

2. VALUATION APPROACHES AND METHODS

- The three approaches described and defined below are the main approaches used in valuation as per IVS. They are all based on the economic principles of price equilibrium, anticipation of benefits or substitution. Consideration must be given to the relevant and most appropriate valuation approaches. The principal valuation approaches are:

1. Market Approach, 2. Income Approach, and 3. Cost Approach

☐ Each of these valuation approaches includes different, detailed methods of application.

- The goal in selecting valuation approaches and methods for an asset is to find the most appropriate method under the particular circumstances. No one method is suitable in every possible situation. The selection process should consider, at a minimum:

- a) the appropriate basis(es) of value and premise(s) of value, determined by the terms and purpose of the valuation assignment,
- b) the respective strengths and weaknesses of the possible valuation approaches and methods,
- c) the appropriateness of each method in view of the nature of the asset, and the approaches or methods used by participants in the relevant market, and
- d) Reliable information.

☐ Valuers should consider the use of multiple approaches and method and more than one valuation approach or method should be considered and may be used to arrive at an indication of value, particularly when there are insufficient factual or observable inputs for a single method to produce a reliable conclusion. Where more than one approach and method is used, or even multiple methods within a single approach, the conclusion of value based on those multiple approaches and/or methods should be reasonable and process of analysing and reconciling the differing values into a single conclusion, without averaging, should be described by the valuer in the report.

2.1 Market Approach

- This approach provides an indication of value by comparing the asset with identical or comparable (that is similar) assets for which price information is available.

- The market approach should be applied and afforded significant weight under the following circumstances:
 - a) the subject asset has recently been sold in a transaction appropriate for consideration under the basis of value,
 - b) the subject asset or substantially similar assets are actively publicly traded, and/or
 - c) there are frequent and/or recent observable transactions in substantially similar assets.
- ☐ The additional circumstances where the market approach may be applied and afforded significant weight:
 - a) Transactions involving the subject asset or substantially similar assets are not recent enough considering the levels of volatility and activity in the market.
 - b) The asset or substantially similar assets are publicly traded, but not actively.
 - c) Information on market transactions is available, but the comparable assets have significant differences to the subject asset, potentially requiring subjective adjustments.
 - d) Information on recent transactions is not reliable (hearsay, missing information, synergistic purchaser, not arm's-length, distressed sale, etc).
 - e) The critical element affecting the value of the asset is the price it would achieve in the market rather than the cost of reproduction or its income producing ability.
- Even in circumstances where the market approach is not used, the use of market based inputs should be maximized in the application of other approaches (such as, market-based valuation metrics such as effective yields and rates of return).
- When comparable market information does not relate to the exact or substantially the same asset, the valuer must perform a comparative analysis of qualitative similarities and differences between the comparable assets and subject asset. It will often be necessary to make adjustments based on this comparative analysis. Those adjustments must be reasonable and valuers must document the reasons for the adjustments and how they were quantified.
- This approach uses market multiples derived from a set of comparable, each with different multiples. The selection of the appropriate multiple within the range requires judgement, considering qualitative and quantitative factors.

2.1.1 Market Approach Methods

- The method used under this approach is Comparable Transactions Method. This method is also known as the guideline transactions method. It utilizes information on transactions involving assets that are the same or similar to the subject asset to arrive at an indication of value.
- The comparable transaction method can use a variety of different comparable evidence, also known as units of comparison, which form the basis of the comparison. For example, a few of the many common units of comparison used for real property interests include price per square foot (or per square metre), rent per square foot (or per square metre) and capitalization rates. A few of the many common units of comparison used in business valuation include EBITDA (Earnings Before Interest, Tax, Depreciation and Amortisation) multiples, earnings multiples, revenue multiples and book value multiples. A few of the many common units of comparison used in financial instrument valuation include metrics such as yields and interest rate spreads.
- The units of comparison used by participants can differ between asset classes and across industries and geographies.
- The key steps in the comparable transactions method are:
 - a) identify the units of comparison that are used by participants in the relevant market,
 - b) identify the relevant comparable transactions and calculate the key valuation metrics for those transactions,
 - c) perform a consistent comparative analysis of qualitative and quantitative similarities and differences between the comparable assets and the subject asset,
 - d) make necessary adjustments, if any, to the valuation metrics to reflect differences between the subject asset and the comparable assets,
 - e) apply the adjusted valuation metrics to the subject asset, and
 - f) if multiple valuation metrics were used, reconcile the indications of value.
- A valuer should choose comparable transactions within the following context:
 - a) evidence of several transactions is generally preferable to a single transaction or event,
 - b) evidence from transactions of very similar assets (ideally identical) provides a better indication of value than assets where the transaction prices require significant adjustments,

- c) transactions that happen closer to the valuation date are more representative of the market at that date than older/dated transactions, particularly in volatile markets,
 - d) for most bases of value, the transactions should be “arm’s length” between unrelated parties,
 - e) sufficient information on the transaction should be available to allow the valuer to develop a reasonable understanding of the comparable asset and assess the valuation metrics/comparable evidence,
 - f) information on the comparable transactions should be from a reliable and trusted source, and
 - g) actual transactions provide better valuation evidence than intended transactions.
- A valuer should analyze and make adjustments for any material differences between the comparable transactions and the subject asset. Examples of common differences that could warrant adjustments may include, but are not limited to:
 - a) material characteristics (age, size, specifications, etc.),
 - b) relevant restrictions on either the subject asset or the comparable assets,
 - c) geographical location (location of the asset and/or location of where the asset is likely to be transacted/used) and the related economic and regulatory environments,
 - d) profitability or profit-making capability of the assets,
 - e) historical and expected growth,
 - f) yields/coupon rates,
 - g) types of collateral,
 - h) unusual terms in the comparable transactions,
 - i) differences related to marketability and control characteristics of the comparable and the subject asset, and
 - j) ownership characteristics (such as legal form of ownership, amount percentage held).
 - This method utilises information on publicly-traded comparable that are the same or similar to the subject asset to arrive at an indication of value.
 - Difference between Comparable transaction method and guideline publicly-traded comparable method:

- a) the valuation metrics/comparable evidence are available as of the valuation date,
- b) detailed information on the comparables are readily available in public filings, and
- c) the information contained in public filings is prepared under well understood accounting standards.

☐ The method should be used only when the subject asset is sufficiently similar to the publicly-traded comparables to allow for meaningful comparison. ☐ The key steps in the guideline publicly-traded comparable method are to:

- a) identify the valuation metrics/comparable evidence that are used by participants in the relevant market,
- b) identify the relevant guideline publicly-traded comparable and calculate the key valuation metrics for those transactions,
- c) perform a consistent comparative analysis of qualitative and quantitative similarities and differences between the publicly-traded comparable and the subject asset,
- d) make necessary adjustments, if any, to the valuation metrics to reflect differences between the subject asset and the publicly-traded comparable,
- e) apply the adjusted valuation metrics to the subject asset, and
- f) if multiple valuation metrics were used, weight the indications of value.

☐ A valuer should choose publicly-traded comparables within the following context:

- a) consideration of multiple publicly-traded comparables is preferred to the use of a single comparable,
- b) evidence from similar publicly-traded comparables (for example, with similar market segment, geographic area, size in revenue and/or assets, growth rates, profit margins, leverage, liquidity and diversification) provides a better indication of value than comparables that require significant adjustments, and
- c) securities that are actively traded provide more meaningful evidence than thinly traded securities.

☐ A valuer should analyze and make adjustments for any material differences between the guideline publicly-traded comparables and the subject asset. Examples of common differences that could warrant adjustments may include, but are not limited to:

- a) material characteristics (age, size, specifications, etc.),
- b) relevant discounts and premiums,

- c) relevant restrictions on either the subject asset or the comparable assets,
- d) geographical location of the underlying company and the related economic and regulatory environments,
- e) profitability or profit-making capability of the assets,
- f) historical and expected growth,
- g) differences related to marketability and control characteristics of the comparable and the subject asset, and
- h) type of ownership.

2.1.2 Other Market Approach Considerations

The following are the non-exhaustive list of certain special considerations that may form part of a market approach valuation:

- i) Anecdotal or “rule-of-thumb” valuation benchmarks are sometimes considered to be a market approach.
- ii) adjust for differences between the subject asset and the guideline transactions or publicly-traded securities.
- iii) Some of the most common adjustments made in the market approach are known as discounts and premiums.

2.2 Income Approach

- Under the income approach, the value of an asset is determined by reference to the value of income, cash flow or cost savings generated by the asset.
- The income approach should be applied and afforded significant weight under the following circumstances:
 - a. the income-producing ability of the asset is the critical element affecting value
 - b. value from a participant perspective, and/or reasonable projections of the amount and timing of future income are available for the subject asset, but there are few, if any, relevant market comparables.
- ☐ Additional circumstances where the income approach may be applied and afforded significant weight:
 - a) the income-producing ability of the subject asset is only one of several factors affecting value from a participant perspective,
 - b) there is significant uncertainty regarding the amount and timing of future income-related to the subject asset,

- c) there is a lack of access to information related to the subject asset (for example, a minority owner may have access to historical financial statements but not forecasts/budgets), and/or
- d) the subject asset has not yet begun generating income, but is projected to do so.

2.2.1 Income Approach Methods

☒ Methods under the income approach are effectively based on the discounting future amounts of cash flow to present value.

2.2.1.1 Discounted Cash Flow (DCF) Method

Under the DCF method, the forecasted cash flow is discounted back to the valuation date, resulting in a present value of the asset. i. The key steps in the DCF method are:

- a) choose the most appropriate type of cash flow for the nature of the subject asset and the assignment (i.e., pre-tax or post-tax, total cash flows or cash flows to equity, real or nominal, etc.),
- b) determine the most appropriate explicit period, if any, over which the cash flow will be forecast,
- c) prepare cash flow forecasts for that period,
- d) determine whether a terminal value is appropriate for the subject asset at the end of the explicit forecast period (if any) and then determine the appropriate terminal value for the nature of the asset,
- e) determine the appropriate discount rate, and
- f) apply the discount rate to the forecasted future cash flow, including the terminal value, if any. ii. Type of Cash Flow:

- a) Cash flow to whole asset or partial interest
- b) The cash flow can be pre-tax or post-tax
- c) Nominal versus real
- d) Currency

iii. Explicit Forecast Period: Valuers should consider the following factors when selecting the explicit forecast period:

- a) the life of the asset,
- b) a reasonable period for which reliable data is available on which to base the projections,
- c) the minimum explicit forecast period which should be sufficient for an asset to achieve a stabilised level of growth and profits, after which a terminal value can be used,

- d) in the valuation of cyclical assets, the explicit forecast period should generally include an entire cycle, when possible, and
 - e) for finite-lived assets such as most financial instruments, the cash flows will typically be forecast over the full life of the asset.
- iv. Cash Flow Forecasts: the projected cash flow will reflect one of the following:
- a) contractual or promised cash flow,
 - b) the single most likely set of cash flow,
 - c) the probability-weighted expected cash flow, or
 - d) multiple scenarios of possible future cash flow.
- v. Terminal Value: The terminal value should consider:
- (a) whether the asset is deteriorating/finite-lived in nature or indefinite-lived, as this will influence the method used to calculate a terminal value,
 - (b) whether there is future growth potential for the asset beyond the explicit forecast period,
 - (c) whether there is a pre-determined fixed capital amount expected to be received at the end of the explicit forecast period,
 - (d) the expected risk level of the asset at the time the terminal value is calculated,
 - (e) for cyclical assets, the terminal value should consider the cyclical nature of the asset and should not be performed in a way that assumes “peak” or “trough” levels of cash flows in perpetuity, and
 - (f) the tax attributes inherent in the asset at the end of the explicit forecast period (if any) and whether those tax attributes would be expected to continue into perpetuity.
- vi. Valuers may apply any reasonable method for calculating a terminal value. The three most commonly used methods for calculating a terminal value are:
- (a) Gordon growth model/constant growth model (appropriate only for indefinite-lived assets),
 - (b) market approach/exit value (appropriate for both deteriorating/finite-lived assets and indefinite-lived assets), and
 - (c) salvage value/disposal cost (appropriate only for deteriorating/finite-lived assets).
- vii. Discount Rate:
- (a) the capital asset pricing model (CAPM),
 - (b) the weighted average cost of capital (WACC),
 - (c) the observed or inferred rates/yields,

- (d) the internal rate of return (IRR),
- (e) the weighted average return on assets (WARA), and
- (f) the build-up method (generally used only in the absence of market inputs). viii.

In developing a discount rate, a valuer should consider:

- (a) the risk associated with the projections made in the cash flow used,
- (b) the type of asset being valued. For example, discount rates used in valuing debt would be different to those used when valuing real property or a business,
- (c) the rates implicit in transactions in the market,
- (d) the geographic location of the asset and/or the location of the markets in which it would trade,
- (e) the life/term of the asset and the consistency of inputs. For example, the risk-free rate considered would differ for an asset with a three-year life versus a 30-year life,
- (f) the type of cash flow being used, and
- (g) the bases of value being applied. For most bases of value, the discount rates should be developed from the perspective of a participant.

3.1 Cost Approach

The cost approach provides an indication of value using the economic principle that a buyer will pay no more for an asset than the cost to obtain an asset of equal utility, whether by purchase or by construction, unless undue time, inconvenience, risk or other factors are involved. The approach provides an indication of value by calculating the current replacement or reproduction cost of an asset and making deductions for physical deterioration and all other relevant forms of obsolescence.

- a) The cost approach should be applied and afforded significant weight under the following circumstances:
 - participants would be able to recreate an asset with substantially the same utility as the subject asset, without regulatory or legal restrictions, and the asset could be recreated quickly enough that a participant would not be willing to pay a significant premium for the ability to use the subject asset immediately,
 - the asset is not directly income-generating and the unique nature of the asset makes using an income approach or market approach unfeasible, and/or
 - the basis of value being used is fundamentally based on replacement cost, such as replacement value.

b) Additional circumstances where the cost approach may be applied and afforded significant weight:

- participants might consider recreating an asset of similar utility, but there are potential legal or regulatory hurdles or significant time involved in recreating the asset,
- when the cost approach is being used as a reasonableness check to other approaches (for example, using the cost approach to confirm whether a business valued as a going-concern might be more valuable on a liquidation basis), and/or
- the asset was recently created, such that there is a high degree of reliability in the assumptions used in the cost approach.

3.1.1 Cost Approach Methods

Three cost approach methods:

- i) replacement cost method:** a method that indicates value by calculating the cost of a similar /asset offering equivalent utility, **ii) reproduction cost method:** a method under the cost that indicates value by calculating the cost to recreating a replica of an asset, and
- iv) summation method:** a method that calculates the value of an asset by the addition of the separate values of its component parts.

-COST CONSIDERATIONS

- The cost approach should capture all the costs that would be incurred by a typical participant. The costs are majorly divided into direct and indirect.
- An asset acquired from a third party would presumably reflect their costs associated with creating the asset as well as some form of profit margin to provide a return on their investment.
- The actual costs incurred in creating the subject asset (or a comparable reference asset) may be available and provide a relevant indicator of the cost of the asset. But a few adjustments must be made so that the cost fluctuations between the date on which the cost was incurred and the valuation date and any exceptional

costs or savings that are reflected in the cost data, but would not arise again, can be reflected.

-DEPRECIATION/OBSOLESCENCE

Depreciation adjustments are normally considered for Physical, Functional and Economic Obsolescence. It should consider physical and economic life of the asset.

PHYSICAL OBSOLESCENCE can be measured in two ways:

1. Curable: Cost to cure/fix the obsolescence.
2. Incurable: Adjustment for physical obsolescence is equivalent to the proportion of the expected total life consumed.

-FUNCTIONAL OBSOLESCENCE

- Excess capital costs: caused by changes in design, material, technology, resulting in the availability of modern equivalent assets with lower capital costs than the subject asset,
- Excess operating costs: caused by improvements in design or excess capacity resulting in availability of modern equivalent assets with lower capital costs than the subject asset.

-ECONOMIC OBSOLESCENCE

Economic obsolescence arises when external factors affect an individual asset or all the assets employed in the business and should be deducted after physical deterioration and functional obsolescence.