All change

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The history of the maritime industry is a long and illustrious one, and strongly correlated with the developments of the human race. The progress of the maritime industry, the primal disseminator of information and undisputable mass conduit of international trade since historical times, has been based both on the technological innovations of shipbuilding and naval architecture over the centuries (ie building bigger, safer, more economical and specialised vessels) but also on the establishment of sound commercial practices, not least of them the progress of financial innovation.

Accelerating change

While naval architecture and marine engineering have progressed over the last couple of decades to the extent that now they are taken for granted, the magnitude, and possibly the significance, of events in the commercial aspect of the maritime industry in the last few years has dwarfed those of previous business cycles.

In particular, since the beginning of 2004, the growth of world trade and the subsequent monumental increases in freight rates, and in turn vessel asset prices and the multiplier effect on vessel orderbook, has bequeathed us recently with commercial, financial, legal, and to a certain extent, regulatory issues that require urgent but fair and practicable answers. For instance, the outstanding vessel orderbook has a nominal contract value of as high as $500 billion, by some estimates, while only part of this orderbook has in place sufficient equity and debt commitments for contract fulfillment. With anaemic freight markets and possibly still dysfunctional financial markets, there is great uncertainty over the true value of still-to-be-financed contracts, vessels under construction, and also vessels already on the water in search of a new owner. Placing an appropriate value on vessels is an academic exercise, but, in this case, it is also a practical matter. Given i) lenders unwilling to underwrite nothing less than very strong credits, ii) the cost of equity increasing, iii) an orderbook level that is projected to multiply the size of the fleet of certain types of vessels in the coming years, and iv) a projected demand for cargo transport rather imperiled in the near and intermediate future, placing the "right" value on vessels might hold the key to clearing the excesses of a burst bubble and starting the new cycle on a more even keel. If world trade is to continue increasing in the decades to come, shipowners will have to be compensated sufficiently for the risk of their investments, and financiers will have to be ensured that they will receive their principal repayments with fair compensation throughout the business cycle. This means that placing a value on vessels is becoming a crucial but nevertheless sensitive assignment.

What is value?

When referring to the "value" of an asset, a vessel in this case, the generally accepted definition of the value refers to the price at which a "willing buyer" and "willing seller" at an "arm's length" transaction "cognisant of all relevant facts" and under "no compulsion to act" would agree to exchange the vessel alone in a prompt manner. This definition is normally called the "Fair Market Value" (FMV) of the vessel. Although there are several variations on this to accommodate for certain intricacies, there are three main valuation methods that have been academically arrived at, but also have sustained the test of the commercial applicability:

Replacement Cost

The guiding principle of this method is that the present market value is related to the cost of "replacing" or having the vessel "rebuilt" and "restored" to its present state. This method is mostly applicable to vessels that are purpose-built, transact fairly infrequently and where there is a lack of sufficient commercial information. The principal critique of this method is that it is retroactive (historical) and assumes that just because a vessel cost a certain amount to build, a buyer would actually pay a similar price. On the other hand, the replacement cost method, with all its embedded imperfections, indicates that the market value of an asset cannot substantially vary from what it would cost to replace it. If there is a major dislocation in the secondary market in terms of pricing, a similar vessel can always be "built" anew, or so the logic goes.

Market Comparable Approach

The Market Approach is the most popular valuation method. Put simply it is based on the most recent similar transaction, or ideally set of transactions. The strongest argument in favour of this valuation methodology is that what a buyer paid for the acquisition of a similar asset is simple and "tangible"; no more or less than the price last time a similar asset was transacted. Although such a method (also known as "last done" method) is as pure as it gets, the devil is in the details. What if the previous deal had happened six months ago, in which case, freight, financial and asset markets may have changed substantially? What if the previous transaction was for a vessel of the same class, but 10 years older? There is a great degradation of asset pricing within the same asset class by vessel age, and thus a "significantly" newer or older vessel would not exhibit the same desirability. What if the seller was keen to accept a lower payment for a prompt transaction if they were in financial dire straits? The definition of Fair Market Value quoted above clearly states a

transaction under "no compulsion" and a seller experiencing financial difficulties is keener to take compulsory action. Despite the shortcomings of this valuation approach, it is difficult sometimes to argue otherwise when there is an example of a similar transaction that happened recently.

The Baltic Exchange Sale & Purchase Assessment (BSPA), published weekly, is strictly based on the market comparable approach for five-year old vessels in both the tanker and dry bulk markets.

Additionally, as a rule of thumb, standard loan agreements with Loan-to-Value (LTV) clauses usually stipulate that the Market Comparable Approach is to be utilised for determining the value of the vessels for loan purposes.

Income Approach

From a financial perspective, if one were to acquire an asset as an investment, what would be a fair price to pay in order to acquire the asset, a vessel in this case? Apparently, no more than the expected cash flows the investment (vessel) would generate, properly adjusted to reflect the amount of risk undertaken, the cost of financing and the opportunity cost. The importance of this method is that a "rational" investor would seek intrinsic "value" instead the current market "price" of the vessel, a clear subtlety in terminology that has made fortunes for investors in many an industry besides the shipping industry. As with each valuation methodology, the income approach is also subject to limitations and interpretations. How much profit a vessel would generate over its remaining life depends on many factors such as freight rates and the financial cost of owning the asset. For a buyer, the implicit assumption is that freight rates would be sufficiently high (otherwise, they would steer clear of the acquisition); however, it is also a case of getting the future "strength" of the freight market fairly accurate since another, more optimistic, buyer would offer and acquire the vessel at a higher price. Similarly, the cost of owning and operating the vessel entails fine assumptions on the availability and competitiveness of financing and vessel operating expenses. It's apparent, then, that although the Income Approach is academically the most rigorous among the three valuation methods, it requires an in-depth understanding and projection of a series of inputs both on the revenue and the expense side of future income statements. And such inputs, when projected over the vessel's total economic life, can have a material impact on the value of the vessel. There are several variations on the Income Approach Method, the most notable being the "Hamburg Rules", specific guidelines provided by the Hamburg Shipbrokers' Association for applying the income approach method.

	Tanker Vessel Type		Dry Bulk Type	
Valuation Method	AFRAMAX Tanker (105,000 dwt)	VLCC (300,000 dwt)	PANAMAX Bulker (70,000 dwt)	CAPESIZE Bulker (170,000 dwt)
Market Approach (FMV)	$52.00	$96.00	$40.00	$65.00
Replacement Cost	$50.00	$94.00	$35.00	$55.00
Income Approach	$46.00	$91.00	$42.00	$105.00

Note: Values in US$ millions for vessel delivered in January 2010. Author's estimates, without prejudice

Comparing like with like?

For terms of comparison, the above table provides the author's assessment, with no prejudice, of the value for four types of prompt resale vessels in both the tanker and dry bulk sectors, based on each valuation method. For the Income Approach, standard industry assumptions were utilised in terms of operating expenses, and also traditional mortgage financing with 15% discount rate was applied; as a proxy of future freight rates, the average one-year timecharter for each type of vessel for the (approximately) past 10 years was utilised. Each methodology renders a fairly similar result for each type of vessel, with the exception of capesize vessels. The sizeable aberration for this value is a reflection of the historically high freight rates of the last 10 years, which included the super-cycle and China's insatiable appetite for raw material, and iron ore in particular. In other words, if the average freight rate for capesize vessels over a newbuilding's economic life were to equal the average of the last 10 years, then capesize vessels are strongly undervalued by the replacement cost and market comparable approaches.

There is usually no definite and easy agreement of the value of an asset or a vessel in advance of originating a project. It usually takes the liquidation of the investment after the projected investment horizon to definitely determine whether the price paid for the vessel was close enough to her intrinsic value. Similarly, there cannot be complete agreement on the true value of a vessel, especially in such illiquid and uncertain times as these. Value is intrinsic and ultimately is a measure of whether an investment has achieved its projected profitability and objectives.

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One vessel, three values?