VALUATION 101

A Comprehensive Guide to Valuation Fundamentals

KNAV
PARTNERS BEYOND BOUNDARIES

Preface

We are pleased to present this guide to valuation fundamentals, meticulously crafted to address the questions and intricacies encountered by clients and valuers alike. Over the past two decades, we have gathered a wealth of insights from the queries and comments we have encountered during our valuation engagements, from both our clients, auditors and the valuation fraternity.

This publication is a direct response to those real-world questions, aimed at shedding light on these issues, providing clear and practical insights on topics that frequently arise. The queries and responses may seem intuitive to many but serve as a crucial foundation for valuation. As part of our journey, we have experienced a vast array of questions: ranging from simple decisions about the most appropriate method for valuing a business, to more intricate and nuanced aspects, like the inclusion of unissued options for a waterfall analysis. The answers to some of these may be intuitive, but the vast majority of them can be construed as open ended and circumstantial and may have more than one appropriate response.

Within these pages, we embark on a comprehensive exploration of 101 critical inquiries that lay the groundwork for valuation, providing a robust framework for appraisers to navigate the complexities of this discipline. The contents of this document are structured on a scale of novice to expert: it begins with preliminary requirements for a valuation and ends with discussions about financial instrument valuations and purchase price allocations.

This document serves as a great resource for accounting and finance professionals seeking to deepen their understanding of valuation principles and methodologies, providing practical insights and expert guidance to navigate the intricacies of valuation engagements effectively.

If you have any questions, comments or suggestions, please reach out to us at valuations@knavcpa.com.

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Preliminary requirements

Before commencement of a valuation engagement, the appraiser must consider a myriad of factors. This section aims to answer some basic guidelines, principles, and processes that an appraiser generally follows at the start of the valuation exercise.

1. When do you need a valuation?

- Valuation can be conducted for compliance and transaction purposes. While compliance-related valuations are often driven by regulatory requirements and accounting standards, transactional valuations are more focused on value discovery.
- Companies are often required to report the value of their assets and liabilities for financial reporting purposes. This may include the valuation of assets such as intangible assets, goodwill, and certain financial instruments.
- Valuations are also required for taxation and other regulatory requirements, including foreign exchange laws. For example, in India, the Income Tax Act and the FEMA regulations require a fair valuation exercise. Similarly, in the US, the IRS requires valuations for certain M&A transactions, and for 409A purposes.

2. What are some critical aspects that an appraiser considers before commencing a valuation exercise?

- The purpose of the valuation involves clearly defining the reason for the exercise and lays the groundwork for subsequent analyses. Whether it's for a sale, acquisition, financial reporting, or other objectives, the purpose guides the methodology and approach.
- The valuation date is an important aspect in capturing an accurate snapshot of value, as market conditions, financial performance, and external factors fluctuate frequently, which may have a significant impact on the valuation.
- The standard of value identifies value vis-à-vis the person it is sold to. For example, if the valuation assumes that the business is sold to a market participant, the value derived is termed 'fair value'. Other standards of value include fair market value and investment value.
- The premise of value identifies how a business is being sold: either as one functioning business or sold off in pieces. Simply put, it represents the set of circumstances and underlying assumptions under which the valuation is performed, like whether the target is being valued on a going concern, or liquidation basis.

3. Does the purpose of value have an impact on the valuation?

- Valuations can be conducted either for compliance, financial reporting or M&A transactions. Each of these has their own set of definitions, approaches and assumptions that are required to be used to determine the valuation. These inputs may result in different value conclusions for different purposes.
- For example, a particular company may be valued at USD 10 million for an M&A transaction, but the same company value could be lower/higher, when valued for financial reporting purposes.

4. How does the valuation date impact the valuation?

- The valuation is always as at a particular date. An appraiser will use market inputs, such as the risk-free rate, and information and data available as of the valuation date to determine the value conclusion.
- In fact, valuations for financial reporting purposes adopt the concept of 'known and knowable' which specifically restricts an appraiser from using any information (external or internal) which was not known or knowable as of the valuation date.
- Since valuations are impacted by market inputs used, a change in valuation date may result in a change in such valuation inputs, which will directly impact the value conclusion.

5. What are the commonly used standards of value for regulatory/compliance and financial reporting purposes?

- The most used standards of value include fair value and fair market value.
- In simple terms, fair value, per accounting standards, reflects the estimated value of an asset or liability based on market prices, or methods that employ the use of market assumptions and inputs.
- Fair market value represents the hypothetical price an asset would fetch in an open market where both buyer and seller act freely and have enough information and entails the use of company specific inputs and assumptions in valuation model.
- The standard of value is dictated by the relevant accounting standard/tax law/statutory regulation and may have a significant impact on the value conclusion. For example, using the industry capital structure instead of the target company debt-to-capital ratio, may result in a significantly different discount rate.

6. What are the commonly used methods of valuation?

- The most used methods of valuing an asset include the income, the market, and the asset/cost approach.
- The income approach values an asset based on the present value of its expected future cashflows. The most widely used method within this approach is the Discounted Cash Flow (DCF) analysis, where future cash flows are discounted to their present value using a risk adjusted discount rate.
- The market approach is a relative approach, that values an asset based on its traded prices, or comparable transactions or businesses in the market, assuming that the market prices paid are reflective of the asset's fair value.
- The cost, or asset-based approach values a business by determining the value of its assets minus its liabilities. This approach is generally used for asset-heavy companies and does not capture future cash-generating capacity of the business.

7. What are the three levels of inputs to valuation?

- **Level 1:** Value derived using Level 1 inputs, i.e., quoted prices in active markets for identical assets is a Level 1 value. As a quoted price in an active market provides the most reliable evidence of fair value, it should be utilized whenever available. Common examples of Level 1 inputs include listed equity securities and open-ended mutual funds with daily published net asset values.
- **Level 2:** Value derived using quoted prices for similar assets in active markets is a Level 2 value. Adjustments to Level 2 inputs vary depending on factors specific to the asset or liability, including the condition or location of the asset, the extent to which inputs relate to items that are comparable to the asset or liability and the volume or level of activity in the markets within which the inputs are observed.
- **Level 3:** Value derived using Level 3 inputs i.e., unobservable inputs is a Level 3 value. Unobservable inputs may refer to use of management provided forecasts.

8. How does the appraiser determine the most appropriate method for the valuation exercise?

Theoretically, different approaches of valuation are expected to yield similar values; however, practically, this may seldom be the case. The choice of a valuation method may depend on a myriad of factors, like the business of the company, the market conditions, availability, and reliability of data, etc.

9. Can more than one approach be used to value a single business or asset?

As a best practice, it is recommended to use more than one approach to determine the value of a business or asset. The values using the approaches should ideally reconcile and be in a close range. The appraiser, based on their analysis and the reliability of inputs used, may apply weights to the various methods used to arrive at the fair value.

10. What is the basis for application of weights when multiple valuation approaches are used?

The values are assigned weights after giving due consideration to the quality and the reliability of the data. Ideally, valuation methods which use the least subjective inputs would yield a more reasonable value estimate, and thus should be assigned a higher weightage, vis-à-vis a method which requires several subjective inputs.

11. What are the different levels of value conclusions?

- The levels of value are conceptual points at which the value of business interest can be calculated. There are three basic levels of marketability and control:
  i. the controlling interest (a controlling share in a public company or private company)
  ii. the minority, marketable interest (minority share in a public company)
  iii. the minority, non-marketable interest (a minority share in a private company)

12. Why is it necessary to determine the level of value?

- The value of an asset is influenced by the level of control exercised by the owner. Similarly, the marketability of an asset also influences its value.
- Consequently, the value conclusion should be adjusted for control and/or marketability, or the lack thereof. The appraiser uses discounts or premiums to account for such adjustments.

13. What are the different discounts used in a valuation to account for control and marketability?

- The concept of discount for lack of control arises due to the rationale that a minority ownership interest may have less influence over decision-making and operational control in a company compared to a controlling interest.
- The discount for lack of marketability accounts for the lack of a readily available market for the sale of the subject asset.
- The use of such discounts may be necessary for valuation of illiquid and closely held assets. However, their use may also be required by guidelines and regulations to value other financial instruments.
- For example, the valuation of employee stock options, or ESOPs issued by privately held companies, typically use such discounts to account for the fact that employees generally do not exercise control over the company, and such ESOPs are not easily marketable.

14. What is the difference between marketability and liquidity?

- Marketability and liquidity are related concepts, both of which deal with the ease with which an asset can be bought or sold in the market. However, there are certain subtle differences.
- Marketability is the distinct 'salability' of the asset, i.e., the ease with which it can be easily sold or discarded. Liquidity, on the other hand, deals with realization of the asset into cash, as fast as possible, at current market prices, without losing value.
- An asset being illiquid does not mean non-marketable; it may still be saleable but not quickly or without loss of value.
- Marketability is particularly relevant to private markets or less-liquid assets, where the ability to sell an asset may be more challenging.

15. What is the difference between enterprise value (EV) and equity value?

- Enterprise value is the value attributable to all stakeholders of the company, including debt and equity holders.
- Equity value is the value attributable only to the equity shareholders of the company.
- The choice between which of these measures is the best metric, depends on the specific financial analysis or valuation context.
- EV is useful for assessing the total value of a business, irrespective of its capital structure. Equity value, as the name suggests, focuses on the residual of assets over liabilities, and is commonly employed for stock valuation or assessing the performance of a company's equity shares.
- The difference can be best explained using the following formulae:

  Enterprise value = Equity value + Debt - Cash and cash equivalents

  Equity value = Number of shares outstanding * Value per share
- The market value of invested capital (MVIC) is another terminology used by various analysts/appraisers. MVIC adds cash balances of a company to the enterprise value and provides a more comprehensive view.

16. What are the different methods under the income approach?

There are two commonly used methods under the income approach:

Discounted cashflow method: This method values the company using a series of cashflows over a period of time, discounted using an appropriate risk factor.

Capitalized cashflow method: Instead of using a series of cashflows, this method relies upon a single, often normalized level of cashflow which the company expects to generate, into perpetuity. This cash flow is then capitalized by dividing it by the capitalization rate, which is derived from the discount rate.

17. What are the different methods under the market approach?

There are three commonly used methods under the market approach:

Guideline public company method (GPCM): This method values a business based on trading multiples derived from publicly traded companies that are similar to the subject company.

Guideline transaction method (GTM): This method values a business based on transaction multiples derived from the sale of companies that are similar to the subject company.

Own stock method: This method involves determining the market price of an entity based on its traded price on the stock exchange over a reasonable period and is applicable for listed entities.

18. Do contingent liabilities affect the value conclusion?

- Contingent liabilities are potential future obligations that depend on the occurrence or non-occurrence of certain events.
- Such liabilities may have a significant impact on the value of a business, particularly when the expected outflow from such events is large, or the outcome may cast a doubt on the solvency or liquidity of the company.
- However, the estimation of probabilities and expected cash outflow from such events is a difficult and subjective process. The treatment of such line items depends on the judgement of the appraiser, and the nature of the engagement.

Income approach

This section discusses how an asset is valued using the income approach, including the mechanics of how income streams are analyzed, projected, and discounted to arrive at a present value. Key concepts include understanding cash flows, assessing risk factors, selecting appropriate discount rates, some common adjustments and interpreting the results.

19. What are the primary inputs required for an income approach: discounted cashflow valuation?

- **Forecast:** The forecast provides the appraiser with management's expectations of operating profitability, the level of capital expenditure and depreciation and working capital requirements.
- **Discount rate:** It is used as a measure of risk to present value the cashflows.
- **Balance sheet as of the valuation date:** It represents the financial position of the company as on the valuation date, and the appraiser must ensure that all items of the balance sheet are accounted for in the valuation.

20. What are the different levels of cashflow for an income approach?

- Free Cash Flow to Firm (FCFF) and Free Cash Flow to Equity (FCFE) are the two most common measures of cash flow used in business valuation.
- FCFF represents the cash generated by a business that is available to all providers of capital, including both equity and debt holders. It does not account for interest expenses, additional loans, and principal repayments.
- FCFE represents the cash generated by a business that is available to its equity holders, including common shareholders and preferred shareholders. It accounts for all finance expenditures, including interest and repayments of loans.

21. What is the impact of debt on the working capital?

- Long-term debt, as well as current maturities of long-term debt are financial liabilities, and thus must be reflected separately in the valuation, and thus not included as part of working capital, which represents investment required to sustain or grow operating cashflows of the company.
- However, some short-term sources of financing, like bank may be included by the appraiser in the working capital assumptions, as they provide a constant source of financing to maintain operations and business activities.

22. How should capital expenditure and depreciation be reflected in the terminal year?

- The terminal year marks the anticipated stage in the business life cycle when the company is expected to reach maturity, generating a stable level of cash flows.
- During this phase, the business is unlikely to undergo significant growth spurts. Capital expenditure is primarily directed towards sustaining current operations rather than expansion. Consequently, it is reasonable to assume only maintenance capital expenditure in the financial model.
- Such capital expenditures would ideally be similar to the long-term depreciation estimate since the capital expenditure is only incurred to either replace or repair assets.
- As a result, depreciation may be estimated at around 90% to 95% of the maintenance capital expenditure. The exact estimate is subject to the appraiser's judgment, considering the specific circumstances of the business.

23. What is the rationale for mid-year convention adjustment?

- The mid-year convention assumes that cash flows occur uniformly throughout the year, with an average timing at the midpoint.
- This is based on the idea that, on average, cash flows are received through the year, rather than generated at a point in time. In absence of a mid-year convention, the discounting factor assumes that the cashflows occur on the last day of the year, which may not be reflective of the actual scenario.

24. What should an appraiser consider as the long-term growth rate for terminal year?

- A suitable long-term rate should encompass two things – real growth and expected inflation, over a longer horizon. The risk-free rate accounts for both elements.
- There typically exists a range for the terminal year growth rate – appraisers look at future inflation estimates, long term growth rates from IMF and World Bank as well as computing the long-term rate using publicly available sources of data.
- The risk-free rate is widely accepted as a reasonable estimate, but there may arise certain cases where the valuation may warrant the use of a more prudent estimate.

25. How are Net Operating Losses (NOLs) treated in a valuation?

- Net Operating Losses represent losses incurred by a company that can be used to offset future taxable income.
- Valuing NOLs and incorporating them into a valuation involves assessing the potential tax benefits associated with such losses. The appraiser must evaluate the applicable tax environment and regulations. Tax laws may dictate the utilization of NOLs, including any carryforward or carryback provisions, limitations on usage, and expiration timelines.
- The effective tax rate of the company is a crucial input in this calculation. Once potential tax benefits are calculated, future savings are discounted back to present value using WACC.
- The sum of these savings is then added to the total enterprise value or equity value conclusion.

26. When is the terminal year calculated using the Gordon Growth model?

The Gordon Growth model, or the Dividend Discount Model, is typically used to calculate the terminal value when the subject company is expected to achieve maturity after the discrete period and thus generates stable cashflows.

27. When is the terminal value calculated using H-model?

- The H-Model, also known as the Two-Stage Dividend Discount Model, is generally used to calculate the terminal value when the subject company is expected to generate high growth post the discrete period of 3-5 years, which is then followed by stable growth. The H-Model introduces a transition phase between high growth and stable growth, providing a more nuanced approach to estimating the terminal value.
- The H-Model provides a more flexible framework than the traditional Gordon Growth Model by incorporating a transition period, recognizing the reality that growth rates often decline gradually rather than abruptly. It is particularly useful for valuing companies that are expected to go through distinct phases of growth in the future.

28. When is the terminal value calculated using an exit multiple?

- The exit multiple method involves application of a market multiple to a financial metric (such as EBITDA or revenue) expected in the future, and then discounted back using WACC.
- The exit multiple method assumes that the company will be sold at the end of the projection period, and its terminal value is based on the market value of similar companies.
- It is generally used by private equity and venture capital companies.

29. Does the income approach yield a control or minority value?

- The level of value that an income-based approach yields depends on the level of cash flows or earnings being discounted or capitalized.
- Various qualitative factors are required to be analyzed for concluding whether cash flows used in the analysis indicate control cash flow or a minority cash flow.
- If the appraiser can reasonably conclude that there are controlling influences in the estimated cashflows, such as decision regarding expansions, staffing realignment, lease financing, target capital structure, etc. such cashflows are deemed to be control cashflows, and thus, would yield a control value.

Discount rate

The discount rate used for an income approach is a crucial aspect of valuation, and involves analysis of market inputs, target capital structures, and overall risk of the business. It is built using a combination of market inputs and appraiser judgements.

30. What is the Weighted Average Cost of Capital (WACC) and how is the Capital Asset Pricing Model (CAPM) used to determine the WACC?

- WACC is a measure of risk used to discount the cashflows in a valuation, that comprises of the cost of equity, the cost of debt, and other sources of finance.
- CAPM is a financial model used to estimate the cost of equity. It focuses on estimating the expected return for an asset for a given level of risk. It assumes that an investor will demand a premium over the risk-free rate for assuming additional risk for investing in a risky security.
- The basic formula for the CAPM is as follows:
  i. Expected Return = Risk-Free Rate + β× (Market Return − Risk-Free Rate)
  ii. The CAPM can also be modified to include additional risks, like size risk, country risk and company specific risks, and thus is widely used to calculate the cost of equity by appraisers.

31. What is the ideal risk-free rate?

- The ideal risk-free rate represents the return that an investor expects for investing in a risk-less security. The risk-free rate serves as a benchmark for comparing the potential return of other investments, with the expectation that investments with higher risk should offer higher returns.
- In practice, the risk-free rate is often approximated by the yield on a government bond, considering that they have little to no possibility of default.
- However, even government bonds are not truly risk-free, as they may be susceptible to default (for example, bonds issued by Sri Lanka were defaulted on in 2022) but are yet commonly used as a proxy for the risk-free rate.

32. What is the tenor of the bonds considered for the risk-free rate?

- The selection of government bond depends on the longest available bond tenor, and the trading volume of the bond.
- The bonds with the longest available maturity are prioritized since they provide a better understanding of long-term investor expectations, making them suitable for providing a more comprehensive view of interest rate movements over an extended period.
- Bonds with higher trading volumes are more liquid and typically exhibit more accurate and reliable pricing, making them more reliable indicators of the risk-free rate.
- In theory, the longer the duration of the bond, the better; however, such bonds may not be widely traded, and prices may not accurately reflect fair value due to low trading volumes, and hence appraisers often decide to use more widely traded bonds instead.

33. What if the risk-free risk is negative, or the government yield is not available?

- In countries where the real interest rate may be negative, like Switzerland, or countries that run on surplus budgets and thus may not issue bonds for financing, it may be challenging for the appraiser to develop a discount rate.
- The appraiser can consider other economic concepts to build the risk-free rate.
- The risk-free rate in any currency can be expressed as the sum of expected inflation and expected real growth rates. The appraiser can use forecasts from publicly available sources to build the risk-free rate.
- Alternatively, the International Fisher effect can be used, which states that the differences in nominal interest rates between countries can be used to predict changes in exchange rates. The inflation rates between a base country (like the United States) and the domestic currency can be used to interpolate the risk-free rate.

34. How are market returns computed?

- Index returns for a region, or a country are used as a proxy for actual total market returns. An index with a larger number of constituents, from different industries is ideal for this purpose.
- The return is calculated using capital returns and cumulative dividends received/accrued during the lookback period, using measures of central tendency.

35. For computation of market returns and beta, what is an appropriate time frame for historical lookback of returns?

- The appropriate time frame for the historical lookback period when computing market returns and beta depends on several factors, including the nature of the data, the stability of the company or asset being analyzed, and the purpose of the analysis.
- A longer time frame is preferable due to normalization of observations, and completion of trade cycles, which also captures potential outliers.
- The frequency of the data – daily, weekly, or monthly – also affects the computation. Daily prices, though reliable, can be a large dataset to accurately compute, and subject to significant volatility.
- In practice, a common lookback period for historical market returns and beta estimation is around 3 to 5 years. However, depending on the context and considerations mentioned above, analysts may adjust this period.

36. What is beta, and how is it measured?

- Beta measures the sensitivity of an investment's returns to changes in the overall market. A beta of 1 indicates that the investment tends to move in line with the market. A beta greater than 1 suggests higher volatility, while a beta less than 1 suggests lower volatility.
- It is a measure of market or systematic risk, which refers to the risk that is inherent to the market, rather than a particular investment.
- Beta is calculated through regression analysis, which involves comparing the historical returns of the company, against the historical returns of a market index, like the BSE SENSEX. The slope of the regression line represents the beta.

37. What is Blume-adjusted beta, and how is it calculated?

- The Blume-adjusted beta was proposed by Marshall E. Blume, in 1975 in his paper “Betas and Their Regression Tendencies.”
- Blume observed that there was a tendency of betas to converge towards the market beta. He proposed a formula to adjust historical betas to a mean value of 1, which is the market beta, which is expressed as:

  Blume-adjusted beta = Company beta * 2/3 + 1/3
- It suggests that company specific risk factors tend to be less persistent in the long term, particularly as the company achieves a stable state of operations, and thus its return is very closely linked to that of the market.

38. Why do we need to unlever and then relever beta?

- Unlevering the beta negates the impact of financial leverage from the beta of comparable companies. This adjustment allows a clearer understanding of how the stock prices of the companies move in relation to the market irrespective of their capital structure.
- Once unlevered, the beta must be relevered using inputs like debt-equity ratio and the effective tax rate to arrive at levered beta. Relevering the beta is necessary to tailor it to the target company's capital structure.
- By adjusting for financial leverage, the beta is recalibrated to reflect the target company's unique capital structure. This ensures a more reliable and relevant measure of its risk profile in comparison to industry peers.

39. What is a size risk premium, and when is it used?

- A size risk premium is widely used to account for the additional risk associated with investing in smaller companies compared to larger ones. This premium reflects the idea that smaller companies, tend to have characteristics that make them riskier investments.
- Some reasons that warrant the use of a size risk premium may include significant operational risks, lack of scalability, inability to attract talent, and lower financial stability.

40. Does the currency used to project the cashflows affect the discount rate?

- The currency in which the discount rate is built should be aligned with the currency of the forecast used for the valuation analysis.
- There are two basic methods to address foreign currency cash flows in valuations:
  i. Perform the valuation in the local currency, use the local currency discount rate, and then convert the valuation into required currency at the prevailing spot rate.
  ii. Convert cash flows at a forward exchange rate into the required currency and discount the projected cash flows with the same currency discount rate. However, this method is seldom used since forward exchange rates of the currency pair may not be widely available.

41. What is a country specific risk premium, and when is it used?

- A country specific risk premium refers to the additional return that investors may demand to compensate for the specific risks associated with investing in a particular country, due to factors such as political, economic, and social risks that are unique to that country.
- Such risks are more prominent in emerging markets, due to higher levels of uncertainty and volatility.
- The discount rate of the company is typically based on the domestic currency, i.e., the currency in which it earns its cashflows. However, there are instances where cashflows are available in a currency different from the local currency in which the company operates. As a result, the region-specific risk factors are not captured either in the discount rate. In such scenarios, it is imperative that a country risk premium is added.
- A country risk premium is also used when a company operates in several geographies, with cashflows available in a single currency, and consequently is exposed to exchange rate fluctuations.
- It can be calculated using a variety of models, like the country yield spread model, country credit rating model, or the relative volatility model.

42. What is a company specific risk premium, and how is calculated?

- A company-specific risk premium is an additional rate of return that investors demand to compensate for the specific risks associated with investing in a particular company's stock.
- Some factors that warrant the need for a premium may include non-diversification of product lines, stability of earnings, earnings margins, financial structure, management depth and achievability of forecasts.
- There is no specific database or formula to compute this premium, and it is subject to the judgement and analysis of the appraiser and the nature of the engagement.

43. Can the prime lending rate for a geography be used as the de-facto cost of debt?

- The prime lending rate is the interest rate that banks charge their most creditworthy customers, often large corporations, or individuals with excellent credit histories. As a result, it can reflect the general cost of borrowing in the market.
- The prime lending rate for a particular geography is used widely as a proxy for the cost of debt, especially for companies with a strong credit rating. However, if the appraiser determines that the target company has a higher credit risk, it may be suitable to add a premium, or use a different metric as the cost of debt.

44. What is Altman Z-score and how is it helpful in determination of cost of debt?

- The Altman Z-Score is a financial metric and statistical tool developed by Edward Altman in the 1960s. It is primarily used to assess the financial health and credit risk of a company.
- The Z-Score is helpful in the determination of the cost of debt as it provides an indication of the likelihood of a company experiencing financial distress or bankruptcy.
- The Altman Z-Score is calculated based on a combination of financial ratios and factors, and it provides a single numerical value.
- The formula typically includes a company's financial data, such as working capital, retained earnings, EBIT (Earnings Before Interest and Taxes), market capitalization or book value of equity, and total assets.
- The Z-score obtained can be benchmarked against an index, like the S&P Bond ratings, to arrive at a credit rating for the company. From there on, we can compare cost of debt with the credit rating obtained and determine the cost of debt accordingly.

45. How do capital structures affect WACC?

- Debt is generally a cheaper source of financing than equity. Debt financing also has the benefit of interest-deductibility for tax purposes.
- Assigning a higher weight to debt thus reduces the overall cost of capital. However, an extremely high debt-equity ratio indicates higher risks to solvency and liquidity, which may result in a higher cost of equity.
- Companies aim to find an optimal capital structure that minimizes their WACC. The target structure depends on the industry, the level of operations, expansion plans, and the credit rating of the company.

46. Should the weight of debt be based on debt/capital ratio of comparable companies, or the target ratio of the management?

- The purpose of the valuation ideally determines the weight of debt to be used for building the WACC. For example, for the purposes of a purchase price allocation, Ind AS decrees fair value as the standard of value, and thus a market participant assumption must be used. In this case, an appraiser will likely use metrics of the industry.
- However, it is possible, that for other purposes, using the target or actual ratio of the company may be a more appropriate assumption.

Market approach

The approach evaluates an asset's value based on current market conditions, determining what a willing buyer would pay. By analyzing recent transactions of comparable assets or companies, this method offers insights into market trends and pricing dynamics, providing a reasonable assessment of the asset's relative worth.

47. How do appraisers determine the most appropriate multiple to value a company?

- The most commonly used valuation multiples include enterprise value multiples, like EV/Revenue or EV/EBITDA, or the Price-to-Earnings (P/E) multiple.
- P/E, however, may not be an ideal metric for valuation. While it is relatively easy to calculate and interpret, the difference in interest and tax expenses, due to different tax jurisdictions and capital structures makes it difficult to compare a single multiple across the industry.
- The Enterprise value multiples are most comparable across companies, since they do not include interest, tax, and amortization expenses, which often vary due to capital structures and accounting estimates. The decision between EV/EBITDA and EV/Revenue, however, is subjective and is influenced by the size, margins, profitability, and growth rate of the subject company vis-à-vis the comparable companies.
- However, industry specific multiples are also used, to value a company more accurately. For example, embedded value multiples are oft quoted for life insurance companies.

48. What are the different measures of central tendency appraisers use for their analysis?

- The selection of measure depends on factors such as the distribution of the data, the presence of outliers, and the specific requirements of the valuation analysis.
- Mean provides a simple average of the data points and is commonly used when the data is symmetrically distributed and does not have extreme outliers.
- The median is less sensitive to extreme values (outliers) than the mean and is often used when the data is not normally distributed or when there are concerns about the impact of outliers.
- Each measure of central tendency has its strengths and weaknesses, and appraisers often consider multiple measures to gain a more comprehensive understanding of the data.

49. Why do appraisers compute quartiles for multiples?

- Quartiles divide a dataset into four equal parts, providing better insights into the spread and variability of the multiples.
- It is a useful metric when the range of multiples is high, and it may not be accurate to simply use the median or the average as the selected multiple. It can also be used in scenarios where the margins or growth rates of the subject company may be lower than the average/median parameters of the comparable companies.

50. Why are Profit After Tax (PAT) multiples not used frequently by appraisers, since they are better representative of the net profitability for companies, and account for financial leverage?

- PAT multiples are a good representative of the company's profitability, and financial performance, but may not be the most reliable multiple for valuation.
- Different companies may follow different accounting practices, and net income can be influenced by various non-operating items, one-time charges, or accounting choices. This variability can make it challenging to compare PAT multiples across companies accurately.
- PAT multiples account for financial leverage, but it makes it difficult for a like-to-like comparison, as the capital structure of companies and tax rates in different jurisdictions may vary across the industry.

51. While using forward multiples, is there a need to discount the underlying metric?

- The forward multiples are computed using an estimated future financial parameter and the current stock prices. Such financial parameters are not discounted. The forward multiple derived is then applied to the subject company's expected financial metric.
- Using a forward multiple values a company based on its future potential to generate cashflows/revenue/EBITDA, as of the valuation date. Such values are not indicative of value as on a future date.
- For example, a company valued at 3x its Next Twelve Months (NTM) revenue, states that the value of the company today, is worth three times as much revenue it is expected to generate in the future.

52. What is a control premium?

- A control group is expected to manage the organization better as they have the most to lose. They have a vested interest in improving the efficiencies of the organization.
- Advantages like these might beget an investor to pay additional consideration to acquire control, which is termed as a control premium.

53. Does the GPCM approach yield a minority value?

The multiples used for determining the value using GPCM are derived using market prices for publicly traded securities. Such market prices are influenced by minority shareholders, like retail and institutional investors, which generally do not hold a controlling stake. Thus, it is widely accepted that the value derived using these multiples results in a minority value.

54. Does the GTM approach yield a minority value?

The multiples used for determining the value using GTM are derived using the transaction prices for mergers and acquisitions. The transaction in question may involve the acquisition of either a minority or majority stake, and consequently affect the level of value derived for the multiple. An invested capital control premium can be applied to the minority multiple to convert it to a control multiple.

55. Do multiples need to be size adjusted?

- Historical returns on marketable securities indicate that small companies are riskier than larger companies. The multiple used in the GPCM is an inverse of a capitalization rate and vice versa.
- A higher capitalization rate represents higher risk and consequently a lower multiple. Using multiples of guideline public companies leads to overstatement of the subject company's value as the excess risk component for the smaller company is not considered in the capitalization rate.
- Adjustments can be made in the multiples for size differences to reflect the information in the original multiples as if they have been derived from firms of the same size as the subject company.

56. Are unutilized idle assets excluded from valuation?

- A non-operating asset is a class of assets that is not essential to the ongoing operations of a business but may still generate income or provide a return on investment (ROI).
- The value derived from the income approach is based on operating cashflows and does not generally consider the value of such non-operating assets.
- The value derived from the market approach is assumed to be inclusive of each asset, since there exists an implicit assumption that the market has accounted for the value of such assets held by the comparable companies.

Complex securities

Complex securities, such as derivatives, structured products, and hybrid instruments, pose unique challenges in valuation due to their intricate features and non-standardized characteristics. This section aims to shed light on some commonly used financial instruments, and the specialized techniques used to assess the worth of these securities.

57. What are options, and why do they need to be valued?

- Options are financial derivatives that give the holder the right, but not the obligation, to buy (call option) or sell (put option) a specific underlying asset at a predetermined price, termed as the strike price, and within a specified time to expiry.
- Companies that issue or hold options as part of their financial instruments need to accurately report the fair value of these options in their financial statements, and valuations may also be necessary for compliance with tax regulations.

58. What are the different methods to value an option?

- Options can be valued using option pricing models (OPM) like the binomial lattice model, Black-Scholes Merton (BSM) model, or a Monte Carlo (MC) simulation. The BSM model is the most popular OPM, and the most widely used and known method for valuation of options.
- The appraiser assesses a variety of factors, like the nature of the option, the terms of the option, and special considerations like path dependencies, to choose the most appropriate method.
- However, it is important to consider that such models are theoretical in nature and make certain assumptions about market conditions. Actual market prices may deviate from model-generated values due to factors such as market frictions, transaction costs, and changes in market conditions. Additionally, the accuracy of option valuations depends on the accuracy of the input parameters used in the models.
- The choice of option pricing model should take into consideration payout structures, data availability, cost-benefit analysis, and generally accepted valuation methodologies.

59. What are some important inputs used in the valuation of complex securities?

- The time is the most important input within an option pricing model, as it influences the lookback period of calculation of the volatility and the risk-free rate. All else being equal, options with longer time to expiration have higher premiums because they provide more time for the underlying asset's price to move in a favorable direction.
- Volatility measures the degree of variation in the price of the underlying asset. Higher volatility generally leads to higher option prices because there is a greater chance that the option will move into a profitable position before expiration.
- The risk-free rate influences the present value of the potential payoff from holding an option until expiration. The higher the risk-free rate, the higher the discount factor applied to future cash flows, resulting in lower option prices.

60. What is the difference between American and European options?

- A European option may be exercised only at the expiration date of the option, i.e. at a single pre-defined point in time.
- An American option on the other hand may be exercised at any time before the expiration date.

61. What is the difference between asset beta and equity beta?

- The asset beta is the beta of a company on the assumption that the company uses only equity financing. It is the volatility of returns for a company, without considering its financial leverage.
- The equity beta considers different levels of the company's debt. In other words, it includes the impact of a company's capital structure and leverage. Equity beta allows investors to gauge how sensitive a security might be to macro-market risks.

62. What are restricted stock units?

- Restricted Stock Units (RSUs) represent a widely favored form of employee equity compensation.
- RSUs grant employees ownership of the stock as on the grant date, however, they cannot sell the underlying until the vesting conditions have been met. They do not have an exercise price.
- These units come with a predefined vesting period which is typically structured on a time-based model. Vesting may also be contingent upon meeting specific conditions or achieving performance goals.

63. What are stock appreciation rights?

- Stock Appreciation Rights (SARs) are a form of employee incentive plan that provides employees with a financial gain based on the appreciation in the value of a company's stock over a specified period.
- The calculated financial benefit of SARs is derived as the difference between the market price at the date of vesting and the price as on grant date. Such gain is reflective of the stock's appreciation, can be realized by employees and is typically settled in either cash or an equivalent value in company shares.

64. What are warrants?

- Stock warrants are financial instruments that endow the holder with the right, without any obligation, to acquire a specified number of shares in a company at a predetermined price within a defined period.
- They are primarily directed at external entities like investors, and not as a form of employee compensation.
- Offering a dual advantage, stock warrants serve as a means to generate upfront funds during their initial sale. Moreover, if exercised, they contribute additional capital to the issuing company.
- The exercise price of stock warrants is commonly established at a discount relative to the prevailing market price, presenting an incentive for warrant holders.
- Despite granting the right to purchase shares, stock warrants do not confer any entitlement to the appropriation of company profits, such as dividends. Additionally, they do not provide the holder with the right to receive interest payments, focusing solely on the potential appreciation of the underlying stock.

65. What is the binomial lattice method of option valuation?

- The binomial lattice option pricing model assumes that the price of the underlying asset can only move up or down at each time step, creating a binary tree of possible future price paths. The model calculates the option value at each node of the tree, working backward from the final nodes to the present.
- The initial node of the tree represents the current option price. The value calculated at this node is the theoretical price of the option according to the binomial model.
- The binomial model provides a straightforward way to calculate option prices and understand how they change over time. It's especially valuable for American options because it allows for the consideration of early exercise decisions.

66. What is the Black-Scholes-Merton formula for option valuation?

- The Black-Scholes-Merton model (BSM) is widely used for valuing European-style options. BSM takes into account factors such as the current stock price, the option's exercise price, time to expiration, volatility, dividends and the risk-free interest rate to calculate the option's theoretical value.
- The Black-Scholes-Merton model is a foundational tool in option pricing, but it does have assumptions and limitations. It assumes constant volatility and risk-free rate, no transaction costs, and efficient markets, among other things.

67. If BSM can only be used for European call options, how do appraisers use it to value ESOPs, which are typically American options?

A rational investor will ideally exercise a call option when its value is maximum; the value of an option is directly proportional to the time to liquidity. Appraisers often presume that the American option will likely be exercised at the end of its term, which makes them similar to European options, and thus BSM can be used to value American options.

68. How are dividends accounted for in the BSM?

- The BSM traditionally assumes that no dividends are paid out during the life of the option. However, over the years, modifications have been made to the original model to account for the impact of dividends on the value of options.
- If an investor expects dividends over the life of an option, he will pay less for the option on account of the fact that monetary benefits of the dividend accrue to the holder of the shares, not the option buyer.
- The dividend yield is typically based on historical payouts and management expectations of future divident payouts.

69. What is forfeiture factor for ESOPs, and why is it important for computation of compensation costs?

- Forfeiture factor represents the options granted to employees that are expected to be forfeited or canceled before they vest. The assumption is typically expressed as an estimated annual rate at which unvested awards will be forfeited during the expected period.
- It is an assumption provided by the management and may be derived by historical forfeiture rate if the company has a history of granting stock options.

70. What is the Monte Carlo simulation?

- Monte Carlo simulation involves using random sampling to model the uncertainty in the future value of the underlying asset. By simulating numerous possible future scenarios, each with its own set of randomly generated factors, the Monte Carlo method can estimate the distribution of potential option values.
- It involves using random numbers and probability to approximate solutions to quantitative problems. At the end of the simulation, thousands or millions of random trials produce a distribution of outcomes that can be analyzed.
- Monte Carlo simulations are useful when valuing ESOPs with multiple complex conditions, contingent considerations/earnout and financial instruments with performance conditions, like the revenue or earnings thresholds.

Allocation of value for a complex capital structure

The inclusion of some of the abovementioned financial instruments has dilutive effects on the value of the equity, and require careful consideration of each security's rights, preferences, and risks. Appropriately allocating value across the capital structure, stakeholders can gain insights into the relative claims and risks associated with each class of securities, facilitating informed decision-making and capital allocation strategies.

71. What is a complex capital structure?

- A complex capital structure refers to a situation in which a company has issued various types of securities or financial instruments, such as multiple classes of equity shares, convertible debt, warrants, options, or other potentially dilutive instruments.
- These different securities can have varying rights, preferences, and obligations attached to them, leading to complexity in the ownership and control structure of the company, which need to be accounted for separately in valuation.

72. What is a waterfall analysis, and when is it necessary to use it to determine the value of equity shares?

- Allocation or waterfall analysis refers to the systematic distribution of the overall value of an asset, business, or investment among its distinct components, which may include different classes of securities, assets, or stakeholders.
- Companies often have intricate capital structures featuring convertible instruments, options, or preferred shares. These components may hold claims on the equity of the company, necessitating careful consideration of such claims on the valuation assessments.
- Such capital structures necessitate use of a more complex valuation model such as a waterfall approach.

73. What is the common stock equivalent in the context of an allocation exercise?

- Under this method, the equity value is allocated to all equity classes with the assumption that they are equal, as if there were no rights or preferences. It allocates the equity value derived assuming full conversion of preferred shares into common stock at the applicable conversion rate.
- The limitation with this method is that it does not consider the occurrence of a future exit, which might give the equity a greater value, nor the possibility of the common stock's value being reduced by liquidity preferences.

74. What is current value method (CVM) in the context of an allocation exercise?

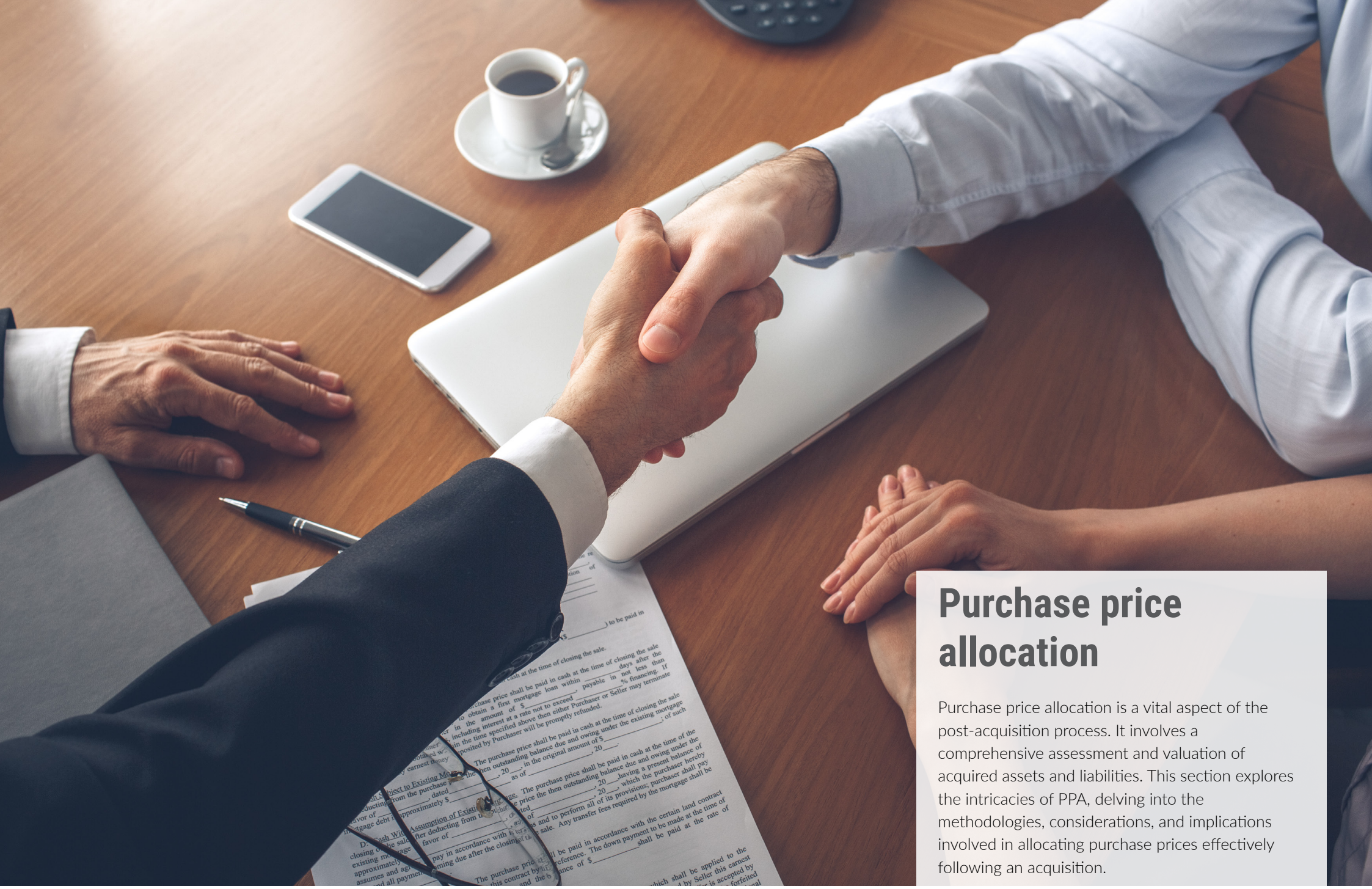
- CVM assumes immediate liquidation, i.e., 100% of the company's equity is sold. The liquidation preferences are considered and the proceeds "waterfall" down the different equity classes until common stockholders receive distributions.
- It is important to consider if preferred shareholders are fully participating or non-participating, as such terms affect the liquidity of lower-claim equity classes. If a preferred stockholder is fully participating, then they receive their initial investment and afterwards participate in the proceeds that are distributed to common shareholders on an as-converted basis.
- If preferred claims exceed the value of total equity, then common shares are deemed worthless. This method is often used when there is an imminent liquidation event or when the company is still at an early stage of development and does not have reason to estimate value beyond preferred shares.
- Under the CVM, the equity value that is allocated to the classes of equity is the equity value as at the current date and not some future date. This method is often used when there is an imminent liquidation event.

75. What is probability weighted expected return method (PWERM) in context of an allocation exercise?

- A company can have several liquidation events and scenarios upon which the amount allocated to each security might differ.
- The PWERM analyses potential scenarios, like an IPO, acquisition, or winding up. Each scenario's value is estimated, considering specific equity class rights and features, that are often defined in the shareholder agreements.
- Probabilities, often influenced by management input, are then assigned to these scenarios. The resulting valuation for each equity class is the sum of probability-weighted expected returns.
- While the PWERM is a forward-looking method, and thus may capture potential upside, it heavily relies on assumptions and is most effective when there are multiple distinct scenarios to be considered.

76. How can an option pricing method be used in the context of an allocation exercise?

- Under this valuation method, both common and preferred stock are treated as call options on the equity value.
- The exercise price of each call option is based on the preferred stock's liquidation rights and preferences and the value points at which equity holders will make decisions regarding their participation in the value. If the preferred liquidation value exceeds the funds for distribution, then common stock is worthless.
- This valuation method is sensitive to volatility and considers many potential exit scenarios. Thus, it is best to use the OPM when future outcomes are difficult to predict, and forecasts are unreliable. The OPM is most appropriate to use when future outcomes are not possible to predict, and the liquidity event is not imminent.



Purchase price allocation

Purchase price allocation is a vital aspect of the post-acquisition process. It involves a comprehensive assessment and valuation of acquired assets and liabilities. This section explores the intricacies of PPA, delving into the methodologies, considerations, and implications involved in allocating purchase prices effectively following an acquisition.

77. What is a purchase price allocation?

The process of assigning fair values to the consideration involved, the liabilities assumed, and the assets acquired is known as the purchase price allocation ("PPA") exercise. It is achieved by following the acquisition method of accounting.

78. What are the steps and practices involved in purchase price allocation?

- The first step for an appraiser includes an analysis of the purchase agreement to identify the assets acquired, the components of purchase consideration, and engaging in discussions with management to identify the rationale for the acquisition, which in turn assist in identifying the intangible assets.
- Considerations for acquisitions often involve multiple components such as cash, equity interests in the acquirer or some other entity related to the acquirer, deferred consideration and earnouts. The various non-cash components need to be fair valued.
- The equity interest will be valued using a single or a combination of valuation methods applied to derive the value of the issuing entity.
- Based on the structure of the earnout, it may be valued using an option pricing model such as Black Scholes option pricing model, Binomial Lattice model or Monte Carlo Simulation.
- The identification of intangible assets is an important step in a PPA exercise and varies according to industry and specific characteristics of the target acquired. Commonly identified intangible assets include existing customer relationships, tradename, and intellectual property.
- The last and final step is to recognize the goodwill or the gain from bargain purchase. Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized.

79. What are the intangible assets that should be recognized for the purposes of financial reporting?

- Intangible assets must meet both separability and contractual-legal criteria, prescribed by the accounting standards.
- Separability entails the capability of assets to be individually transacted, whether through sale, transfer, licensing, rental, or exchange, either in isolation or in conjunction with related contracts, assets, or liabilities. Additionally, the intangible asset must be capable of effective separation from the acquired business, ensuring its viability for independent transactions.
- An asset can also be recognized if it arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.
- Intangible assets that do not qualify for the separability criterion or the contractual-legal criterion discussed above are subsumed into goodwill. Some of the intangibles merged with goodwill are assembled workforce, buyer specific synergies, distribution channels, technical knowledge, and training and recruitment programs.

80. What are the common intangible assets typically identified in a business combination?

- Marketing-related intangible assets are primarily used in the marketing or promotion of products or services. They are typically protected through legal means and, therefore, generally meet the contractual-legal criterion for recognition separately as an intangible asset. Examples include trade names and service marks.
- Customer related intangible assets arise out of pre-existing relationships between the entity and its customers. Examples include customer relationships and order backlogs.
- Artistic-related intangible assets are creative assets that are typically protected by copyrights or other contractual and legal means. Examples include books, musical works and video and audiovisual material.
- Contract-based intangible assets represent value of rights that arise from contractual rights, like licensing, franchising, and royalty agreements.
- Technology based intangible assets generally represent innovations on products or services, like software, or research and development.

81. What is assembled workforce, and why is it not recognized as a separate intangible asset?

- Assembled workforce (AWF) refers to the employees of a company, and is not recognized as an intangible asset, as it does not meet the criteria set forth in the accounting standards, namely separability and contractual-legal criteria.
- Individual employees may have employment agreements with the acquiree, but the entire AWF does not have such a contract.
- Additionally, the AWF is not considered separable – it cannot be sold or transferred as a unit without completely disrupting the acquiree's business.

82. What is the standard of value for a purchase price allocation?

- The standard of value for a PPA exercise is fair value.
- The fair value standard implies that the valuation should be undertaken considering a highest and best use, market participant and an exit value assumption.

83. What is the highest and best use assumption?

- The highest and best use of a non-financial asset considers the use of the asset that is physically possible, legally permissible, and financially feasible. In broad terms, highest and best use refers to the use of an asset by market participants that would maximize the value of the asset or the group of assets within which the asset would be used.
- Moreover, the highest and best use is based on the use of the asset by market participants, even if the intended use of the asset by the reporting entity is different.

84. What is the market participant assumption?

- Market participants are buyers and sellers in the principal (or most advantageous) market who are independent, knowledgeable, and willing and able to transact for the asset or liability. Their actions are not influenced by any specific circumstances of the current owner or seller.
- This assumption presumes that the value of an asset is based on what investors in the market would be willing to pay for it, rather than company specific metrics.
- For example, a competitor may acquire a tradename for the sole purpose of discontinuing it. However, the valuation needs to be conducted based on how similar companies in the market would use it.

85. What is the exit value assumption?

Exit price refers to the price that would be received to sell an asset or paid to transfer a liability. This assumption is based on the idea that fair value should represent the amount that would be received to sell the asset or paid to transfer the liability, not the value to the current owner.

86. What are the methods of valuation for different intangible assets?

- There exist several methods of valuing an intangible asset. These methods can be divided into the three approaches as well, i.e., income, market, and cost approaches.
- The income approach is the most popular method, and includes multi-period excess earnings method, relief from royalty method, and with and without method, amongst others.
- The market approach is not used widely due to unavailability of financial data.
- The cost approach includes two methods – replacement cost and reproduction cost.
- Some factors an appraiser may consider for the selection of methods includes the nature of the asset, availability of data, industry norms and standard practices and professional judgement.

87. What is the multi-period excess earning method (MPEEM)?

- MPEEM is a modification of the traditional discounted cashflow method under income approach. The fundamental premise of MPEEM is that the value of an intangible asset is equal to the present value of the net cash flows attributable to the subject intangible asset.
- The net cash flow attributable to the subject intangible asset are those in excess of the fair returns on all the assets that are necessary to the realization of the cash flows. These assets include not only assets purchased in the transaction, but a group of assets required to realize the cash flows.
- This group of assets includes subject intangible asset as well as other assets that are necessary to support the earnings associated with the subject intangible asset. The prospective earnings of the subject intangible asset are isolated from those of the group of assets by identifying and deducting portions of the total earnings that are attributable to the contributory asset to estimate the remaining or excess earnings attributable to the subject intangible asset. These deductions are referred to as contributory asset charges.
- The excess earnings are discounted to present value at an appropriate rate of return to estimate the fair value of the subject intangible asset.
- It is commonly used for valuing primary intangible assets, like customer relationships and technology.

88. What are contributory asset charges (CACs)?

- The contributory asset charges represent an economic rent for the use of the contributory assets. The CACs should be based on the fair value of the required market participant level of contributory asset.
- The CAC represents the charge that is required to compensate for an investment in a contributory asset, giving consideration to the rate of return required by market participants investing in such assets.
- While the return on is the required return on the fair value of all the contributory assets, the return of is applicable only to those assets whose costs to replenish are not incorporated in the cash flows.
- The return on is analogous to a royalty paid for the use of licensed technology, whereas return of is analogous to the return of principal that is part of each mortgage payment.

89. What is the relief from royalty method?

- The rationale behind the relief from royalty ("RFR") method is that an entity that owns an intangible asset has a valuable right, since the entity does not need to pay a third-party license fee for the right to use that intangible asset.
- Since the entity already owns the asset, it is relieved from having to pay royalty to a third party for the use of the intangible asset.
- The fair value of the intangible asset is measured as the present value of hypothetical royalty payments that the entity is relieved from paying by not having to license the use of the intangible asset from a third party.
- It is commonly used for valuing trademarks, licenses, patents, and franchising agreements.

90. What is the with or without method?

- The With and without method estimates an intangible asset's value by calculating the difference between two scenarios: one that represents the status quo for the business enterprise with the asset in place, and another without it.
- The method is most often used to value non-compete agreements. This method compares the value of the company "with" the non-compete agreement in place – thereby assuming no competition from the key person and "without" the agreement in place – thereby assuming the key person competes with the company.
- The value of the agreement is the difference between the value "with" and "without" the agreement in place.

91. What is the difference between the replacement cost and the reproduction cost method?

- The cost approach uses the concept of replacement as an indicator of fair value. The premise of the cost approach is that an investor would pay no more for an asset than the amount that would be currently required to acquire or construct a substitute asset, with a similar utility or service capacity.
- The difference between the two approaches is that the replacement cost approach directly estimates the current cost to replace the asset at its current obsolescence, while the reproduction cost method adjusts historical expenses to reflect the current cost to recreate the asset.

92. How is assembled workforce valued?

- While assembled workforce does not fulfill the criteria for recognition as an intangible asset, it still needs to be valued, as it is used for calculation of contributory asset charges applied to value the primary intangible asset.
- The value of the assembled workforce is determined by establishing the cost that is avoided in recruiting, hiring, and training/developing replacement personnel. The costs to replace an assembled workforce include the costs to recruit, hire, and train a replacement workforce.

93. What is the relevance of the internal rate of return ("IRR") in a purchase price allocation?

- The IRR analysis is a key valuation tool which assists in evaluating the valuation assumptions which serve as the basis for the underlying cash flows used to measure the fair value of various identifiable intangible assets.
- Since a purchase price allocation is undertaken on a market participant assumption, the IRR analysis assists appraisers to evaluate whether the projected financial information used is on a market participant basis.
- Theoretically, if the projected financial information ("PFI") used is on a market participant assumption, the IRR at which the enterprise value equates the purchase consideration will be aligned with the market participant discount rate.

94. What is the importance of reconciliation between WACC and IRR?

- Since the IRR analysis serves as a tool to ensure the assumptions used for a PPA exercise are based on a market participant assumption, the implied IRR and the WACC should ideally reconcile. There are three possible scenarios:
  i. IRR = WACC: Indicates that PFI reflects market participant assumptions and purchase price is likely representative of the fair value of the acquired business.
  ii. IRR > WACC: Indicates that the PFI may include some or all of buyer-specific synergies, or that the PFI may be too optimistic, or that the purchase was made at a bargain price.
  iii. IRR < WACC: Indicates that PFI may exclude some or all of market participant's synergies, or the PFI may be too conservative, or that the buyer overpaid for the target.

95. What is WARA analysis and how it is utilized?

- Weighted average return on assets (WARA) analysis refers to a corroborative tool used in purchase price allocations, where it helps assess the reasonableness of the selected rates of returns on the individual assets acquired, as well as the proportion of debt/equity used to finance their acquisition. The WARA should ideally approximate the WACC and IRR.
- WARA is the sum of the required rates of return for PPE, working capital (excluding cash), cash and cash equivalents, other assets and liabilities, and intangible assets weighted by each asset's proportionate share of the total value of the entity.
- Intangibles as an asset class do not trade within organized market, and are often acquired through private transactions, making it difficult to build a discount rate for their valuation.
- Typically, the selected discount rate is based upon WACC plus a premium. The premium is added to WACC, because intangibles separated from the business are deemed riskier.

96. What is the tax amortization benefit factor?

- The tax amortization benefit (TAB) factor refers to the tax savings that an owner can avail on the amortization of the intangible assets.
- Generally, the tax amortization benefit is applied when using the income approach and cost approach but is not applied to the market approach. Market-based data used in the market approach is assumed to include the potential tax benefits.
- TAB needs to be factored into an asset's fair value, regardless of the tax attributes of the transaction (e.g., taxable, or nontaxable). The tax benefits should reflect the tax legislation in the domicile where the asset is situated. However, if there are no tax benefits possible i.e., the tax legislation in the subject jurisdiction does not permit market participants to recognize a new tax basis under any circumstance, then the fair value of the assets should not include any tax benefits.

97. What are contingent considerations/earnouts?

- Contingent considerations, also referred to as earn-out payments, are mechanisms employed in transactions to bridge the valuation gap between the buyer and seller arising from differences of opinion regarding the target company's future economic prospects.
- A contingent consideration considers the uncertainty of achievement of certain financial or non-financial parameters which may have been critical to the determination of the transaction price. For example, a portion of the purchase consideration may be payable only on achievement of a predetermined target. Such portion is referred to as a contingent consideration.
- The payment structures in such contingent considerations can become increasingly complex, and it may be necessary for the buyer to retain a valuation analyst to estimate the fair value of the contingent consideration payable.

98. What impact does the structuring of a contingent consideration have on the accounting and valuation aspects?

- In business combination accounting, the structure of the transaction determines whether it is accounted for as contingent consideration (a liability), or compensation (considered a post business combination expense).
- Accounting standards provide indicators that should be considered when evaluating consideration versus compensation. One of the indicators is if the agreement mandates continued employment of the seller, it is typically considered as compensation, and not contingent consideration.
- The determination of whether payments are contingent consideration or compensation requires an understanding of why the payments are included in the arrangement, the structure of the payments, and who is the primary beneficiary of the arrangement.

Impairment

Impairment testing evaluates whether the value of an asset as recognized in the financial statements reflects its fair value. This is generally an annual process, subject to review by the company's auditors.

99. What is impairment analysis, and why is it important?

- Impairment analysis in valuation is the process of assessing whether the carrying value of an asset on a company's financial statements exceeds its recoverable amount. It is a crucial exercise because it ensures that the assets are not overstated and reflect their true economic value and helps provide stakeholders with accurate financial information.
- Impairment analysis is an annual exercise mandated by the accounting standards for goodwill, indefinite lived intangible assets and intangible assets under development.
- For other long-lived assets, impairment testing is conducted when there exists an indication of a fall in its recoverable value, like a substantial decline in the asset's market value, or there have been significant changes with an adverse effect on the entity that have taken place during the year.

100. What is the process of impairment testing?

- The process is generally similar across accounting standards, with minor differences. Generally, the impairment process includes determination of a carrying value, and comparison with the fair value or value in use of the asset.
- An asset or a cash generating unit is said to be impaired if its carrying value exceeds the recoverable value. Recoverable value is defined in the standard as the higher of value-in use or fair value less costs to sell.
- Value-in use refers to the present value of future cash flows expected to be derived from an asset. Fair value less costs to sell is defined as the amount obtainable from the sale of an asset in an arm's length transaction between knowledgeable and willing parties, less the costs of disposal.
- If goodwill is being tested for impairment, the carrying value to be considered is NOT the value of goodwill, but the book value of all the assets and liabilities which contribute to generating value of the asset being tested for impairment.
- The process is slightly different under US GAAP, where the concept of value in use is not a determinant for computing the carrying value.

101. What is the difference between fair value less costs to sell and value in use?

- Estimating the value in use places certain restrictions on the projected financial information used for the purpose of valuation. It requires that cashflows used shall exclude any estimated cash inflows or outflows expected to arise from future restructurings, financing activities, tax outflows, or from improving or enhancing the asset's performance.
- Essentially, value in use focuses on the inherent cash-generating capability of the asset, at present operating capacity, without additional investments like capital expenditure.
- However, fair value less costs to sell focuses more on the exit price, i.e., the market value of the asset as it stands, minus costs of disposal, like commissions, legal fees, and other transaction costs.

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