The increased complexity of shipping investments

by Ted Petropoulos
for Nafs
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Supply and demand factors

Shipping investments have always been complex. Anticipating future markets has never been easy as there are so many variable factors that affect them. Some indications related to the future supply of vessels can be discerned via the order book but even here such deliveries could be delayed should market conditions deteriorate and owners press shipyards for a later delivery. The supply side is also affected by scrapping which itself depends on scrapping prices as well as the number of overage vessels and / or the cost of surveys and / or meeting new regulations.

Determining the future size of the fleet cannot therefore be accurate but until relatively recently owners could foresee the minimum / maximum range of future fleet growth for the initial few years that are crucial for a shipping investment.

Over the last decade and increasingly so lately, slow steaming has had a major impact on the average fleet speed and led to reduced overall fleet supply. Moreover, as port infrastructure has lagged behind fleet growth, port congestion has also impacted heavily the fleet supply. The last two variables have been rather volatile and difficult to predict going forward as they are affected by the price of bunkers, freight rates and port development.

If the size of the fleet (per shipping segment) cannot be forecasted accurately, the same applies to the demand side. In simple terms, demand for shipping reflects international trade growth and the ever changing matrix of sourcing and consuming of commodities and products. In previous decades, an increase of global GDP led to a correspondingly higher increase of international trade since the world developed as a global economy with increased international sourcing and logistics. The increased dominance of China and the Far East in international trade has rendered them the key weighing factor in determining future demand. Hence, the forecasted growth by China with its reliance of imported raw materials and energy, as well as huge global exports would be key to future demand.

Allowances could be made for each particular shipping segment e.g. Dry bulk, crude, products, LNG,LPG, chemical, car carriers and, of course, Containers.

The above brief analysis can account for the main factors and difficulties in determining future demand and supply for each shipping segment and which would determine the degree of equilibrium or disequilibrium that would arise and its effect on freight rates. Given that additional newbuilding orders require time to impact supply, this would provide a good prognosis of a market where demand might exceed or is, close to supply. In addition, the non-availability of newbuilding slots would also delay newbuilding orders, which might assist in prolonging good markets.

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Factors leading to increased complexity in shipping investments in recent years

It is our premise that forecasting in shipping has become much more complex, rendering investing decisions more difficult and potentially dangerous.

Going green

We will begin with the increased concern for climate change and the need to reduce greenhouse emissions via a reduced carbon footprint for shipping. This concern has led to increasingly stringent future emission limitations required for vessels that are being adopted internationally. There is a mandate to make shipping sustainable and a zero emissions industry by 2050 with 2030 being an interim date by which time significant progress must have been made. To achieve the above, emissions will have to be monitored and if found higher than the allowable limits, penalties shall be imposed.

In addition, the existing fleet, as well as newbuildings will need to be regulated in order to comply with Energy Efficiency Existing Fleet Index (EEXI) limits by 2023. This may often require a limitation of a vessel's main engine output by up to 40% or more, reducing the vessel's speed significantly until due compliance. This would affect a large percentage of the existing global fleet. Furthermore such derating would be permanent save for emergency situations. Needless to say, this would alter drastically the actual trading characteristics of the vessel.

Furthermore, there are a number of energy / emissions reducing devices at various stages of development and availability that may well improve on a vessel's ability to meet EEXI standards. These would likely be at a high cost and since they are currently still being researched, it is difficult to determine their effectiveness and possible benefits. It is possible that many vessels of older, conventional technology with high emissions may need to be scrapped as the cost of rendering them compliant or being able to achieve speeds / consumptions as required by the industry may be too high or even feasible.

According to NKK classification society, approximately 86% of all dry bulk carriers in the fleet currently need some action in order to comply.

It is difficult to assess the impact of the imminent forthcoming environmental regulations to the shipping industry. Some argue that for the majority of vessels, their derated speeds would correspond to their current eco speeds which are what charterers / owners usually run their vessels at. However, some vessels may drop to well below such speeds which may render them either unattractive and not preferred by charterers or unable to earn sufficient hires.

It is, thus, possible that there will be a distinct very low speed tier of vessels that shall not be able to achieve high utilization or adequate charter rates. Others dismiss the impact of EEXI limitations as so many vessels would be affected.

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In previous times the quality of a vessel's condition, history, its specifications and its shipyard were the main determinants for a shipping investment. However, nowadays, its emissions rating and Engine Performance Limitation (EPL) requirements have become a very important factor.

With still a great deal of uncertainty as to the future stringency of regulations and the economic cost of compliance, some vessels may well become technically (in terms of emissions) obsolete and any investment in these has added risks.

Shipping investors will need to balance the lower cost of older poor emissions vessels, even with energy efficiency devices, against eco vessels able to comply with the currently envisaged and further possible regulations and restrictions.

As regulations are bound to become more stringent and intrusive, the remaining life expectancy of such affected vessels may be reduced.

On the other hand, the price gap between eco and non eco vessels is relatively high and the availability to purchase second hand eco vessels is limited. The question, therefore, arises if the eco / non- eco price differential can be justified. This would depend on investor expectations as to the issues raised above. Some market analysts anticipate that the price differential will rise further in the run up to the EEXI biting in 2023.

There is also the tradeoff between first generation, second generation and the latest eco designs, all achieving different speeds / consumptions / emissions and variably affected by regulations. We should bear in mind that first generation vessels would still need what could be significant engine performance limitations.

The case for newbuildings

The investment decision becomes even harder when it involves placing newbuilding orders today. Investing in the latest but still conventional technology carries risks. It is unclear how long such newbuildings will have as a trading life as increasingly dual fuel and alternative fuel designs, e.g. Ammonia, Hydrogen, are being developed. Ships traditionally have a useful life of 20 years and beyond. Will this hold for vessels to be delivered in 2024/25?

Another consideration is when would the new technology vessels be available and at what price. Would they be able to amortise their increased cost? Would charterers be willing to pay a significant premium for such clean vessels over and above eco vessels and non eco vessels? Will the new required land and port infrastructure for bunkering alternative fuels be ready worldwide for these vessels to rip the benefits?

Ship finance

Ship finance has also been influenced by the drive for lower carbon emissions. An increasing number of banks and lending institutions have adopted the 'Poseidon Principles'. The Poseidon Principles are a global framework for assessing and disclosing the climatic

alignments of financial institutions' shipping portfolios. In addition, lenders have begun to increasingly provide sustainability financing which involves a reduced margin for reaching ESG (Environmental, Social, Governance) related performance targets agreed in such loans.

Sustainability financing has thus far been increasingly used by banks and public companies and top tier shipping companies wishing to align themselves with ESG criteria and green shipping. The margin reductions are useful but not sufficient to offset the higher costs of eco design vessels especially those with dual source fuel or new fuels, such as Ammonia, Hydrogen, etc. Thus far, conventional engine vessels are still able to obtain finance from banks, leasing companies and other types of lenders. However, lenders have begun to be concerned with financing older vessels that will be severely affected by the forthcoming regulations and, as such, have commenced to reduce LTV ratios and loan repayment periods. This development may add further complications to the financing of older technology vessels and may make such investments increasingly more challenging.

Further questions

A further technical question arises over the ability of conventional engine non eco vessels to run at significantly lower RPM often well below their original design specifications.

What additives and / or modifications might be developed to assist such vessels?

Additionally, what are the risks of further or accelerated emission regulations?

Some anticipate / hope that there may be extensions provided especially in the light of stiff resistance and the high cost involved in retrofitting. This delay may be further impacted by further investing in conventional vessels or due to delays in manufacturers' / shipyards' coming up with new and competitive designs that meet the regulations on time. Therefore, an owner wishing to invest has to adopt a view as to the timing and severity of such regulations. Some new features are appearing, such as carbon collection designs that would permit a reduction of carbon emissions that would be released into the atmosphere. Current designs are bulky, costly, difficult to retrofit, and untested. Furthermore, carbon residues will need to be collected and disposed of in various ports. However, where there is a need there will be a solution offered, which may not currently be known, but needs to be anticipated in investment decisions.

Geopolitics

Moving on to other key developments that impact investments, we need to raise the increasing use of sanctions, tariffs and subsidies which impact on international trade demand and sources / uses of products.

International trade may have reversed the solid progress in freeing international trade up until about 20 years ago with new restrictions becoming more widespread in the last 10-15

years. There is this 'race of influence' between China and the US for consumers / countries and this may lead to more trade restrictions.

Another factor is the increased geographical risk, e.g. Ukraine, Taiwan, Iran etc. as the number of conflict areas has grown and the risks increased.

Increased tension that affects international trade is also more widespread in other countries in Africa, the Far East, Middle East and elsewhere, especially as the era of US dominance has weakened and dictatorships / coups have emerged in numerous areas, often fueling local conflicts.

Anticipating black swan events or natural disasters is hardly possible but they do impact on investment decisions and have become more frequent.

At the time of writing this article the invasion of the Ukraine had begun. This has already led to a tit for tat increasing use of sanctions and restrictions which have severely hit local trade and shipping. Moreover, the sanctions are international and also affect the movement of monies as well as goods and risks of non-compliance. Often the risks of non-compliance cannot be assessed as there may be hidden interest of factors that manifest themselves later resulting in vessels being in breach. The more widespread the use of sanctions, as well as their general nature, the more difficult it becomes for trade to take place. Shipping is often caught in the cross fire between countries with different strategic interests.

Timing and investment

To all the additional risks described in this article, investors have to determine how these would affect their own particular shipping sector of interest. To provide two examples:

1. Tankers and product carriers are currently in the doldrums in terms of spot earnings (until the Ukraine invasion) with rates often below operating costs. Normally this would be accompanied by low vessel prices. However, current prices are higher than spot rates would justify, implying an anticipated early tanker sector recovery. Investors, therefore, need to also foresee when such a recovery might commence, its extent, as well as to bear the negative cash flow in the interim. The IRR (internal rate of return) of a new vessel purchase depends on the assumptions used.
2. The Dry bulk sector has near record high vessel prices which render investments by definition risky of a market pullback. On the other hand, many investors are awash with liquidity and believe the good market may last for some time yet which, together with locking a period charter, might provide them with attractive returns, even by investing at these high prices.

Investment strategy is also important. Some prefer to stick with their existing fleets and earn excellent cash flows and await a market correction or the emergence of clear technological developments before investing in new tonnage. Others take the view that non-eco vessels are highly depreciated in value and may represent better value for money. Others still prefer

a ‘greener’ strategy whereby they wish to replace non-eco vessels with eco vessels and develop a fleet that is more in line and compliant with emissions standards and would enjoy a longer economic life.

Relatively few are not sellers. There are also those who believe that locking today’s prices constitutes a safer strategy and are willing to wait for a better re-entry point in the market.

Public companies have their own strategy to formulate. Often this aspires to a swifter transition towards less emissions, to vessels with sustainability in mind, given their public profile. As size matters, the pressure to grow is strong and it is self-evident that investment resources are available based on strong earnings (for dry bulk and containers). Interestingly, recently there has also been a trend for public companies to maximise dividends and / or float their older vessels via new public companies / offshoots as rewards to shareholders instead of dividends. This trend is indeed interesting and only possible during good markets for well performing sectors. The share discount to NPV in public companies may have a bearing in the above strategy.

In the light of their share price being well below NAV, many public companies have bought back their own shares, thus utilising surplus cash and enhance EPS.

Private owners, though, often complain that once they sell vessels at high prices and have cash hoards, these yield them next to nothing in bank deposits and many prefer to keep their investments despite the downside risk.

The drive to alternative fuels and the rebound of the global demand post pandemic has resulted in a renewed need for hydrocarbon fuels as energy demand exceeded supply. In the Graph below by Unctad (from Maritime Transport 2021), we observe that despite an apparent decline around the time of the pandemic, a recovery in carbon dioxide emissions, particularly for Containers and Dry bulk vessels, can be seen subsequently.

The above, as well as geopolitical considerations, led to massive interest in the price of LNG and oil. Often, countries had no choice but to sacrifice their green policies and turn to such fuels. The same applies to coal, as a global shortage led to an increase and not a decrease of its use and this may sabotage the anticarbon drive and delay the implementation of the emissions regulations.

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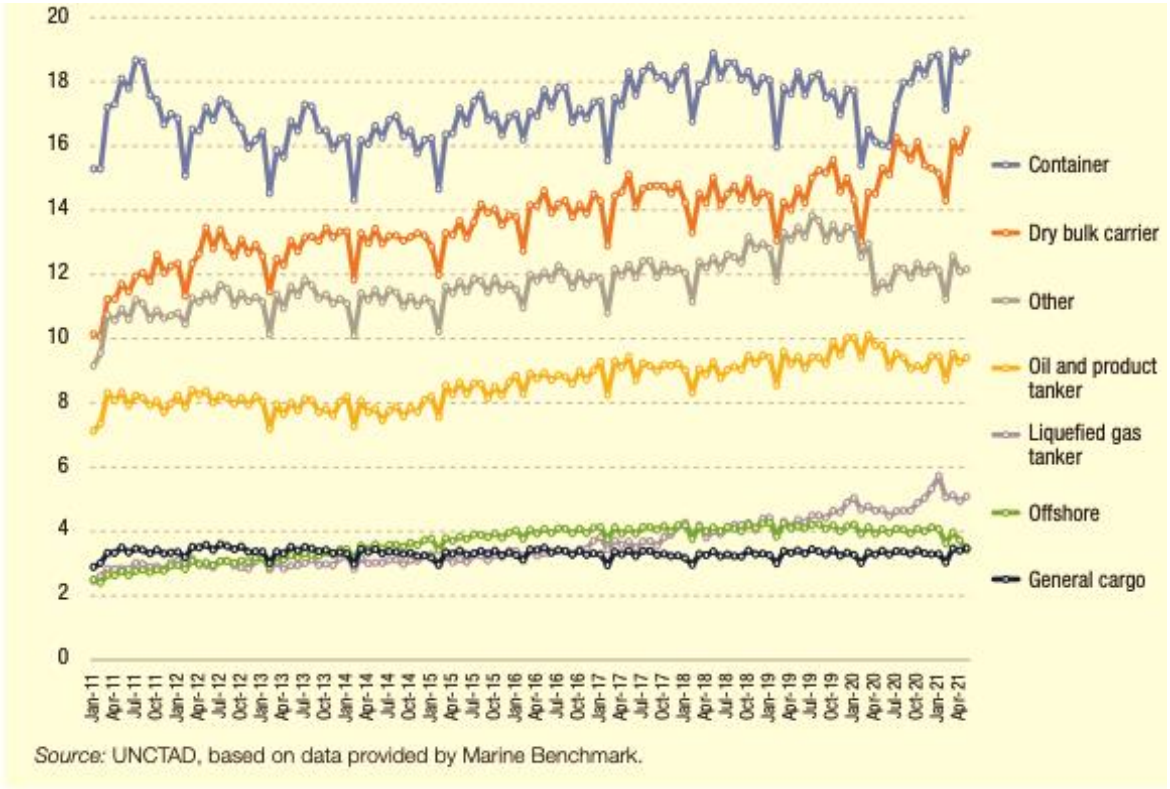
Graph: Carbon dioxide emissions by vessel type, monthly, million tons, 2011 - 2021



Source: UNCTAD (Graph from Maritime Transport 2021)

To conclude, investment decisions and strategy in shipping now are much more complex, as there are a larger number of unknown and potential risks as well as regulatory constraints that require investors to formulate a view. Time will tell if such view shall be borne out in reality. Nevertheless, the change in complexity has made ship investments even more challenging but also more exciting with enormous up and down sides.