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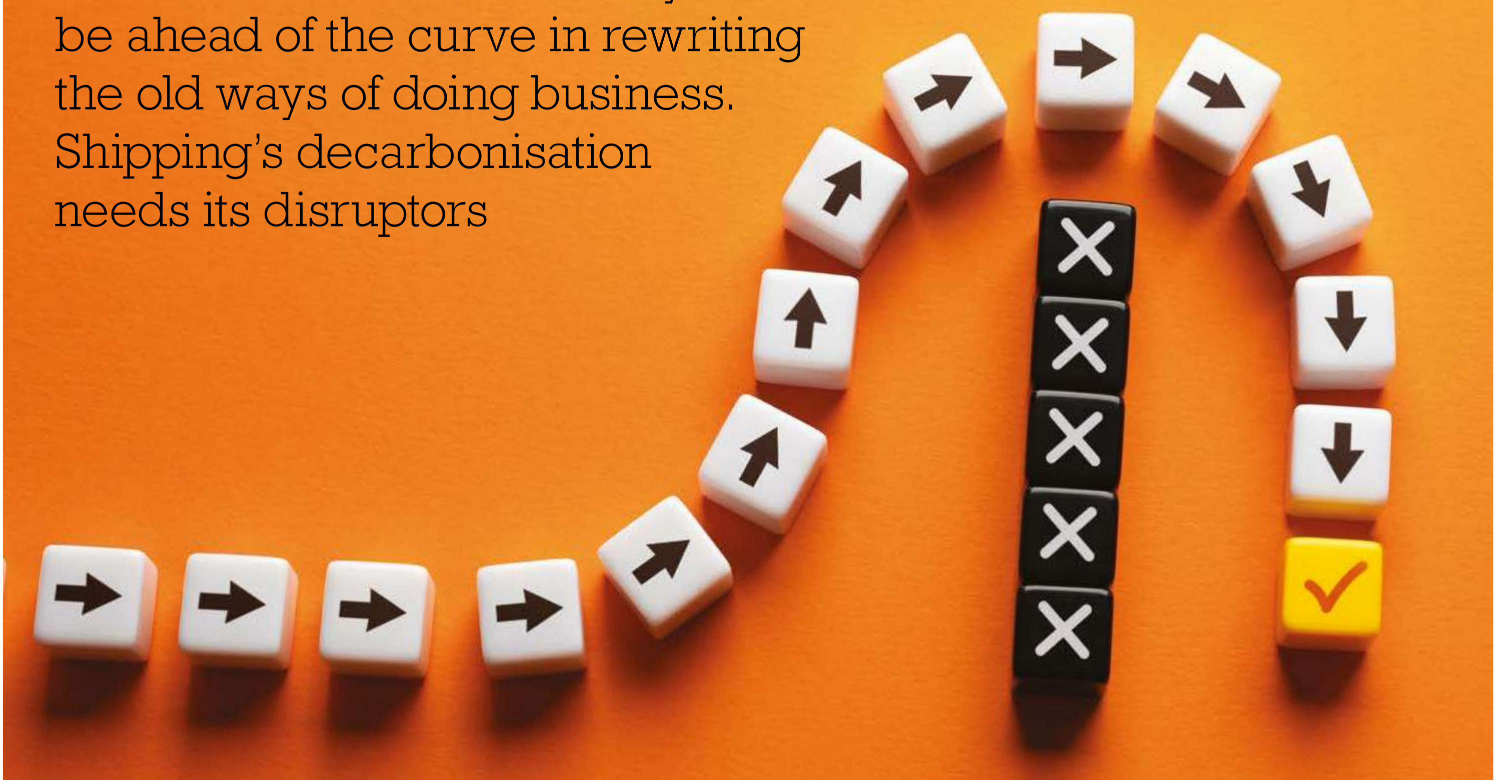
The shock of the new

For shipping to achieve an effective and efficient energy transition, ambition and expertise on the part of multiple industry stakeholders will be required. All of them will need to reevaluate their appetite for risk and innovation, and they will need to be ahead of the curve in rewriting the old ways of doing business. Shipping's decarbonisation needs its disruptors



In these 'companion' articles, **Fernando Alvarez** of Z-Joule explains how two core sectors in the shipping ecosphere – shipbroking and shipping finance – need to instigate change and step up to the 'zero' challenge

Financing the fuel transition

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Over the coming 25 years, the newbuild orderbook will require more than one trillion dollars of debt origination. If we are to meet the decarbonisation targets set by the International Maritime Organization (IMO) and the Poseidon Principles, most of this capital will likely go towards alternative fuel newbuilds. These loans will be issued against a profoundly changed landscape, where factors such as fuel prices, carbon pricing, and emissions regulations will be just as important as more traditional financial metrics.

In our companion article, we argue that fuel choice has not been a significant part of the newbuild brokerage engagement as, traditionally, all vessels were using the same fuels, and therefore, there was no opportunity for differentiation. The same can be said about shipping finance, where fuel choice has not been a relevant factor, either from the perspective of individual credit decisions, or at the aggregate portfolio level. In this article, we explore how the fuel transition has the potential to impact the shipping finance segment, and how financial institutions might position themselves as leaders in this rapidly evolving landscape.

PORTFOLIO DIVERSIFICATION OPPORTUNITIES

Shipping lenders[1] provide essential financial services to vessel owners. When an owner embarks on a newbuild programme, they do so in consultation with one or more lenders, which will issue debt capital for up to 60-80% of the new vessels' value. Given that each lender does business with dozens of owners, they take a portfolio approach to their overall debt origination activities. In order to maximise the value of its lending portfolio, the lender will make every effort to select solid owners and attractive newbuild projects. However, this is not enough. If the lender places a disproportionate share of its loans on a single shipping segment (e.g. dry bulk, car carriers, container carriers) or vessel type (Supramax, Panamax, LR1, VLCCs, etc.), the portfolio could become unduly exposed to adverse events in that particular segment or type. Therefore, lenders will also seek to diversify their portfolio across multiple trades, vessel types, and geographies. To the extent possible, the lender will seek a lower correlation between the assets it is financing, such that there would be a lower likelihood of an adverse development impacting multiple of its asset classes simultaneously.

The fuel transition brings with it a new dimension for portfolio diversification, which should be music to the ears of every portfolio manager. In the future, lenders might want to distribute their loans across a variety of fuel types, in addition to spreading risk across the other dimensions listed above. But, what is the correct allocation of capital to each fuel type, and how does that allocation evolve in time? Furthermore, should different propulsion choices be charged different interest rates? Should some propulsion choices require longer repayment windows or higher collateral? What is the impact of new-fuel price volatility on the portfolio? Should the lender emphasise some propulsion methods which might be riskier financially, but would lead to an improved ESG[2] profile of the overall portfolio?

These are profound questions, and their proper resolution requires sophisticated modeling and computational capabilities. Ideally, the lender would be able to optimise its portfolio configuration using a stochastic or robust optimisation model. At a minimum, the lender should be able to simulate the financial metrics of the vessels in its portfolio under thousands of fuel pricing, fuel availability, and legislative assumptions, over a time frame of several years[3].

Over the last few months, we have been in contact with a few banks that have indeed built significant new analytical capabilities and are well prepared for the new challenges in shipping portfolio management. Surprisingly, we have also spoken to a few prominent banks (and other stakeholders), with multi-billion-dollar exposure to shipping, which, thus far, are either unwilling or unable to build these capabilities.

INDIVIDUAL LENDING DECISIONS AND DUE DILIGENCE

Let's take a step back from the aggregate shipping portfolio and focus on individual credit decisions. Traditionally, the evaluation of a newbuild loan focused on factors like shipowner creditworthiness, leverage ratio, projected freight rates, and vessel specifications. Going forward, the lenders would be well advised to take a deeper dive into the bunkering arrangements for the proposed vessels. Which will be the vessel's main propulsion fuel? Have the owners secured an initial fuel offtake agreement? For how many years? With whom? What is the credit worthiness and stability of the fuel supplier? What unique supply chain risks might impact the chosen fueling strategy? Will the vessel be competitive outside of a green corridor? When?

Some would argue that the lenders have no business getting involved at this level of detail. However, note that, if the vessel were unable to find their native fuel (e.g. LNG, methanol, or ammonia), they would likely revert to VLSFO and MGO (potentially incurring significant emissions penalties) or attempt to secure biodiesel on spot (which will likely not come cheap either). An extended period under such circumstances would place the vessels and their owners under financial stress – precisely what the due diligence process is meant to uncover.

A fairly deep rethinking of the due diligence process seems warranted, including establishing the new evaluation criteria and their acceptable thresholds. The new process will need to be encoded in software to ensure even application, traceability, and compliance with multiple regulatory frameworks, such as Basel III, KYC, and regional ESG requirements. As in the case of portfolio evaluation, the lender will need robust computational tools that are capable of evaluating the financial performance of the newbuild project under hundreds or even thousands of fuel pricing and availability scenarios.

PERSONNEL TRAINING

Beyond the need for computational tools, lenders will need to upskill their workforce to understand the complexities of the new fuel landscape. A basic familiarity with the legislation and properties of the new fuels will be expected of any client-facing finance executive. The portfolio managers and quants will need expert understanding of this rapidly evolving space, something that is not always within their existing skill set. Some lenders will consider establishing new positions or desks within their organisations to centralise the acquisition and dissemination of information regarding new fuels and legislation. Rather than one or two discrete training sessions, sophisticated lenders should plan for continuous competence enhancement programs in order to demonstrate their thought leadership positions.

NEW FINANCIAL INSTRUMENTS

Outside of the newbuild financing activities, we see opportunities for financial institutions to offer hedging products to protect owners against increases in the price of their chosen fuels. Such hedging instruments are already in widespread use when protecting against price variations in fossil fuels, where the underlying dynamics are better understood. It is also possible to build approximate hedges for methanol, ammonia, and LNG commodity prices today. However, the lenders might find that the owners have an appetite for bespoke financial products for the shipping segment, which capture the marine supply chain dynamics more closely. Building and marketing these bespoke derivatives, which have very unique drivers, will require substantial new modeling and risk expertise.

COLLATERAL DEPRECIATION

Finally, we should point out the very real possibility of collateral depreciation. The new wave of loans might use the existing fleet (which consists mostly of conventionally fuelled vessels) as collateral. However, the value of that collateral might diminish more quickly than anticipated, depending on a complex interaction of fuel prices, emissions regulations, and the pace of overall fleet renewal. For some vessels, the optimal decision might be early scrapping. For others, retrofitting the engines and adding new tanks might eventually become the preferred choice. We expect that lenders and owners will be performing hundreds of such assessments every year, which again highlights the need for a scalable and reliable computational platform. A lender that fails to grasp the intricacies of the fleet renewal dynamic might find itself under two lines of fire, where a poor choice of new fuels places the new loans at risk, and the collateral for those loans are simultaneously devalued.

CONCLUSION

At the beginning of this article, we referred to the need for one trillion dollars to finance the fuel transition in shipping. Impressive as that sum might be, newbuild expenditure is actually only a fraction of the overall picture. Many adjacent investments will be required, as some new fuels require new manufacturing facilities, new storage facilities, new piers, and new barges. Therefore, ports, terminals, and fuel suppliers will require massive capital injections to play their part in the fuel transition. Many of the lenders involved in newbuild financing will also play a part in these infrastructure transactions, although potentially from a different desk. Those that manage to properly quantify the risks and rewards of this transition will prosper. The others will be differentially exposed to multi-billion-dollar risks.

1. Including banks, export credit agencies, private equity, and leasing companies. We refer to them collectively as 'lenders'.
2. We should note that there are a very wide range of opinions on the topic of ESG in the shipping finance community. We spoke to some lenders that take ESG targets very seriously, and even speak of a 'sweet and sour' dynamic, where owners will persuade a bank to provide financing for 'sour' projects in exchange for awarding them also a 'sweet' project with high ESG ratings. Other believe that ESG ratings are mostly a PR device, and that lenders will readily set aside such metrics in order to grow their portfolio.
3. To make a finer point here, the optimisation models assist the portfolio managers in configuring the portfolio, whereas the simulation models would allow them to evaluate the likely outcomes of a specific configuration under a variety of scenarios.

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