

Hamburg Ship Evaluation Standards

The global financial crisis has caused a virtual standstill in the main segments of the ship sales and purchase market. Ship valuers, sales and purchase brokers and value appraisers were forced to halt valuations for vessels in various segments.

The very few transactions concluded in the above mentioned segments can not be used as representative sales in accordance with a traditional determination of a market value because they were forced sales. Similarly, charter rates which in some vessel segments are on the level of the required operating expenses are also not suitable as basis for a projected Earnings analysis

This was the motivation for the Hamburg Shipbrokers Association (Vereinigung Hamburger Schiffsmakler und Schiffsagenten, VHSS) in collaboration with Ship appraisers as well as representatives from Shipping Banks, Ship Owners and Finance Houses, to create a value assessment (Long Term Asset Value) which beyond short term market fluctuations. The Long Term Asset Value is determined on the grounds of vessels long term earnings potential, using a present value respectively DCF method customised to account for the requirements of vessel valuation. In order to incorporate the volatility of the shipping cycle in this assessment, a conservative, statistically proven and transparent approach was used.

This approach “Long Term Asset Value” does not aim to replace the standard evaluation methods established on rules of Shipping Banks or governing legislation used during normal market activity. Instead, “Long Term Asset Value” can be used both, during times of a working shipping environment with normal market conditions, as well as during times of dysfunctional/irregular conditions, if a conservative, unbiased and statistically proven approach is needed. In dysfunctional/irregular market conditions, may these be excessively high or low markets, this evaluation can be used to obtain representative figures.

A dysfunctional/irregular market, which makes traditional evaluations impossible, exists when at least two of the following scenarios apply:

- a) An uncharacteristically low number of Sales candidates in comparison to the overall fleet within one category of vessel, over a period of at least three months means that there is a severe imbalance between willing sellers and willing buyers.
- b) Transactions in which either the Seller or Buyer are knowingly under time pressure, constraint or in urgent need to conclude a deal, driven by personal or corporate distress. Prices do not reflect vessels characteristics.
- c) A difference of 30% between current transaction prices and the “Long Term Asset Value” lasting for at least three months.
- d) An uncharacteristically low number of market participants, based on total number of parties within a market over a three month period
- e) The absence of essential, regular market conditions (e.g. unavailability debt financing for a large number of market participants)

For the computation do the „Long term Asset Value“ (LTAV), the following formula has been derived:

$$LTAV = \sum_{t=1}^T \frac{(C_t - B_t)}{(1+i)^t} + \frac{RW_t}{(1+i_{i=T})^T}$$

C_1 = Current Net-TC-Rate in running year (Base: ConTex; Baltic Dry Index (BDI); other proven data etc.)

C_{2-T} = Average-Net-TC-Rate of the past 8-10 years (if possible, otherwise shorter)

B_t = Average-OPEX of the last 8-10 years (if possible, otherwise shorter)

i = Discount rate

t = period (t_1 current year; t_{2-T} : period end)

T = Remaining period until Age 20/25 Years

RW_T = Residual value, based on LDT, average USD scrap price/ldt and multiple (ldt in long tons, 1t= 0.9842 lt)

Charter Income Ct:

Charter free vessel:

t_1 = Using current indices (Base: ConTex; Baltic Dry Index (BDI); own date etc.)

t_2 = Average 10 year charter rate

Existing Charter

With a existing charter fixed to a Charterer with a reliable credit rating, the existing charter should be considered until its completion.

After completion of the charter, the income for the remaining period should be calculated based on the 10 year average charter rate for the given vessel type.

Operation Costs B_i :

The operation costs are derived using the average of the past 10 years, including a linear breakdown of regular Class renewal and Drydocking costs.

Discount Rate i :

Currently the discount rate is at 6.6% and is defined as follows

The cost of debt is defined at 10 year USD LIBOR average (4,036%) plus a 1.375% bank margin, resulting currently in a rate of 5,411%.

The cost of equity consist of the 10 year average interest rate of the 10 year US-government bond (4,63%) further adding a risk premium of 3%, currently resulting in 7,63%.

For the determination of the internal rate of return, a typical Ship Finance model was assumed and consequently weighed with 70% debt and 30% equity. To reflect the overall conservative approach, a 0.5% risk premium was added, bringing the current discount rate to a total 6.6%.

Residual Value RW_T :

Two methods are offered to calculate the residual value. Up to a vessels age of 15 years Method A should be used, for vessels older than 15 years as Method B should apply-

A) 20 Years Period:

Using an investment horizon until the vessels has reached 20 years of age, the residual value of the relevant vessel shall be determined by the scrap value (ldt*Avg.-10 year scrap value) multiplied by a coefficient.

The coefficient for different vessel types is based on proven statistical data of market transactions for 20 year old vessels respectively scrap prices.

The statistical data, currently allow the following coefficients

Container Ships	3.7
Bulk Carriers	3.45
Tankers	2.0

If not statistical data is available for specialised vessels, a conservative coefficient of 2 should be used.

B) 25 Years Consideration Period

Using an investment horizon until the vessel has reached 25 years of age, the residual value of the relevant vessel should be evaluated on the average scrap value of the past 10 years.

For earning during the vessels 21st -25th year of age the average charter rate shall be reduced for bulk carriers by 30% and for Container vessels and Tankers by 15%.

It is recommended that Ship appraiser should use Method A for vessels up to the age of 15 years unless in his best judgement and expertise he considers an earnings projection up to an age of 25 years reliable on the basis of available data.

Annual earnings are calculated on 360 running days except in years of class renewal (every 5 years), when only 345 days are counted.