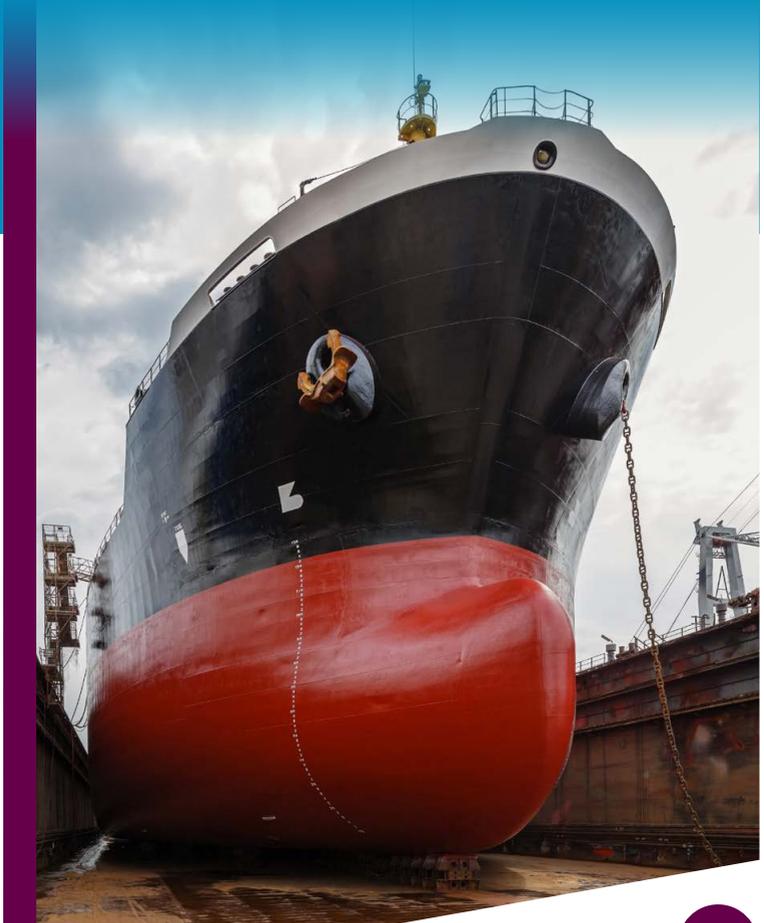


Shipbuilding

New Risks in a Changing Market

MAY 2022 UPDATE



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This booklet is written by Nick Wood and Nick Pugh of Affinity (Shipping) LLP (“Affinity”), and William Cecil and Mark Johnson of Haynes and Boone CDG LLP (“Haynes Boone”).

Affinity’s sections discuss the state of the shipbuilding market.

Haynes Boone’s sections discuss the legal issues that may arise in the current market.

AFFINITY

Where are we and how did we get here?

The end of an era?

The shipping market is highly volatile in the short-term and cyclical in the longer-term, be it seasonal peaks and troughs, event-driven volatility or the more irregular long-term boom and bust experienced over the course of many years. The shipbuilding market tends to be influenced mostly by the latter, for which it can take many years - even decades - to witness a full cycle.

In the period from mid-2020 to mid-2021, shipbuilding seems to have passed an inflection point at which the long-term deflationary cycle, which started with the decline of European shipbuilding, has flipped into an inflationary cycle which has the potential to be both significant and sustained. Not only does it look as if shipbuilding has reached the end of the deflationary road with the ‘price-setter’ of China suddenly becoming increasingly dominant and expensive, but Affinity

also sees the shorter but more intense boom and bust cycles of 2003-2008 and 2009-2020 turning positive again.

The newbuilding market has been transformed in 12 months, with Affinity’s data showing contracted newbuilding tonnage more than doubled from 2020 to 2021, driving prices up more than 30% from November 2020 to February 2022 to levels last seen in 2009 (although still comparable with mid-boom (2005) price levels). A 10-year buyers’ market has suddenly, but not unexpectedly, become a sellers’ market, the like of which has not been seen for over a decade. Eighteen-month orderbooks have mushroomed to 30/36 months, giving the yards a platform to pass on escalating costs from a strong commodity cycle (and wider inflationary pressures) to increasingly exasperated buyers.

Immediately prior to the 2008 financial crisis, the shipbuilding market had seen record levels of contracting and prices paid. Five years of strong volumes, culminating in the record highs of 2006/07, resulted in overflowing orderbooks and record revenues for the yards. As lead times for newbuildings extended further into the future, the premium available for earlier deliveries encouraged yards to increase capacity through higher productivity and new facilities. The market



was also characterised by widespread renegotiations, deliberate delays, and even repudiation of contracts and options as yards sought to capitalise on high prices at the expense of the buyers who had placed earlier orders at cheaper prices.

When the 2008 financial crisis hit, the boat rapidly switched to the other foot, with a 50% collapse in values in the 12 months after the financial crisis, leading to multiple buyer-initiated contract cancellations and renegotiations. Owners who took delivery after the 2008 financial crisis of ships ordered prior to the financial crisis, were left with expensive tonnage which has been a financial burden ever since. A number of shipbuilding facilities that were rushed to the market during the pre-2008 boom disappeared rapidly during the bust, while others hung on a little longer. The exuberance of the boom burdened the freight markets with massive oversupply,

leading to a decade of weak returns for owners which in turn led to weak newbuilding contracting as the market struggled to absorb a bloated supply side.

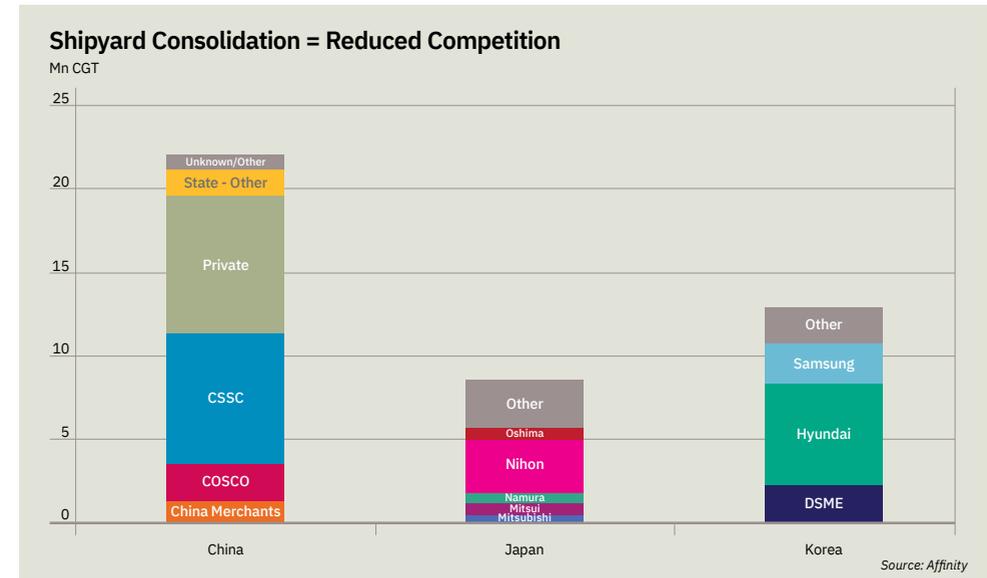
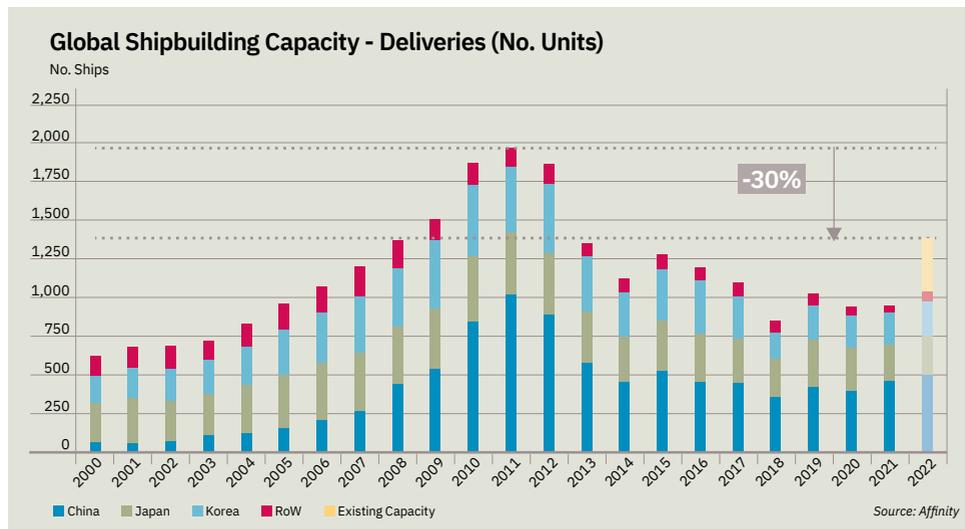
At the time of writing, global shipbuilding capacity is estimated by Affinity to be 30% below peak levels in terms of number of ships, and even more in terms of number of yards (with the most dramatic reduction being in financially vulnerable small yards). Shipbuilding capacity is also substantially more consolidated than it was prior to 2008, as it is controlled by fewer corporations, including the mega shipbuilding groups of CSSC, KSOE, and Nihon (which together account for close to 40% of capacity across the big three Asian shipbuilding nations – and more in strategic sectors like LNG and VLCCs).

A decade of capacity rationalisation, consolidation, and below average

contracting has left shipping with the demographic pressure of a fleet rapidly approaching middle age. 2021 saw shipbuilding demand exceed average levels for the first time in six years. Seemingly insatiable container and LNG demand is confronted with a supply side far too small to accommodate it, likely creating latent demand in the conventional bulker and tanker markets whose orderbooks sit at record lows (both around 6.5%) while yard capacity is hoovered up

by cash-rich liner companies. Affinity believes that a demographic catch-up, a strong inflationary commodity cycle, environmental pressures and strong earnings SHOULD mean a few VERY strong years of demand with the resulting impact on prices – and changes to the yards' approach to contract negotiation and administration. So, Affinity expects a very different shipbuilding environment in the next few years compared to that which buyers have enjoyed in the last decade.

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Root causes of most shipbuilding disputes

There are, broadly speaking, two root causes to most shipbuilding disputes.

First root cause - market forces

The first potential root cause is market driven.

Given the normal delay of about 1-2 years between a shipbuilding contract being signed and the ship delivered, there is considerable scope for the market to change dramatically during this period. This risk is heightened by the cyclical nature of the global shipping industry, which has historically been one of the global industries most affected by market cycles.

A change in the market can affect the dynamics of a shipbuilding contract in several ways. If the market drops,



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the buyer may be considerably less keen on paying the delivery instalment and taking delivery of a ship with a market value significantly less than the shipbuilding contract price. This may result in the buyer seeking to terminate the shipbuilding contract for the yard's default, if the buyer is able to do so, or the buyer simply walking away from the shipbuilding contract.

In a falling market, the shipbuilding contract becomes increasingly valuable to the yard. If, for any reason, the yard is unable to deliver the ship to the buyer, the resale price for the ship that the yard can obtain from a third party is likely to be considerably less than the original contract price.

In a falling market, there is generally an increase in the number of termination disputes.

In a rising market (as is now being experienced), the position is essentially reversed. The buyer will be very keen to take delivery of the ship and start trading her profitably. The buyer will also be very keen not to lose the shipbuilding contract for any reason. This is because the buyer is likely to suffer considerable delays placing a new contract at another yard, and for a considerably higher price, or could lose the opportunity to 'flip' the shipbuilding contract for the unfinished



ship to a third party in return for a substantial and immediately realisable profit.

The yard, meanwhile, may well be keen to get out of the shipbuilding contract if it can so that it can sell the ship to a new buyer for a higher price. This will be increased if the yard has itself been caught out by the rising market. A particular feature of a shipbuilding contract is that it is a contract of sale, for a fixed price, of 'goods' which have not yet been constructed. This construction process is dependent on the future supply to the yard of a substantial amount of materials, equipment and services, much of which has not been purchased by the yard when it signs the shipbuilding contract. If the shipbuilding market is booming and/or if the yard is facing wider inflationary pressures, it is almost inevitable that the yard will itself be being squeezed by its subcontractors and suppliers. This may mean that the consequence of the rising market for the yard is that it turns a profitable contract into a loss-making contract.

All of these market-driven factors can influence how the buyer and the yard seek to operate the contract and enforce their contractual rights. These factors can also lead to an imbalance

in the value of the contract to the two parties, which is a common cause of contractual disputes.

Second root cause – technical challenges

The second common root cause of shipbuilding disputes are technical challenges.

As set out above, a shipbuilding contract is a fixed price contract for the sale of "goods" that have not yet been constructed. The yard will have based its bid price on its estimation of the construction costs, the design and engineering costs plus, in each case, an allowance for the risk of possible increases in time and costs. Whenever a yard agrees to incorporate new technology into a ship, there is inevitably an increase in the risk of complications arising from this new technology, leading to unforeseen costs and delays which again often lead to disputes.

Changes in market dynamics and technology present new risks for a shipbuilding project, and it is important that any buyer placing an order for a newbuilding in this situation focuses carefully on these risks.

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What happens next?



Affinity believes that shipbuilding demand has entered a new phase of the long-term cycle, building on the recent ordering surge sparked initially by optimism relating to the beginning of the end of the COVID-19 pandemic, and then by the reinvestment of the vast earnings made by liner companies through the pandemic and which will likely continue through at least a large part of 2022.

Out with the old, in with the new

The ships contracted during the boom of 2005-2008 are reaching middle age. After a decade of weak demand, the fleet suffers from having relatively few modern, ECO ships and having plentiful older, thirstier tonnage which will be subject to more intense commercial pressures as environmental restrictions increasingly bite and as we potentially enter an era of sustained high energy costs. Pre-boom, ships were built for high speeds and maximum cargo lifts with big engines and high bloc co-efficients, resulting in high fuel consumption justified by strong earnings. With an increasing regulatory and commercial focus on fuel efficiency and low carbon emissions, these ships face a hostile trading future as the market is incentivised to move towards greener tonnage (whether simply by way of lower fuel consumption or by way of new technology). The newbuilding market will see increased demand as older ships are

phased out, and replaced with modern ships boasting new fuel technologies. This trend will only accelerate as regulators target the dirty and incentivise the clean (EU ETS being an obvious example).

Build back better

The COVID-19 pandemic and the fiscal response from governments around the world, has changed the economic landscape for the foreseeable future. The pandemic hit at a time of low growth, high debt, and loose monetary policy synonymous with the latter stages of the economic cycle. Social restrictions and stay-at-home orders forced governments to effectively write blank cheques to bankroll businesses and workers, and fund health services and medical response programmes. This concurrent monetary and fiscal loosening will likely have economic consequences in terms of currency debasement or inflation, which now looks to be accepted as structurally embedded and faces further upside risk from geopolitical instability in Eastern Europe threatening sustained food, energy and metals price inflation.

With an over-leveraged private sector struggling to drive growth, governments are expected to turn to fiscal spending to stimulate growth and labour markets. Sustaining the economic recovery will likely require state-sponsored rebuilding

programmes such as President Biden's 'Build Back Better' campaign and 'Green New Deal'. Equally, record high post-pandemic public debt will require continued loose monetary policy to avoid triggering a debt crisis. Synchronised fiscal spending, quantitative easing and cheap money is leading to higher inflation which will help to erode debts over time.

Government-sponsored infrastructure and decarbonisation programmes will increase demand for commodities and support shipping, particularly dry bulk and tankers. Underinvestment and supply contraction in commodities since the 2008 financial crisis, much like in the shipbuilding market, could collide with strong demand, driving a commodity cycle inflation (there has already been media speculation about a commodities supercycle). Physical assets, including ships, are a traditional hedge against inflation, so Affinity expects to see further financial investment as investors seek out hard assets. However, the macro-economic implications of the conflict in Ukraine are still unknowable and could easily become a drag on global economic growth leading to the prospect of stagflation.

End of the road

Shipbuilding has followed cheap labour (from Europe to Japan in the 1970s, then on to Korea in the 1980s, before discovering China in the 2000s). China is now the largest shipbuilding nation by number of ships delivered, and is utterly dominant in the bulk market.

But, China's intoxicating combination of seemingly inexhaustible low-cost labour, massive capacity, and state-sponsored willingness to take loss-making contracts is under threat. As coastal China develops further, labour cost inflation and demographics are increasing costs, whilst consolidation, capacity destruction and the change of the cycle suddenly allow yards to pass these costs on to buyers. The issue is not that China has lost its cost advantage compared to the other incumbents, but rather that China, as the price-setter, has become more expensive, with the result that prices everywhere are able to rise.

With no other shipbuilding country willing or able to threaten the combination of cheap labour, geographical qualifications, technical skills and, most importantly, the financial resources (shipbuilding has been massively loss making in recent years) enjoyed by China's shipbuilding industry, if China gets more expensive, the entire shipbuilding market is likely to get more expensive.

What will be the next low-cost shipbuilding nation? In short, Affinity does not see there being one anywhere on the horizon. With capacity now so consolidated in the hands of state shipbuilding groups, Affinity expects all yards to drive up prices as part of an effort to recover the massive losses sustained in the last decade. This process is already underway with prices up over 30% from the lows of 3Q 2020.

Keeping a lid on it

What happens next?

Above trend demand collides with tight and consolidated capacity. Prices go up and logically, shipping being a true (and responsive) market, supply will increase.

That's certainly what was seen in the 2003-2008 boom. New yards popped up, existing yards sometimes appeared to be building new facilities on any piece of available flat coastline, and enterprising entrepreneurs marketed greenfield shipbuilding sites that would ultimately never even break ground. With prices up 22% year on year, a similar pattern would be expected to be seen now. But Affinity has identified only limited reactivation of marginal capacity, mothballed facilities being resurrected, and yards improving productivity to squeeze a few more ships out of their existing docks. However, we are beginning to see more signs of mothballed capacity coming back. HHI is bringing its Gunsan facility back to operation (although only for block fabrication for the time being), investors have bought the Hanjin Subic facility and the Kouan and Sainty facilities in China are now being operated by other established yard groups. But, none of this is likely to add enough capacity to substantially change the supply side story and Affinity see no signs of new facilities being considered.

There are two key differences this time around. Firstly, the yards are not yet

making much money. The upside has largely been swallowed by surging steel prices, leaving margins little better than they were a year ago. For example, the direct steel cost in a VLCC has increased by more than \$20million since the lows in 3/4Q 2020. Secondly, the yards have learnt the lesson of oversupply and are keen not to repeat the mistakes of the boom, at least not before they've repaired their balance sheets. They're enjoying the sellers' market and want to keep the balance in their favour. In the short term at least, we expect supply side restraint to remain.

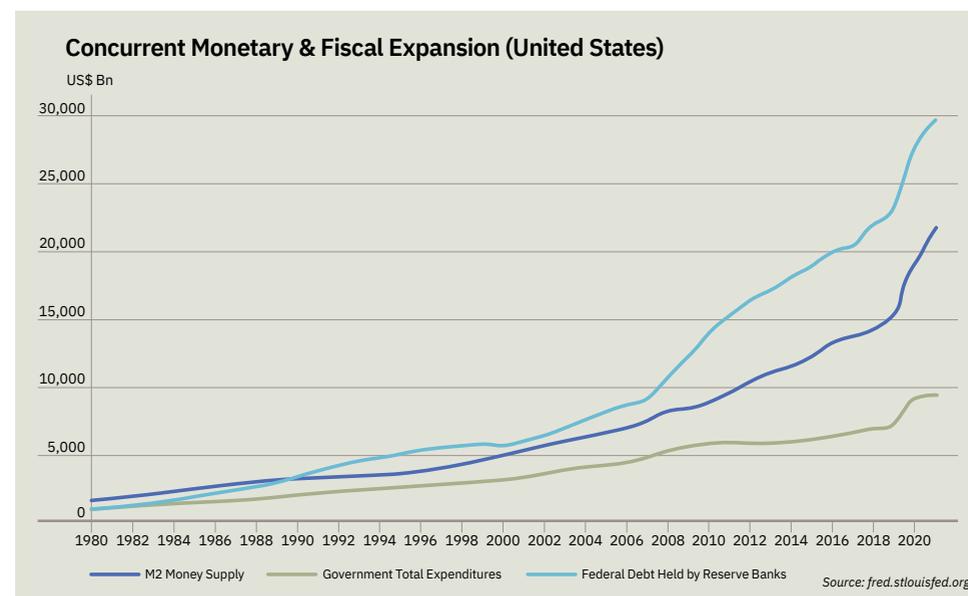
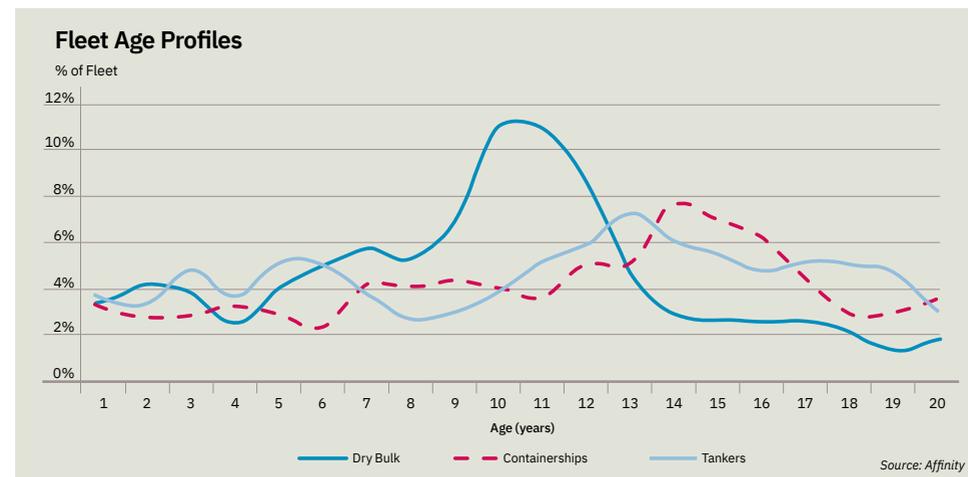
Additionally, consolidation is playing a role. CSSC group is now the largest shipbuilding group in the world, accounting for over 35% of shipbuilding capacity in China, and 18% globally. The group also controls 55% of China's (the world leaders in construction of these sizes) capacity for Capesize and above. Even though KSOE's merger with DSME was blocked by the EU, the Korean market is highly consolidated with the 'Big 3' yard groups claiming almost 85% market share of the world's second largest shipbuilding nation. These consolidated groups have all suffered such substantial losses in the last few years, it is unlikely that they are going to undermine pricing by increasing capacity until it's sustainably profitable. The consolidated groups have dominant market positions that they are likely to want to exploit while they can. With shipbuilding being so financially painful for so long, Affinity sees no signs of

newcomers threatening the position of the dominant shipbuilding nations.

Until shipbuilding is substantially profitable again, Affinity expects supply should remain relatively stable.

Until the recent dramatic market

change, apart from a few temporary upturns, shipbuilding has been a buyer's market since 2008. Many in the industry will not have experienced, or will have forgotten, the different risks associated with a rising market. We highlight some of these risks below.



Capacity constraints and legal challenges

The risk that the contract is not legally enforceable

In a rising market, the buyer must ensure that it can hold the yard to the contract terms from (or very shortly after) contract signature.

Shipbuilding contracts often provide that the contract does not become enforceable until certain specified events have occurred. These might include the provision by the yard of a refund guarantee, or other steps that the parties must take - for example, obtaining board approval. Particularly if there is likely to be a significant delay between contract signature and the achievement of these conditions, it is important that the yard is not effectively given the right to back out of the contract with no recourse for the buyer. Accordingly, for example, in relation to the provision of a refund guarantee, this should be a condition precedent for the buyer's obligation to pay the first instalment (and subsequent instalments) of the contract price, but not a condition precedent for the effectiveness of the contract. Consequently, if the yard fails to provide a refund guarantee, the buyer does not have to pay the first instalment of the contract price (or any subsequent pre-delivery instalments), but the shipbuilding contract is still an

enforceable contract against the yard.

Questions of enforceability can also arise in relation to options granted by the yard to the buyer for further ships in the future, often at the same, or similar, prices as the first ship. These options may be exercisable by the buyer over an extended period.

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Substantial inflationary pressures and significant rises in the market make these options very unattractive for the yard. It is therefore important that the option agreement, once exercised by the buyer, is legally enforceable against the yard.

For a signed agreement to be enforceable under English law:

- there must be consideration (i.e.

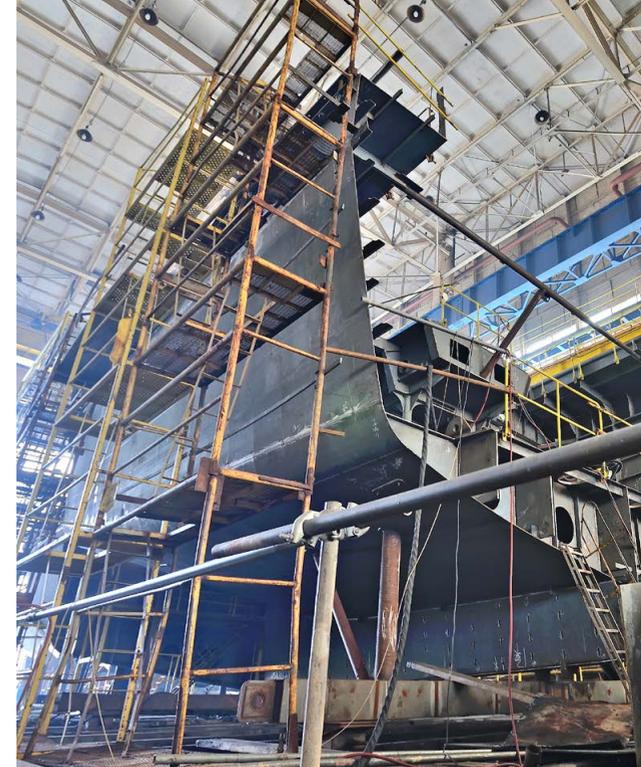
something of value has been given for the promise) – unless the agreement is executed as a deed;

- the parties must have intended to create legal relations, rather than, for example, simply entering into an agreement to agree, or an agreement to negotiate, which is generally not enforceable under English law;
- the agreement must be sufficiently certain to be enforceable. An agreement where the terms are too vague cannot be enforced. This is because a court/tribunal will not enforce an agreement if it is not possible to ascertain the terms of that agreement.

It is important that the option agreement does not fail any of these tests. Otherwise, it will not bind the yard and will, in effect, be worthless.

Risk of excessive delay in delivery

Normally, a shipbuilding contract will require the yard to complete and deliver the ship on a specified date. If the yard does not do so, then after an initial grace period, the yard pays the buyer liquidated damages for delay. These liquidated damages



are normally capped at a specified amount. When the liquidated damages cap is reached, the buyer has an option to cancel the contract. The yard can normally require the buyer to elect whether to cancel the contract or accept a later delivery with no additional liquidated damages.

In a falling market, this normally provides the buyer with sufficient protection. This is because the buyer may well be looking to cancel the contract anyway, if it can. But in a rising market where the buyer does not want to cancel the contract, the buyer may have to accept a significant further delay in delivery of the ship, for which it receives no compensation.

This also can give rise to a yard using

this to its advantage, by threatening the buyer with substantial further delays unless the buyer pays the yard additional sums to cover the yard's "acceleration costs".

The buyer's position is made worse by the fact that many shipbuilding contracts provide that, where the buyer terminates the shipbuilding contract for delay, the buyer is



entitled to a refund of the pre-delivery instalments of the contract price, plus interest, but the yard has no further liability to the buyer. In circumstances where, after cancellation of the shipbuilding contract, the buyer will have to find another much later slot at another yard for a higher price, a refund of the pre-delivery instalments plus interest will not compensate the buyer for its losses arising out of the yard's breach.

It is therefore important that the buyer in a rising market focuses carefully on

the risk of excessive delay, and on any limitation on the yard's liability in the shipbuilding contract.

It is also important that the buyer ensures that the yard is contractually responsible for delays caused by its subcontractors and suppliers and cannot, for example, claim force majeure simply because its subcontractors or suppliers deliver equipment late.

Particularly in light of the increased risk of significant delay, it is important that the triggers for payment of pre-delivery instalments of the contract price are linked to achieved milestones in the work, and not simply to agreed payment dates.

Risk of poor work quality

In a rising market, the yard may have taken on more work than it can handle, and the same may apply to its subcontractors and suppliers. This can lead to reduced quality in the work, as well as delays which the yard may try to make up by cutting corners.

This can lead to significant quality issues at delivery, particularly where the buyer does not want to delay delivery of the ship any further. It is therefore important that the buyer has sufficient contractual rights to inspect the work and identify quality issues as they arise, and the right to require the yard to rectify defective work during the project. This is important as a



It is therefore important that the buyer in a rising market focuses carefully on the risk of excessive delay, and on any limitation on the yard's liability in the shipbuilding contract.



failure to address, for example, design issues early on can lead to much greater defects and delays later in the project.

It is also important that the buyer has some control over the extent to which the yard can subcontract as well as the choice of the yard's subcontractors and suppliers, and it is also important that the yard remains fully responsible for any subcontracted work as if it had done the work itself. This is to avoid the risk that the yard contracts with lower quality subcontractors and suppliers simply to avoid delays in delivery of materials and equipment or offset the impact of inflation on supplier/subcontractor prices.

Risk that the yard attempts to claw back its cost increases from the buyer

As explained above, a rising market does not necessarily mean that the

shipbuilding contract is profitable for the yard. This is because the yard will likely have fixed the contract price at contract award and will then be subject to inflationary pressures from its suppliers and subcontractors which it cannot pass on to the buyer. In these circumstances, the yard may attempt to recover these additional costs from the buyer, for example, through trying to claim variations to the work. Often, the yard only attempts to claim these "variations" late in the project when the yard realises the extent of its cost overrun.

It is therefore important that the contract contains sufficient protection for the buyer to ensure that the yard must claim any variations before it commences the varied work and that the yard must issue variation requests within a specific timescale, or else it will be barred from claiming additional time or money.

Risk of the yard walking away from the shipbuilding contract and selling the ship to a third party for a higher price

Assuming the yard does not have a contractual right to terminate the shipbuilding contract, if the yard simply refuses to perform the contract, this is likely to be a repudiatory breach of contract at common law by the yard. As mentioned above, most yards attempt to limit their liability in all circumstances to a refund of



HAYNES BOONE

Future technologies and legal challenges

the pre-delivery instalments, plus interest. These clauses have become more stringent in recent years. It is important that, where the yard effectively decides to walk away from the contract without any contractual right to do so, that it is not entitled to limit its liability for common law damages under the contract.

The buyer should also bear in mind that the refund guarantee will not normally cover a termination at common law for repudiatory breach. If not, then even though the yard

has clearly indicated that it does not intend to perform the contract, the buyer may have to continue to treat the contract as ongoing, and pay any further instalments of the contract price that fall due, and then exercise its contractual right to terminate the contract for delay in order to have its claim for refund of the instalments of the contract price secured by the refund guarantee.

As set out above, the second potential root cause of many shipbuilding disputes are technical challenges during the project. These raise

additional risks which, again, need to be considered during contract negotiation and addressed in the shipbuilding contract. We discuss some of these risks below.

Risk of very significant time and cost overruns resulting from technical challenges

When a yard experiences technical issues on the project, the following sequence of events often occurs:

First, the yard experiences delays in the design and engineering phase. To keep up with the project schedule, the yard progresses to the construction phase before the design and engineering is at a sufficiently developed stage. Thereafter, the design and engineering issues result in disruption to the construction process, and a higher level of rework. This results in additional delays and cost overruns for the yard. The project therefore falls further behind schedule and is more over-budget. By the time the ship is ready for delivery, the project is very late and well over-budget. This can then lead to the problems arising out of excessive delay and the yard's attempt to clawback cost overruns that are discussed above.

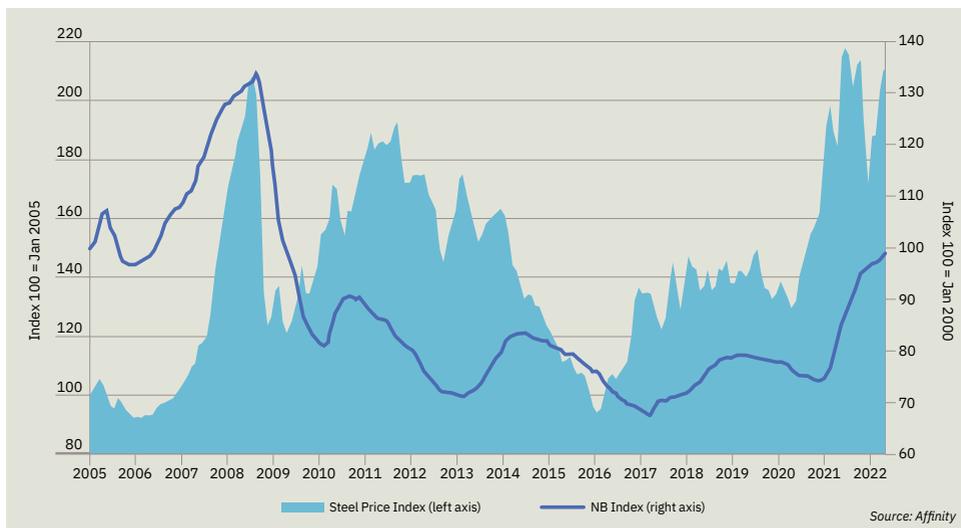
Further, in these circumstances, the yard may claim that the buyer has some contractual responsibility for

the design, and therefore for the consequences of the design defects. It is important that the shipbuilding contract is clear as to which party bears responsibility for the design. In general, if the contract provides for a split design responsibility between the parties, this is likely to lead to substantial disputes if design defects arise. This is because it can often be difficult to draw a clear demarcation line in the design process. The design of the ship will often follow a design spiral, where changes identified during detailed design may require changes to the basic design, which then requires further changes to the detailed design, and as a result the design process is generally not linear.

It is also important that the buyer satisfies itself that the yard has the



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necessary design capability. In a rising market, it can be tempting for buyers to place orders with less experienced yards, because of a lack of availability at the more experienced yards. However, serious problems in shipbuilding projects often arise because of a yard's lack of design and engineering capability. If the buyer places a shipbuilding contract for a new technology ship with a less experienced yard, the buyer must ensure that the buyer has (and exercises) sufficient review and inspection rights during the design phase to identify problems as they arise. This will reduce, but by no means eliminate, the design risk.

The buyer should also ensure that the contract timetable provides enough time for the yard to carry out the design and engineering sufficiently before construction starts. A contract timetable that gives the yard insufficient time to carry out the design and engineering is likely to lead to much greater time and cost overruns later, as explained above. That is in no one's interest.

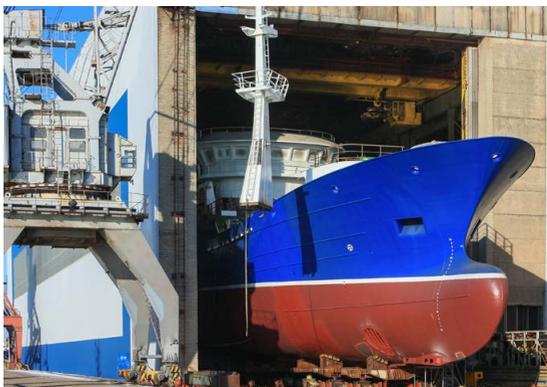
Risk of failure to achieve performance guarantees

Normally, a shipbuilding contract will contain a number of performance guarantees, for example, in relation to cargo capacity, speed and fuel consumption. The yard guarantees that the ship will be able to meet each of these performance guarantees. If there is a shortfall, the yard pays liquidated damages which increase

with this shortfall, up to a cap, at which point the buyer can terminate the contract or take delivery of the ship with a reduction in the contract price equal to the maximum liquidated damages, but no other remedies.

As explained above, in a rising market, the buyer may be very reluctant to terminate the contract, particularly if the buyer will only receive a refund of the pre-delivery instalments of the contract price, plus interest. This will not compensate the buyer for the additional costs it will incur placing another order at another yard for a higher price, and the profit that the buyer will lose as a result of the very significant delay in obtaining the ship. In these circumstances, the termination right provided to the buyer may provide very limited protection in reality.

It is therefore important that the buyer obtains as much comfort as possible that the yard will be able to at least achieve the minimum level of performance guarantees, and that the buyer ensures the contract includes adequate review and inspection rights to be able to identify potentially serious shortfalls in the performance



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guarantees at an early stage in the project when the yard can still take remedial action.

Risk of post-delivery defects

One likely consequence of a shipbuilding project incorporating cutting-edge technology is that there is a greater risk of significant defects being discovered in the ship after delivery.

A yard's liability for post-delivery defects is normally limited to defects discovered and notified to the yard within a specified period after delivery. Where a defect is discovered and notified in time, the yard's liability is normally limited to the cost of repairing the defect, with no liability for the other significant expenses and losses that the buyer may suffer, for example as a result of the ship being out of service and the ancillary costs relating to rectifying the defect, such as taking the ship back to the yard or to an alternative repair yard and, possibly, the costs of drydocking, if required. As a result, the normal warranty clause

gives the buyer limited protection for the costs and losses that will arise as a result of a post-warranty defect. Where warranty defects are more likely, and likely to be more severe, it is important to focus on the extent to which the yard will cover the cost of repairing the defect, and to agree a time-efficient procedure to notify the yard of the defect and to instigate repairs, as well as to allow the buyer to remedy defects at the yard's cost to avoid undue delay to the operation of the ship.

Further, the time limitation in most warranty clauses may give the buyer little or no protection where the defect only materialises after the end of the warranty period. For example, if the ship has been designed to be able to accept new technologies at a later date when they come available, for example, in relation to alternative fuel, by the time any defects become apparent, the warranty period may have long expired. It is therefore important to consider whether there are aspects of the ship that will only be tested long after delivery and, if so, to try to ensure that there is some recourse against the yard.

In this respect, it is worth bearing in mind that, unless the warranty clauses specifically extend the warranty period for latent defects, the time limit for the notification of claims will normally exclude the yard's liability for any claims discovered after the end of the notice period, including latent defects.

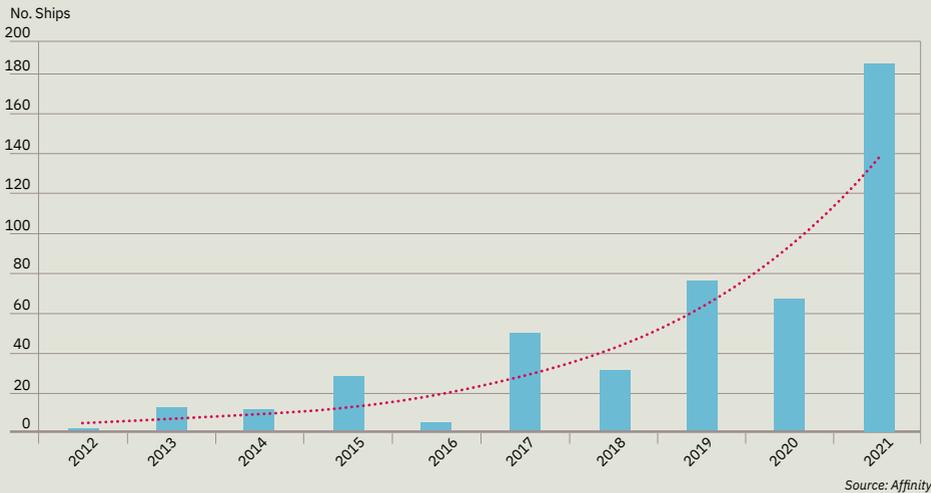
As it is increasingly clear the shipbuilding industry is becoming a seller's market

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Future Technologies and Technical/ Commercial Challenges

FUEL TECHNOLOGY	TECHNICAL AND COMMERCIAL CHALLENGES
LNG Dual Fuel	<ul style="list-style-type: none"> Initial period of elevated technical risk while yards inexperienced with gas handling enter into LNG DF ship construction. LNG tank design and manufacture, and particular reliance on subcontractors and supply bottlenecks.
Methanol	<ul style="list-style-type: none"> Low technical risk based on pumpable liquid fuel at ambient temperature and pressure. Most yards should be capable. Low energy density likely to compromise cargo capacity.
Ammonia	<ul style="list-style-type: none"> Highly toxic - design and construction of safety critical ammonia handling equipment. Potential liability for material/construction defects. Construction of large fuel tanks and positioning without compromise of cargo capacity or ship stability.
Hydrogen	<ul style="list-style-type: none"> Very low temperature fuel storage (-253°C). Potential for temperature swings to expose construction imperfections - latent defects.
Nuclear	<ul style="list-style-type: none"> Gaining regulatory approval to build. Likely political interference in licensing process. Heavy reliance on subcontractors and delivery schedules of external suppliers. Scaling up / supply chain and equipment lead times.

Ships Contracted with Alternative Fuel Technologies



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Conclusion on mitigating the contractual risks

and the industry is also simultaneously facing additional challenges, both inflationary pressures and from the need for new technologies in ships, as set out above, this imposes additional risks on buyers.

Some of this additional risk can be addressed in the shipbuilding contract. In a seller's market, however, the yard may be less willing to agree to changes to its standard form of contract. When it has been a strong seller's market in the past, it was not uncommon for yards simply to seek to present their standard form contracts to potential buyers and refuse to agree to any changes to the terms.

Even if the yard is willing to agree to changes in the shipbuilding contract terms, it is important for buyers to appreciate that market standard shipbuilding contracts generally give buyers relatively limited protection against excessive delays to the project and for defects in the work, both before and after delivery. In a rising market, these protections are reduced further. This is because the buyer's main protection – the right to terminate the shipbuilding contract and claim a refund of the pre-delivery instalments plus interest – may be a commercially unattractive option for the buyer given the delays and additional costs of placing

a new order for the ship at another yard.

It is important for buyers to realise that the contract will only protect them up to a point. It is still essential that the buyer carries out due diligence on the yard's capabilities before placing the contract, and also ensures that the buyer's supervision team has sufficient technical capabilities to be able to identify problems and defective work early on, before these cause more serious knock-on effects to the project. The buyer's due diligence should also, and arguably more importantly, verify the yard's reputation/ track record for honouring contracts - crucial to this will be the weight of financial/political backing for the yard.

In this respect, it is particularly important, where the design and engineering is incorporating new technologies, that the project timetable allows appropriate time for this work to be completed sufficiently before moving to the construction phase. Otherwise, in attempting to keep up with the project timetable, the yard may end up creating more serious problems later on which, because of the limited protections for a buyer contained in most shipbuilding contracts as discussed above, will be expensive for both the yard and the buyer.

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