DEMAND HAS INCREASED MORE THAN SUPPLY

VLGCs saw a strong uplift in seaborne volumes of 12%, but shorter distances reduced distance-adjusted demand to 7% in the period. Long-haul Asian imports from the US were largely replaced with shorter-haul imports into Europe. The VLGC fleet expanded by 6% in the period.

DISTANCE-ADJUSTED MGC DEMAND HAS OUTPACED SUPPLY

MGCs, on the other hand, experienced dwindling demand (-3%) during the period, but significantly longer travel distances caused distance-adjusted demand to increase by 7%. The longer distances were driven by a strong increase in Chinese imports from the Middle East. The MGC fleet grew by 5% in the period.

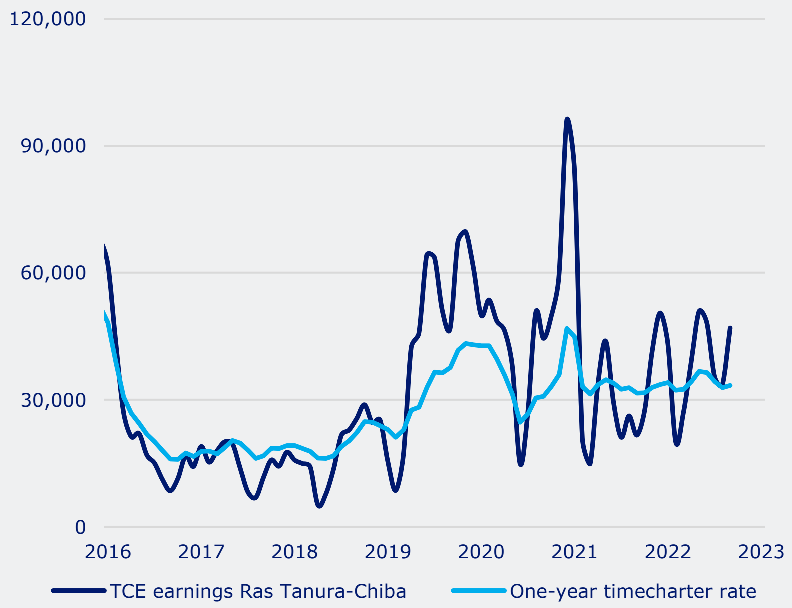
INCREASED TRADE VOLUMES FROM THE US

Total export volumes from the US increased by 9% during the first nine months of 2022. Increased European imports absorbed the entire export growth and thereby accounted for approximately half the net expansion in seaborne LPG volumes during the period. Volumes between the US and Europe increased by 59% for MGCs and doubled for VLGCs in the period.

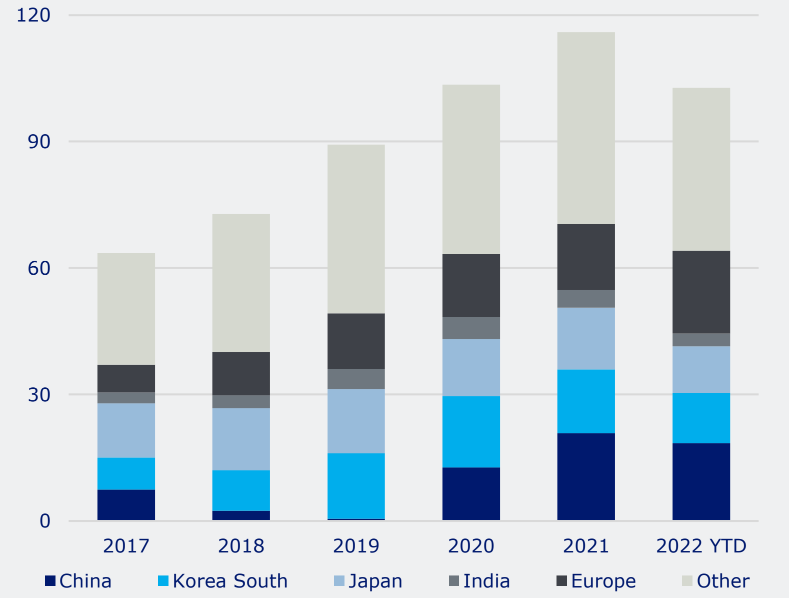
LARGE EXPORT EXPANSION FROM THE MIDDLE EAST

Middle Eastern exports of LPG increased by 20% during the first nine months of 2022. 85% of the additional volumes were exported to Asia, with China and Indonesia driving 44% of the growth. Volumes between the Middle East and Asia increased by 33% for MGCs and 20% for VLGCs in the period.

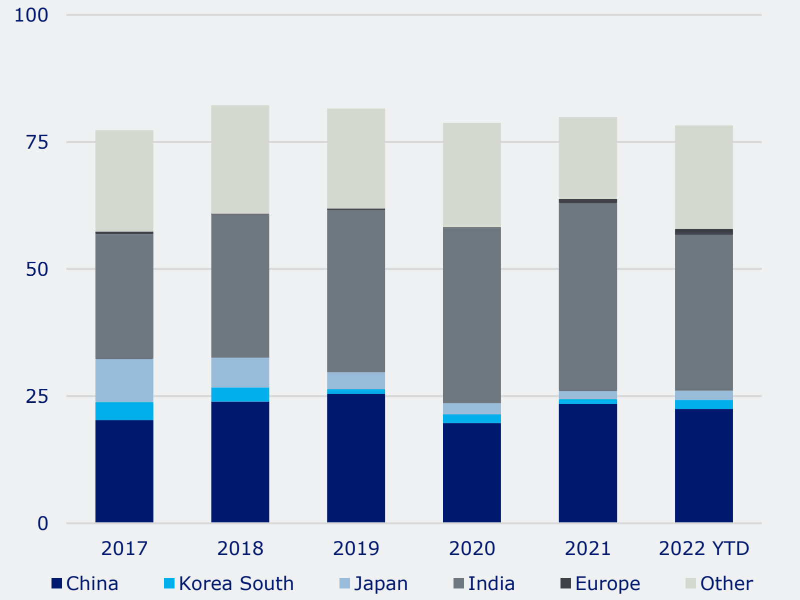
ONE-YEAR TIMECHARTER AND SPOT RATES (USD PER DAY)



US EXPORT VOLUMES (MILLION CBM)



MIDDLE EAST EXPORT VOLUMES (MILLION CBM)



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

SUMMARY: LPG MARKET OUTLOOK

Surplus vessel capacity is expected to build during 2023

Longer waiting times in ports and Panama Canal congestion are expected to last into 2023 and reduce available cargo capacity. The balance between supply and demand is expected to remain stable during the fourth quarter of 2022, while surplus vessel capacity is likely to build up during 2023. Timecharter rates are expected to decline until premature scrapping and demand growth balance the market. This could happen as soon as late 2024 but more likely in 2025.

Timecharter rates and secondhand prices remain above the long-term median as we head towards the end of 2022. Supply is expected to expand ahead of demand in 2023, which means surplus vessel capacity and premature scrapping are likely to be key topics next year. Fleet utilisation may not recover until 2025 if scrapping does not gain significant pace and restore market balance before demand volumes close the gap.

SURPLUS VESSEL CAPACITY MAY BUILD IN 2023

The LPG fleet is scheduled for massive fleet growth, with an orderbook-to-fleet ratio of 21%. According to the delivery schedule, 2023 will see the largest annual inflow of new vessels on record. A total of 5 million cbm, distributed between 91 vessels, is scheduled to be delivered during the year. That translates into fleet expansion of 12% (before scrapping). Demand is only projected to increase by 3%, with slightly longer distances adding 0.25-0.5 percentage points.

TIMECHARTER RATES COULD HALVE IN 2023…

One-year timecharter rates tumbled by 78% over 15 months when massive fleet expansion over the course of 2015 and 2016 resulted in surplus vessel capacity. It is always difficult to use past performance to predict future market developments, but it seems fair to assume that timecharter rates could drop substantially from the current level during 2023. In October 2022, the one-year timecharter rate for a VLGC stood at USD 33,000 per day. We cannot rule out a decline in the timecharter rate during 2023, possibly to match the lows of around USD 15,000 per day seen in October 2016.

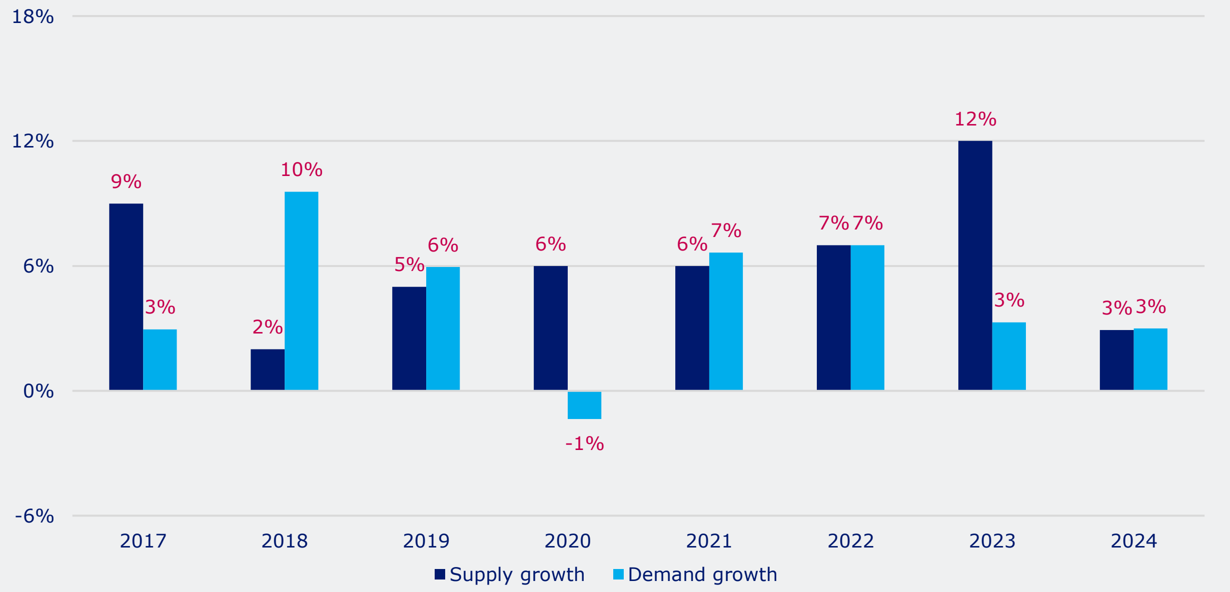
...BUT A RECOVERY MAY NOT TAKE LONG IF SURPLUS VESSEL CAPACITY IS SCRAPPED

Back in 2016, it took almost three years for the one-year timecharter rate to return to USD 33,000 per day. By then, the orderbook-to-fleet ratio was 40% compared to the current 21% (although the current orderbook is only 13% smaller in cbm than in 2016).

TIMECHARTER RATES MAY RECOVER AS SOON AS 2024 OR 2025

Timecharter dynamics are clearly dependent on demand growth and scrapping behaviour. Significant scrapping is needed for demand to balance supply in 2023, but it will not necessarily take many years for market balance to be restored. Asian, and in particular Chinese, demand growth could be overrepresented in current forecasts. New PDH plants only signal capacity expansion and not demand growth. The macroeconomic environment is deteriorating, which may signal lower demand for LPG too in 2023.

SUPPLY AND DEMAND BALANCE (CBM AND TONNES)



Source: Clarksons, Danish Ship Finance

LPG FLEET OUTLOOK

High fleet growth and limited scrapping potential

Deliveries are set to peak in 2023. Older vessels are expected to be scrapped when surplus vessel capacity starts to build. The average scrapping age is likely to dip below 30 years.

HIGH FLEET GROWTH SET TO CULMINATE NEXT YEAR

The orderbook-to-fleet ratio declined from 23% in January to 21% in October, since only a few new orders were placed during the period. The fleet is set to expand by 7% in 2022, but fourth-quarter fleet availability is expected to decline by 1.6%, as vessels are due for hull surveys. In 2023, the fleet is scheduled to expand by 12% before scrapping, after which the fleet is only expected to expand by 3% in 2024.

PLANNED HULL SURVEYS TO OFFSET VESSEL GROWTH

The number of vessels due for surveys in 2023 is expected to lower fleet availability temporarily by 1.3% and by a further 1% in 2024.

LARGE FLEET EXPANSION FOR VLGCs

The VLGC orderbook stands at 24% of the fleet. All VLGCs in the orderbook are powered by dual-fuelled engines on either LPG or ethane, whereas only 13% of the existing fleet (47 vessels) is dual-fuelled. The VLGC fleet is scheduled to expand by 14% in 2023 and 3% in 2024, before scrapping. Supply is likely to outstrip demand, even though a limited number of vessels (1.3%) will be taken out for special surveys during 2023. Scrapping is expected to increase during 2023 and 2024.

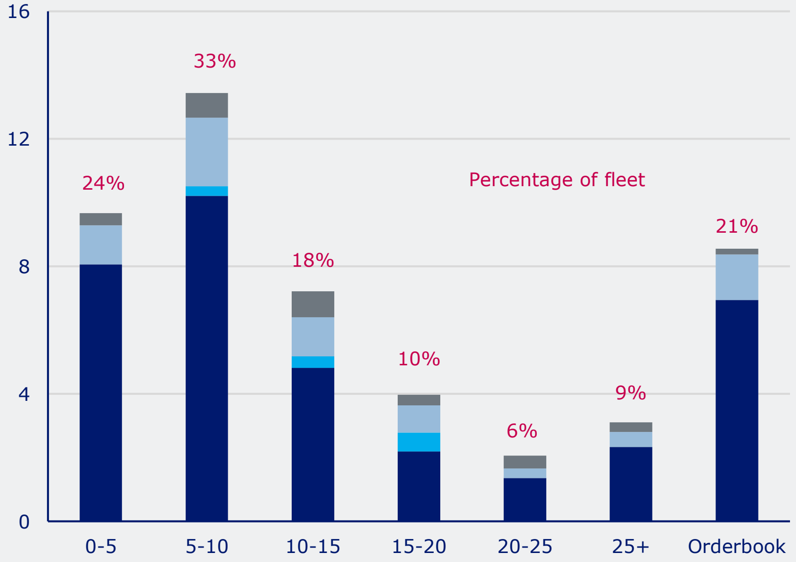
MASSIVE ORDERBOOK FOR MGCs

The orderbook for MGCs currently equates to 20% of the fleet. Only half the orderbook is dual-fuelled. The fleet is scheduled to expand by 13% in 2023 and 3% in 2024, before scrapping. A total of 1.3% of the fleet is expected to be taken temporarily out of service for special surveys in 2023.

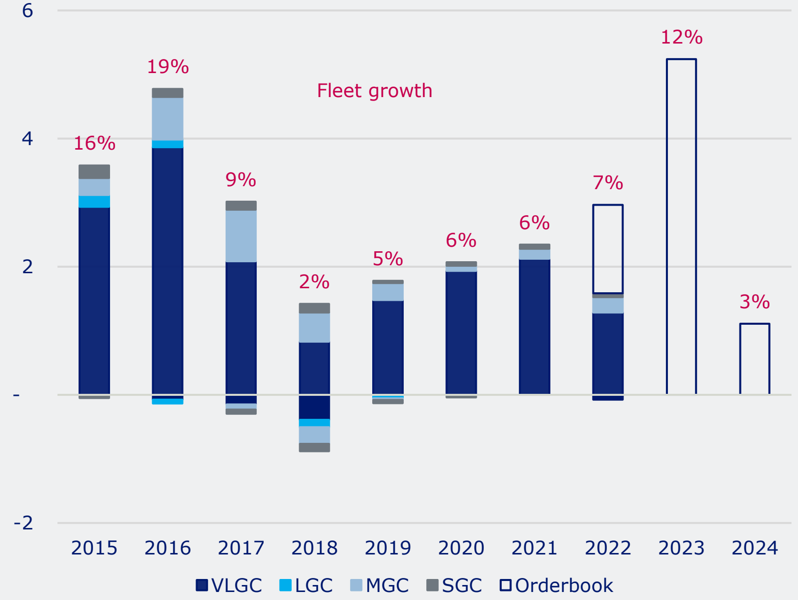
REDUCED AVERAGE SCRAPPING AGE

The average scrapping age for both VLGCs and MGCs is likely to drop below 30 years during 2023, when more vessels are expected to be demolished. That could cause the value of older vessels to depreciate beyond the recent decline.

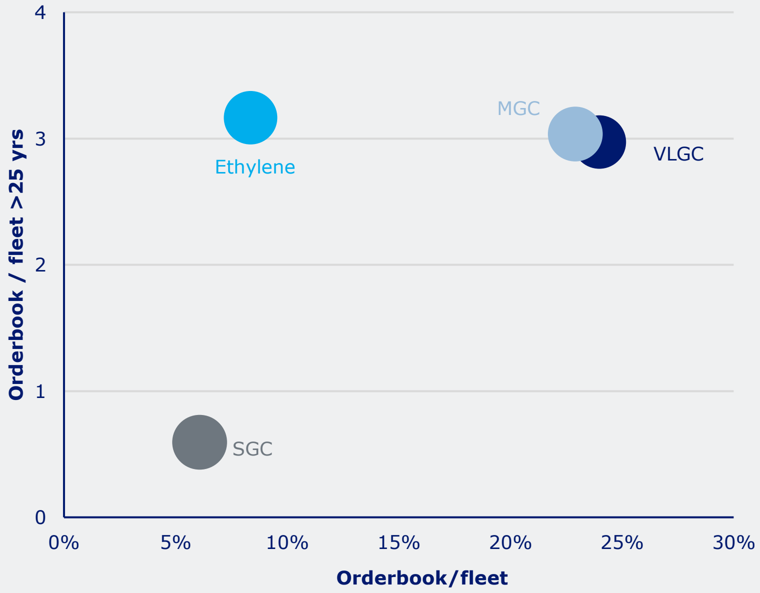
AGE DISTRIBUTION OF FLEET (MILLION CBM)



FLEET DEVELOPMENT (MILLION CBM)



FLEET RENEWAL POTENTIAL (CBM)



Source: Clarksons, Danish Ship Finance

LPG DEMAND OUTLOOK

Strong growth in European seaborne LPG demand has restructured trade flows for large Carriers

Rising energy costs and lower global economic growth are lowering the outlook for LPG volumes in 2023. Global GDP is only projected to grow by 2.7% in 2023. The Chinese economy is struggling with a real estate sector that is on the brink of a crisis. The ripple effects will be felt across the Chinese economy should domestic real estate prices begin to decline significantly.

LPG DEMAND IS EXPECTED TO INCREASE BY 3% IN 2023

Europe is working to become less dependent on Russian gas. Seaborne LPG volumes will play a part in bridging the gap, but this seems almost impossible without continuous growth in US export volumes. Global seaborne LPG volumes are projected to increase by 3% in 2023, while distances are expected to add a modest 0.25-0.5 percentage points.

EXPANDING PRODUCTION

The US is expanding its LPG infrastructure and continues to increase LPG production with new capacity coming online. The Middle East is likely to increase exports when OPEC+ phases out its current oil production cuts. Export volumes are projected to increase by 10% in 2022 and 4% in 2023.

COLD WINTER AND SWITCH TO LPG

During the coming winter, we anticipate strong heating and retail demand. LPG is currently significantly cheaper than oil and LNG, which is expected to drive a switch to LPG where possible. LNG is approximately five times as expensive as oil, and LPG is trading at a 20% discount to oil.

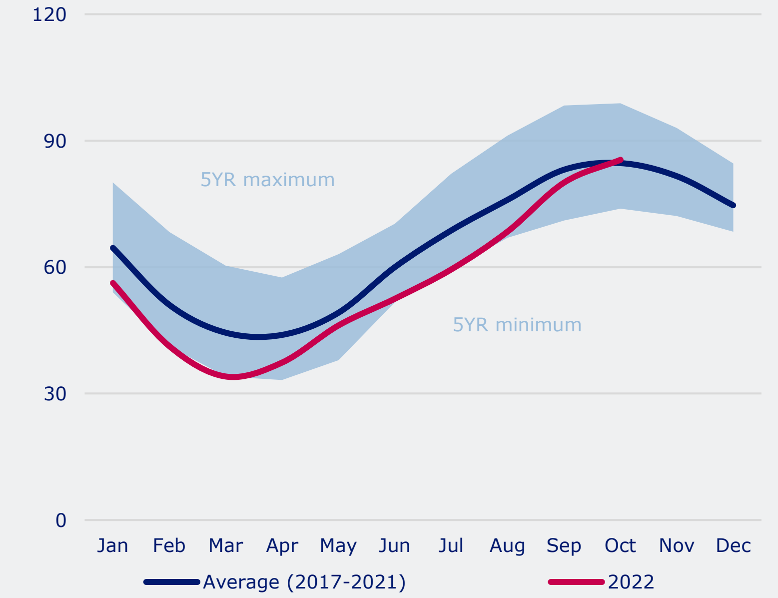
LONG-TERM DEMAND GROWTH OF 3-5%

Trade volumes from the US and the Middle East are expected to grow at a CAGR of 3-5% in the period 2022-2025, with the Asian petrochemical sector as the main demand driver. Asian demand is expected to remain resilient as new PDH units ramp up production.

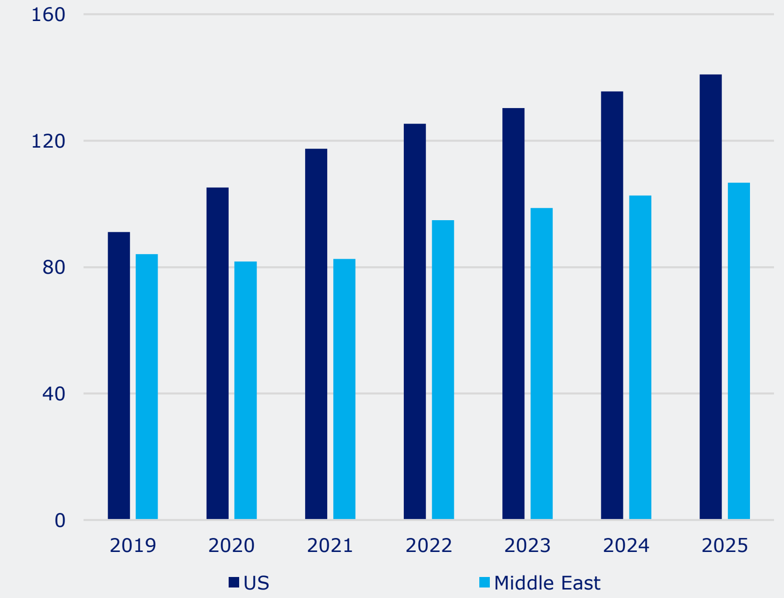
IRAN IS A DARK HORSE SHOULD SANCTIONS BE LIFTED

Iran represents sizeable upside potential should sanctions be lifted. Some sources indicate that Iranian export volumes could give employment to about 150 VLGCs per year.

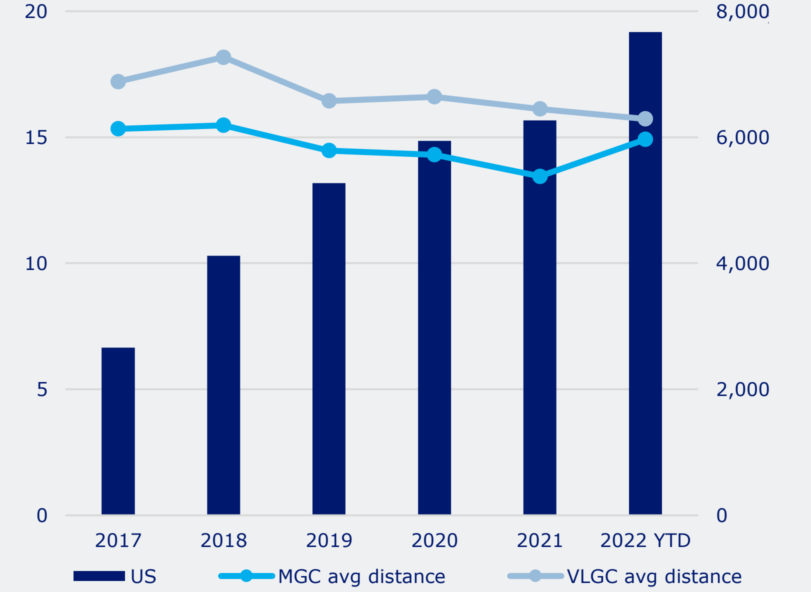
US LPG INVENTORY LEVELS (MILLION BARRELS)



US AND MIDDLE EAST LPG EXPORT FORECAST (MILLION CBM)



US TRADE TO EUROPE (MILLION CBM) AND DISTANCE (MILES)



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

DANISH
SHIP FINANCE

www.shipfinance.dk