



Om Parkash Verma

IBBI Registered Valuer

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Master Of Valuation (Real Estate)

VALUATION OF IMPORTED MACHINERY & PROCESS PLANTS

- Machinery and Equipment valuation field is vast. Number and types of machines are huge, if not infinite. There are machines which produce goods, there are others, including tools, which provide services. All these come under the domain of PME valuation.
- Valuation is an act or process of developing an opinion of value. Value can be said to be the monetary worth of the property, goods or services. Valuation can comprise any or all of the following: Determination of Value; estimation of reproduction or replacement cost; earning power of the property.
- With the continuing rise of imports of machinery and equipment into the country, the field of valuation of machinery and equipment has expanded. Data of imports of electrical and non-electrical machinery from 2011 to 2022, as published by RBI is as under:

Value of electrical and non-electrical machinery imported into India from financial year 2011 to 2022

(in billion Indian rupees)



The imports of machinery are on the rise, for which, valuation is necessarily required at the first point of entry into the country, i.e. Customs, however, it brings with it the arduous task of determining fair value of imported machinery and equipment, particularly, in respect of used and refurbished machines.

The Customs Department have their in-house Valuers, but they have also expressed difficulties in conduct fair valuation of the imported machinery. Central Board of Custom's Circular 07/2020 dated 05.02.2020 states that:

For the goods being valued as used second hand machinery, particularly those reconditioned, refurbished, modernized, or otherwise improved prior to their importation into India, it may be difficult to find data relating to sales of such goods to India, which could be considered identical or similar. Basis of subsequent sales of identical or similar goods in India, may also not be possible because the goods being appraised are imported for use rather than for resale

Given the nature of challenges in computing the value of second hand machinery there is need to ensure that the approach applied reflects commercial reality and results in a value which is fair.

For this purpose, the Board decided that Inspection Reports issued by Chartered Engineers, based in the country of sale of the second hand machinery shall be accepted, or Importer shall be free to engage the services of any Chartered Engineer from those empanelled by the Custom House of the port of import

It is obvious from the above, that Valuation of used Plant and Machinery is a tedious exercise. The Valuer has to study not only the new replacement cost or its age or condition or the refurbishments done but also the potential profitability which a Custom officer is unlikely to foresee

Users of Valuation of Machinery and Equipment:

Main users who need the valuation of machinery are Lenders, Resolution professionals & Liquidators; Companies for Merger, acquisition & impairment loss assessment; Stamp duty assessment for Sub-registrar offices, etc.

Most of the times, however, the Lenders need the valuation on the following occasions:

Cost wetting before sanction of loan

(ii) Pre-Disbursement of loan

(iii) Post disbursement periodic valuation

(iv) Settlement of loan

(v) Liquidation

- Valuation during Stage (i) to (iii) are routine exercise and hardly involve any repercussions.
- However, Valuation at stage (iv) and (v), i.e., Settlement or Liquidation is most important, contentious and often debated, as the borrower or the intending buyer would often say that value fixed is higher.
The above situation can often happen, if we base our value estimation on the asked prices of similar machines by used machinery dealers or the various websites dealing in used machinery. These should however be looked from the following perspective:
- Buyer, for own use of second-hand machinery, would normally approach used machinery dealers instead of waiting for some public auction to happen.
- Normally, buyers in auctions of used machinery comprise of dealers of used machinery. They refurbish and recondition to make it suitable for use. It costs additional money.
- The dealer will keep the machine till it is sold. So there is holding cost.
- The above factors inflate the cost of his acquisition. He also has profit motive. Thus, the quoted prices by dealers of used machinery in market are often higher than they can fetch at the place of use – in use or non-functional.

What Information of Machine is Required?

- For Valuation of any imported machinery, new or used, the Valuer / Chartered Engineer would normally need invoice of the machine, if available.
- If invoice is not available, the following information would be sought:
 - (i) Name and address of Manufacturer of the machine
 - (ii) Year of the manufacture of machinery
 - (iii) Specifications / other description of machine, preferably from Manufacturer's plate affixed on the machine
 - (iv) Expected life-span based on its inspection.

Approaches to Valuation:

Income Approach

Market Approach

Cost Approach

Data for Income or Market approach is invariably not available, so Cost approach is often applied. It is based on the principle of substitution.

Replacement cost assumes the maximum price of an asset to a knowledgeable buyer to purchase or construct a new asset of equal utility.

Inputs / Replacement Cost:

When the asset is not new, the replacement cost new must be adjusted for all forms of depreciation and obsolescence attributable to the asset as on the date of the valuation.

In its simplest form, the cost approach can be represented as follows:

Cost new – Depreciation = Value

The starting point or basis of the cost approach is reproduction cost (new) or replacement cost (new), or a combination of both.

Replacement Cost Estimation:

Ideal approach would be to obtain fresh quotation of same machine from same manufacturer / supplier, or

If the machine of same specification is discontinued and replaced with new model with better or inferior specifications, quotation for new machine can be used to adjust its price based on the capacity and productivity of new model with that of the machine under valuation. For Domestic machinery, replacement cost can be found out by contacting supplier but it is hardly possible to obtain the same from foreign suppliers within the timeframe afforded by clients for submission of the report.

Sources to get replacement cost:

- Seek quotation from manufacturer or from its local office, if available. Many suppliers seek your profile, which can be provided as an Industrial Consultant Search web for 'used machinery under sale', it often provides quotes of same or similar machines
- Search web for companies who went public for setting up similar projects. Some times, we find data for same machines in their red herring prospectus, though it could be a few years old.
- Search local machinery trading websites- Indiamart, etc.
The old import shipment data at www.zauba.com could also be helpful
Efforts can be made to visit exhibitions of machinery in own and nearby cities
- If previous suggestions do not help, one can use Cost inflation index.
- When applying Cost inflation index, variation in exchange rate of foreign currency be considered.
- For imported machinery, the following cost inflation index are often utilized:
- Marshall & Swift Index – published by California State Board of Equalisation
- Producer Price Index for machinery (different lists are available for different equipment) – source Federal Reserve economic data, USA

- Metal and scrap prices can be accessed at MMR review Weekly published in India, if needed.

Other Sources:

- Magazines published by industrial associations – Cement, Steel, Paper. Many of these provide details of project being set up and costs thereof. Websites like India times.com provide, many a times, price of similar new machinery.

Magazines published in India and abroad:

IBEF, CRISIL, ICRA, CARE Reports

PV Magazine for Solar power

Examples are given based on personal experience

So, it is an exercise of - try, try again and get it.

Example:

Mercom website mentioned, "According to one manufacturer, 100 MW solar cell plant calls for investment of Rs. 800 million. However, a 100 MW solar cell facility will not have the economies of scale to compete with imported cell prices, especially Chinese Cells."

Another website, Machinio quoted "Price of a Tabber stringer 4BB, refurbished, ex Germany at Rs. 17,71,091/- in 2021, whereas the same Stringer was imported 7-8 years back for cost in crores of rupees."

- Consideration of Obsolescence is most important. It can be technical – new technology supersedes old one; Economic – loss of value due to external factors like shrink age in demand of product or passage of new legislation or economics of industry; or functional – caused by inefficiency or inadequacy of usefulness, when compared to more efficient or less costly replacement

If market data from sales of certain machines suggests depreciation or obsolescence in excess of the physical deterioration, the difference represents aggregate of functional and economic obsolescence.

Depreciation & Obsolescence:

- Technological developments have led to shortening the useful lifespan of machinery and equipment in various fields and particularly in IT industry, Healthcare sectors, Renewable energy, where the equipments become obsolete quicker than others. Power purchase agreements by Renewable energy sector at rock bottom rates of energy have led to closure and

sale of many smaller thermal power plants at price of scrap. Another impact of technological developments has been reduction in demand and resultant value reduction of equipment of old technology

Depreciation, other than obsolescence, i.e. loss in value due to usage, wear and tear over time, takes place at different scale for different equipment, based on its demand, the volatility in market price of its material of construction, rate of wear and tear etc. For example, equipment fabricated out of stainless steel and having no or minimum moving parts, like in dairy industry, the rate of depreciation would be low. Consideration has also to be given, whether the wear and tear and value reduction is high initially and at decreasing rate subsequently. In another case, the value reduction could be almost at constant rate. Depreciation should be considered accordingly by declining balance or straight line method.

Traditional approach to deduct depreciation and obsolescence (as per ASA)

Assume that the following has already been established by the appraiser:

Reproduction Cost New:

1,50,000

Replacement Cost New: 1,40,000

Physical Deterioration : 50%

Functional Obsolescence: 20%

Economic Obsolescence: 10,000

Traditional Cost approach calculations will be as under:

Replacement Cost New : 1,40,000

Less Physical Deterioration @ 50%: - 70,000 70,000

Less functional obsolescence 20%: - 14,000 56,000

Less Economic obsolescence: - 10,000

Replacement Cost New less Dep./Obs.: 46,000

It is seen from above that physical depreciation, physical and economic obsolescence are deducted in order and are not added together and deducted from replacement cost. The logic behind the sequence is derived from normal life-cycle of machine. When a machine is placed in service, it begins to depreciate. Physical deterioration takes place until something happens in the marketplace or environment to trigger functional or economic obsolescence. New versions of machine cause functional obsolescence and external factors like shift in demand and govt. regulations trigger economic obsolescence, which is last to impact the property.

Valuation of Process Plants:

Process plants typically utilize complex machines and equipment to convert raw materials into high-value products. Both the raw materials and the finished products

may be global commodities whose price varies based on supply, demand, and competition; thus the industry's economics and the value of the process plants are influenced highly by outside forces, beyond the control of the individual plants.

The individual items of machinery and equipment in a process plant tend to lose their identity and are viewed as part of an entire system rather than individual components

- When valuing a process plant, The Valuer must ask:
"What would a modern replacement be, what would it cost, and how would its operating expenses differ from those of the subject plant?" The answers to these questions are useful in quantifying functional obsolescence. Economic obsolescence also may exist when raw material prices increase while prices and demand for products produced remain steady or grow at a slower rate, reducing the process plant's profitability. Sometimes sale transactions of similar plants, of higher or lower capacity may also provide useful inputs for valuation.

Fair Value:

More often than not, the Value derived after depreciation and obsolescence, should provide the fair value as on date of Valuation. If date of Valuation is current date or near about it, one can seek price of used machinery from used machinery dealers or the asked price listed at websites, if any, for comparison with one's estimated value. The quotation of seller of used machinery has to be considered with caution, based on self-assessment of additions to its fair value for his profits, refurbishment and holding cost.