

# What's in the value of a vessel?

Since the start of the financial (and shipping) recession about a year go, a lot of attention has been drawn to placing values on commercial vessels.\*

In normalised and efficient markets, the price of a vessel is simply what a buyer, cognisant of the relevant facts and under no compulsion to act, would pay to acquire the asset from a knowledgeable seller equally under no compulsion to act.

In less active markets there are infrequent transactions to maintain a clearly delineated asset price curve, while several other variables may remain highly uncertain and fluctuate liberally (ie freight rates, availability of debt financing, etc); valuing a vessel in such a market can become an intellectual and sophisticated assignment and subject to numerous counter arguments. Since vessel valuations have been used heavily for accounting and financial purposes, arriving at a proper vessel valuation has thus had practical consequences as well.

Valuing assets, and shipping assets ie vessels, has been the subject of professional standards and well-established practices. There have been both commercial and academic guidelines to providing an assessment of the value (Fair Market Value) of a vessel. In normalised markets, the commercial and academic values usually converge to the purchase price that a rational, well-informed investor (buyer) would pay for the acquisition of the vessel.

However, in a world of high volatility and uncertainty (ie shipping rates, future estimates of earnings, financial inputs and reality, etc), there is room for the 'animal spirits' to push market values to widely aberrant levels from the intrinsic value of the vessel; while in early 2008 the sky was the limit in terms of values, presently we are talking on how low vessel prices will get.

The three widely accepted asset (and thus vessel) valuation methods - Market Approach, Replacement Cost and Income Approach - can provide a different perspective and insight into the value of a vessel, and each one of these methods has its own strengths and intrinsic limitations at the same time.

## Market Approach

Under the Market Approach method, a vessel is valued in comparison to the recent sale

of a comparable vessel, adjusted for age, cargo carrying capacity, vessel specifications, etc. In overall efficient markets, or in shipping sectors and shipping assets that are fairly liquid, the 'last done' transaction can offer a definite guide for the value of a comparable vessel.

As an illustration, Aframax are the workhorse of the crude oil trade and in general there are transactions with a semblance of regularity to provide guidance for asset pricing and valuations. For other assets, such as LPG carriers that are not bought and sold very often even during 'normal' markets (the reasons being - a niche market, comparatively small fleet, comparatively small number of buyers and sellers, higher barriers to entry, long term relationship business, etc), the Market Approach is less helpful.

During inactive markets, the Market Approach faces additional limitations due to continuous uncertainty in the market despite the 'last done'; one needs to keep in mind that in illiquid markets a month's lapse since 'last done' can be tantamount to eternity as opposed to a normal market when a month's lapse is just the continuance of the status quo.

While the Market Approach is the tangible proof of what the 'market' would bear for the vessel, the critique for this method is equally important: during uncertain times weak sellers are keener to sell than stronger players and therefore, the weak players get to 'write the history' book while stronger players can afford not to act if sellers' price ideas are deemed too low. Further, in certain instances, motivation to sell in anemic markets might not necessarily reflect a sellers' compulsion to sell due to weakness, but the execution of a strategy that was put in place in different market conditions.

There were examples of drybulk vessel sales earlier this year when the owners were just exercising in-the-money purchase options on vessels (options that were priced in 2002 before the super-cycle and subsequent correction took place) and immediately 'flipping' the vessels for a profit, or owners who were selling tankers that were built at the shipowners' yard, were

trading captive cargoes, and were financed 'in-house' with 'negative carry' and thus had a low 'cost basis'.

## Replacement Cost

The Replacement Cost method is mostly applicable to vessels that are uniquely suited for certain trades and projects; usually, they have been vessels heavily customised for such trades, and therefore there are a narrow demand in the event of a sale. A notable example of vessels that the author has valued based on the replacement method include drybulk vessels that had been fitted with accommodation and hotel services for 120 people, quarter-deck ramp to load vehicles and tanks, helipad, containership capacity, heavy lift, and steel-reinforced, humidified cargo holds for the carriage of dynamite (the vessels were on long-term bareboat charter to an operator with a contract to supply with provisions military bases in the Pacific). Under the replacement cost method, the vessel is valued on the assumption of the value of the vessel is simply the cost of supplanting a replacement vessel in the present market environment. The obvious critique of such valuation method is that cost to replace the vessel is not necessarily the price that a third-party buyer would pay; in short, the historical cost is not necessarily a market number; in the valuation example above, without the military contract, the vessel would have limited commercial value, the high replacement value notwithstanding.

## Income Approach

The method of most interest for vessel valuations is the value (the net present value, properly) of all net earnings the vessel is presumed to generate during her remaining commercial life plus her residual value itself (salvage value). While the Income Approach method is the most academically rigorous method available, and widely accepted as the proper method of determining the value of assets, vessels included, arriving at appropriate inputs to the financial model can heavily impact the value of the vessel.

The most crucial assumption in modeling

Income Approach is of course the projection of freight revenue, which in turn is based on assumptions of future market conditions of tonnage supply (available vessels to compete for same cargoes, etc), tonnage demand (subject to world economic conditions and trade and also trading patterns), and also the chartering strategy of the buyer (spot market, sequence of short-term charters or very long-term charters). The cost and availability of debt finance will be another major input in the Income Approach financial modeling.

Additional assumptions include operating expenses (such as crewing and insurance expenses, bunker fuel expenses), the commercial life of the vessel (taking into consideration that regulatory framework and technological innovation can impact the longevity of a vessel), and projections on the residual value of the vessel (resale value in case of an after-sale or scrap value for demolition). Therefore, while the Income Approach offers a fundamental and well documented approach for the value of the vessel, there is a sizeable amount of inputs and assumptions that still can render a vessel valuation subjective.

**Valuation standard**

In an effort to provide a uniform set of criteria for the Income Approach method, in early 2009, the Hamburg Shipbrokers Association (Vereinigung Hamburger Schiffsmakler und Schiffsagenten, VHSS) established the Hamburg Ship Evaluation Standards (also known as the Long Term Asset Value, LTAV) by narrowing the guidelines on the income approach method.

In brief, for presently charter-free vessels, the estimate for future earnings can be substituted by the historical average earnings and operating expenses of the last 10 years for each type of vessel. It is assumed that the cost of financing will also reflect historical 10-year LIBOR

Valuation method	Tanker type		
	MR Tanker (52,000 dwt)	Aframax Tanker (105,000 dwt)	VLCC (300,000 dwt)
Market approach (FMV)	\$34.00	\$53.00	\$96.00
Replacement cost	\$37.00	\$52.00	\$98.00
Income approach	\$34.00	\$46.00	\$91.00
Hamburg rules	\$59.00	\$80.00	\$150.00
Pfandbrief Act	\$34.00	\$53.00	\$96.00

*Note: Values in US\$ million for vessel delivered in 2009. Author's Estimates, without prejudice.*

(4.036%) average plus the bank's margin (1.375%) for an overall debt cost of 5.41%.

Based on 70% leverage, the implied discount rate is 6.6%, at present. Similarly, the historical 10-year average for scrap should be used for the vessel's salvage value, where the overall vessel economic life is to be 20 years adjusted by a vessel-related coefficient (for vessels presently less than 15 years of age) or 25 years for vessels older than 15 years of age at the time of the valuation.

The most frequently mentioned critique of the 'Hamburg Method' is that relying on 10-year averages for freight rates, financing costs and demolition prices rely heavily on the assumption that history repeats itself, and given that the 10-year historical average incorporates never-seen-before market conditions, valuing vessels on such guidelines might resemble driving a car based on the images shown on the rear-view mirror. However, the accounting and auditing firm PricewaterhouseCoopers (PwC) has recently approved the LTAV method, and therefore can be used for banking purposes.

While these methods are based are open to interpretation and can be used depending on the loan agreement terms between the lenders and the borrowers as per agreed, there is a unique valuation method that the author as come upon recently and is mandated by law, in particular the German law under the 'Pfandbrief Act'.

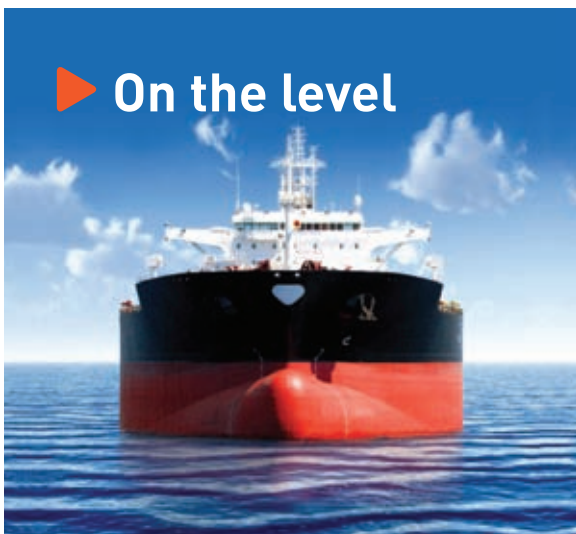
Such valuations as used for issuing bonds in the German capital markets and the law stipulates that the value of a vessel shall be the least of a) replacement cost (construction cost for a newbuilding), b) present market value of the vessel, or c) the average historical value of similar vessels in the last 10 years. Since this method stipulates for the least of the three values, it is usually the least generous valuation method.

For strictly illustrative purposes, the table provides valuations for an MR, an Aframax and a VLCC delivered in 2009. The author has used market data provided by Compass Maritime Services, and has made standard assumptions in terms of financing for the Income Approach as per industry standard practices and prevailing rates.

Based on the table, obviously the argument can be made of what constitutes 'value' these days. But again, 'value' and 'price' are not always equivalent and there is a fortune to be made for those who can take those two concepts apart. After all, Warren Buffett has made a business (and a fortune) out of it!

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