JANUARY 2022

2022 happy new year

THE VALUATION PROFESSIONAL

YOUR INSIGHT JOURNAL

ICMAI REGISTERED VALUERS ORGANISATION

About ICMAI Registered Valuers Organisation

The Companies Act, 2013 brought into the light the concept of 'Registered Valuers' to regulate the practice of Valuation in India and to standardize the valuation in line with International Valuation Standards. Consequentially, The Ministry of Corporate Affairs (MCA) notified the provisions governing valuation by registered Valuers [section 247 of the Companies Act, 2013] and the Companies (Registered Valuers and Valuation) Rules, 2017, both came into effect from 18 October, 2017.

In view of the above, the Institute of Cost Accountants of India (Statutory body under an Act of Parliament) has promoted ICMAI Registered Valuers Organisation (ICMAI RVO), a section 8 company under Companies Act, 2013 on 23rd February 2018, which is recognised under Insolvency and Bankruptcy Board of India (IBBI) to conduct educational courses on Valuation for three different asset classes - Land & Building, Plant & Machinery and Securities or Financial Assets and to act as frontline regulator as Registered Valuers Organisation. ICMAI Registered Valuers Organisation is an Academic Member of International Valuation Standards Council.

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FROM THE CHAIRMAN's DESK

CS (Dr.) Shyam Agarwal
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Conventional valuation techniques take little account of the unexpected outcomes and uncertainties of real life. Real options are one method of tackling these problems in order to give a realistic view in practice rather than simply in the theoretical world. Tom Copeland in his contribution considers the probability that real options will in the future become the standard method of valuation and of evaluating the financial viability of ventures.

Global mergers and acquisitions (M&A) hit new highs in 2021—breaking prior records by a long shot. The number of announced deals exceeded 62,000 globally in 2021, up an unprecedented 24% from 2020. Publicly disclosed deal values reached all-time highs of US$5.1tn—including 130 megadeals with a deal value greater than US$5bn—a whopping 57% higher than in 2020 and smashing the previous record of US$4.2tn set in 2007. The often-frenzied M&A activity in 2021 was fuelled by intense demand for technology, and for digital and data-driven assets, and the pent-up deal-making demand from 2020 that was unleashed.

FROM THE PRESIDENT's DESK

CMA P. Raju Iyer
Nominee Director
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President
The Institute of Cost Accountant of India

Business valuations are always tricky to determine, but never more so than in times of crisis. Valuation methods typically rely on predicted future earnings, EBITDA and cash flow. Projections are rarely accurate, but are even more tricky to establish during the pandemic because we have very little idea of what the continued impact will be. How long will lockdown and social distancing measures last, and how long will the recession endure beyond that? This is an area where we continue to step into the unknown. As time goes on, monitoring market activity will be key to determine whether the pandemic was a bump in the road or now presents a whole new set of potholes'.

Traditionally, price discovery — determining a company's fair value price — is based on the interactions of buyers and sellers in a marketplace. The publicly quoted share price demonstrates how capital markets value a company, and it's the basis upon which the company issues debt and equity. It also helps determine how the company allocates capital towards paying dividends, buying back company shares, compensating employees, paying down debt or reinvesting in the enterprise for future growth.

FROM THE MD's DESK

Dr. S. K. Gupta
Managing Director
ICMAI Registered Valuers Organisation

There's a lot of confidence in the market for many reasons, including the successful rollout of COVID-19 vaccines in some parts of the world. Meanwhile, well-capitalized corporates, private equity (PE) firms and SPACs are more active than ever. This collective appetite has led to a highly competitive situation with a lot of cash chasing a dearth of deals. While potential headwinds are present, valuations are rising and multiples are up significantly from where they were two years ago

Quantitative easing combined with low rates and, more recently, the COVID-19-related stimulus, have poured a lot of money into markets in search of yield. As a result, we see general inflation of valuation across practically all sectors and asset classes. If you like the old idea of markets being driven by greed and fear, then you have to conclude that currently they are certainly more driven by greed.

Finance professionals sometimes get so lost in the details so they don't see the forest for the trees. What people sometimes forget is that a good valuation is the combination of narrative and numbers. A narrative alone is just a fantasy. Numbers alone are just that. But a coherent narrative combined with numbers in the form of a financial model is something much more powerful.

PROFESSIONAL DEVELOPMENT

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PROFESSIONAL DEVELOPMENT PROGRAMS

December '2021 to February'2022	
Date	**PD Programs**
27th -28th November 2021	Professional Development Program
04th -05th December 2021	Certificate Course Achieving Excellence in Valuation assignments
08th December 2021	Physical Program -Milestones Achieved Program in Association with IBBI
11th -12th December 2021	Certificate course on International Valuation Standard
16th December 2021	Valuation of the Intangible Assets
18th -19th December 2021	Valuation Skills Improvement Program
25th -26th December 2021	Valuation Skills Improvement Program for Valuation Professionals
30th December 2021	Master Class on Emerging challenges of Valuation in 2022
08th -09th January 2022	Workshop on Valuation Report
07th to 09th & 13th -16th January 2022	50 hours Valuation Course on Land & Building and Plant & Machinery
15th-16th January 2022	Certificate Course on Tools for Data Analysis
21st January 2022	Learning Session
22nd -23rd January 2022	Master Class How to become an effective Link for Valuation Professional
24th January 2022	Learning Session on Emerging Business and Economic Environment
29th -30th January 2022	Power Learning Program on Revised Version of International Valuation Standards Effective from 31st January 2022
04th-05th-06th February 2022	3 Days Focused Learning Program Case Studies
05th -06th February 2022	Certificate Course Practical Aspects of Valuation
10th -13th February 2022	Executive Development Program Certificate Master Course on Enhancing effectiveness of Valuation Professionals
11th to 09th & 17th -20th February 2022	50 hours Valuation Course on Land & Building and Plant & Machinery
11th to 09th & 17th -20th February 2022	50 hours Valuation Course on Securities or Financial Assets
15th February 2022	Learning Session Emerging Business and Economic Environment
17th -18th February 2022	Power Learning Session - Using Automated Valuation Models for Effective Valuation
26th -27th February 2022	Professional Facilitation Program
02nd March 2022	Emerging Professional Opportunities Current Economic Scenario and its Effects on Valuation
05nd -06rd March 2022	Power Learning Session – AVM and Data Analysis Tools
08th March 2022	Seminar on the occasion of International Women's Day

PROFESSIONAL DEVELOPMENT PROGRAMS

Upcoming Professional Development Programs

Date	PD Programs
25th -26th March 2022	Professional Development Program Enhancing Valuation Competency –In Physical Mode Hyderabad Chapter
12th -13th March 2022	Certificate Course on Valuation-Online Mode
12th -13th March 2022	Professional Development Program Enhancing Valuation Competency –In Physical Mode Jaipur Chapter
2nd -3rd April 2022	Professional Development Program Enhancing Valuation Competency –In Physical Mode Chennai Chapter


Articles

ARTICLE

DEMYSTIFYING VALUE OF SYNERGY

Dr. S. K. Gupta
Managing Director
ICMA RVO

Abstract

Synergy is defined by a mutually beneficial existence of business elements or participants. In a merger and acquisition sense, it's the notion that two companies are worth more combined than they are when independently valued. The goal of every M&A is to create synergies by broadening a business's customer base. Thus, the entity can increase its market share and enhance its corporate financial strength. Therefore, synergies are the purpose of every M&A from the beginning of the deal. Put simply, synergies are the potential economic benefits achieved when two companies merge.

The Perspective

Synergistic Value of a business or asset is the value that a particular investor or group of investors place on that business entity or asset based on individual investment requirements, situation, potential synergies from complementary assets, and expectations. It reflects the individual investor's expectation of the benefits to be derived from ownership, perception of risk and mix of debt and equity to be used when investing. The term synergistic value arises from the fact that the business or asset is expected to complement existing businesses, expertise, or assets of the buyer to achieve incremental value through positive synergies. The synergistic value is also referred to as the investment value which is normally higher than the fair market value estimate, prompting an incentive to sell.

Synergy is the concept that allows two or more companies to combine together and either generate more profits or reduce costs together. These companies believe that combining with each other gives them more benefits than being single and doing the same. A corporate merger is a combination of assets and liabilities of two firms which form a single business entity. When the senior management decides to buy another company, it is mostly focused on increasing the value of a new company. The synergy effect is expected to be the core driver to improve sales, profit margins and the market positioning of the company. Excluding any synergies resulting from the merger, the total post-merger value of the two firms is equal to the pre-merger value.

As a rule of thumb, synergy is a business combination where 2+2 = 5. Or here is another way we can calculate synergies in M&A: **Synergy = NPV (Net Present Value) + P (premium),** where: NPV – net present value of a newly created company. Synergistic Value means an additional element of value created by the combination of two or more assets or interests where the combined value is more than the sum of the separate values

Synergies and Consolidation

Synergies play a substantial role in driving valuation. The ability of a management team to identify and extract the expected synergies plays a major role in the success or failure of an acquisition. Consolidation in the industry will continue, even in the face of increasing rates, because the financial opportunities far outweigh increased borrowing costs in the short term. A very richly-valued acquisition can appear moderately priced after taking into account the impact of revenue and cost synergies post close.

Whether you are considering an acquisition or have been approached by a consolidator to sell your business, it is important to have a comprehensive understanding of the opportunities to build and recognize synergies in a transaction. Building a pro forma is an important way to tell your story and set a road map. If you want to know more about the potential synergies present in your company

Operating Synergy

Operating synergies are those synergies that allow firms to increase their operating income from existing assets, increase growth or both. We would categorize operating synergies into four types.

1. Economies of scale that may arise from the merger, allowing the combined firm to become more cost-efficient

and profitable. In general, we would expect to see economies of scales in mergers of firms in the same business (horizontal mergers) – two banks coming together to create a larger bank or two steel companies combining to create a bigger steel company.

2. Greater pricing power from reduced competition and higher market share, which should result in higher margins and operating income. This synergy is also more likely to show up in mergers of firms in the same business and should be more likely to yield benefits when there are relatively few firms in the business to begin with. Thus, combining two firms is far more likely to create an oligopoly with pricing power.
3. Combination of different functional strengths, as would be the case when a firm with strong marketing skills acquires a firm with a good product line. This can apply to wide variety of mergers since functional strengths can be transferable across businesses.
4. Higher growth in new or existing markets, arising from the combination of the two firms. This would be case, for instance, when a US consumer products firm acquires an emerging market firm, with an established distribution network and brand name recognition, and uses these strengths to increase sales of its products.

Operating synergies can affect margins, returns and growth, and through these the value of the firms involved in the merger or acquisition.

Financial Synergy

With financial synergies, the payoff can take the form of either higher cash flows or a lower cost of capital (discount rate) or both. Included in financial synergies are the following:

- A combination of a firm with excess cash, or cash slack, (and limited project opportunities) and a firm with high-return projects (and limited cash) can yield a payoff in terms of higher value for the combined firm. The increase in value comes from the projects that can be taken with the excess cash that otherwise would not have been taken. This synergy is likely to show up most often when large firms acquire smaller firms, or when publicly traded firms acquire private businesses.
- Debt capacity can increase, because when two firms combine, their earnings and cash flows may become more stable and predictable. This, in turn, allows them to borrow more than they could have as individual entities, which creates a tax benefit for the combined firm. This tax benefit usually manifests itself as a lower cost of capital for the combined firm.
- Tax benefits can arise either from the acquisition taking advantage of tax laws to write up the target company's assets or from the use of net operating losses to shelter income. Thus, a profitable firm that acquires a money-losing firm may be able to use the net operating losses of the latter to reduce its tax burden. Alternatively, a firm thatis able to increase its depreciation charges after an acquisition will save in taxes and increase its value.
- Diversification is the most controversial source of financial synergy. In most publicly traded firms, investors can diversify at far lower cost and with more ease than the firm itself. For private businesses or closely held firms, there can be potential benefitsfrom diversification.

Clearly, there is potential for synergy in many mergers. The more important issues relate to valuing this synergy and determining how much to pay for the synergy.

Synergy benefits can come from four potential sources:

1. **Revenue increase.** This can be done by selling more different goods and services using a broadened product distribution. This will help the new company to compete for customers which originally were not the clients.
2. **Expenses reduction.** Because of a merger or acquisition, many companies optimize internal positions and introduce more responsibilities to the existing roles.
3. **Process optimization.** It is done by introducing enhanced marketing tactics and strategies, branding, better technologies, and more effective distribution.
4. **Financial economy.** United enterprise from the legal prospective can get better tax benefits, state support etc. But the buyers should remember: financial economy alone can't optimize the strategic position of a company. So it should not be the only value driver in the deal.

To calculate synergies the evaluation should be focused on three parameters:

- **Benefit impact from synergy effect.** This basically means that each forecast component should be critically reviewed. However, consultants tend to make overly-optimistic cash flows and costs.
- **The probability of**

achieving. Here we can consider three scenarios: optimistic, pessimistic and the realistic for achieving. The Monte-Carlo simulation method helps with finding the range of possible results.

- **Time of benefit generation.** History of M&A deals has a lot of cases when speeding up with a purpose of increasing acquisition attractiveness lead to overestimated synergy value. Doing this M&A team cheat on themselves.

These parameters can have a huge impact on the accuracy of the synergy evaluation

Examples of Ways to Estimate M&A Synergies:

- Analyze headcount and identify any redundant staff members that can be eliminated (i.e. the new company doesn't need two CFOs).
- Look at ways to consolidate vendors and negotiate better terms with them (i.e. purchase goods/services at lower prices).
- Evaluate any head office or rent savings by combining offices.
- Estimate the value saved by sharing resources that aren't at 100% utilization (i.e. trucks, planes, transportation, factories, etc.).
- Look for opportunities to increase revenue by upselling complementary products or increase prices by eliminating a competitor.
- Reduce professional services fees.
- Operating efficiency improvements from sharing "best practices."
- Human capital improvements from "top grading" exercises and potential ability to attract superior talent at New Company.
- Improve distribution strategy by serving customers with closer locations
- Geo-arbitrage – Reduce labor costs by hiring in other countries if the target is in another country.

How are Synergies Valued?

Typically, synergies will be valued separately, and the resulting amount will be added to the DCF value without synergies. The process of valuing synergies is similar to the standard DCF valuation process:

- Estimate the expected annual synergies. Synergies are assumed to be cash.
- Apply the marginal tax rate (the MTR) of the company to find after-tax synergies.
- Establish the discount rate to be applied. Usually, this discount rate will be the target WACC plus a risk premium. In other words, synergies are deemed riskier than standard cash flows.
- Estimate the terminal value (TV) of synergies using a perpetuity formula. This can be done with or without an expected perpetual growth rate.
- Discount the annual post-tax synergies and the terminal value of synergies back to today and add them together.

The resulting value of synergies is an unlevered number and adds to the estimated Enterprise Value of the valued company.

Common errors in valuing Synergy

- Acquiring firms often subsidize target firm stockholders by misidentifying sources of synergy or using the wrong discount rate on savings from synergy
- It is also common to see a mixing up and double counting of synergy and control values.
- Finally, over optimism about when synergy gains will show up often lead to too high a value being attached to synergy.

Best Practices

- We look at four best practices in valuing synergies to avoid leaving millions of dollars on the table. The approach is to value synergies as inputs to the Discounted Cash Flow model and use the following rules.
- **Use the right discount rate:** From time to time, analysts use the discount rate of either the target company or the acquiring company in valuing synergies. Either one is incorrect. Synergies should be valued by using the discount rate of the combined entities. The **combined discount rate** reflects the true nature of the project, which requires the merged entities to produce the synergies.
- **Isolate the value of control from the value of synergies:** The control premium reflects the incremental value that the acquiring company can create by managing the target company better or more efficiently. The value of control reflects better management. The value of synergies reflects the combinatorial effects of two merged entities. Mixing the value of control and the value of synergies is inaccurate. They are separate concepts with separate effects, which must be treated separately: **discount the control premium at the acquirer's discount rate**; and discount the value of the synergies at the combined discount rate of the two firms.

Anything different can inject errors of double counting.

- **Subtract the value of dis-synergies:** There are inherent 'dis-synergies' to any M&A deal. These items are **losses** expected to materialize as a result of the merger. Typical dis-synergies include the following: loss of customers; defection of quality employees to the competition; re-adjustment of employee benefits if the acquirer has better ones than the seller; cost of re-aligning reporting structures; re-branding; disposition of some assets based on antitrust considerations, and more. The value of dis-synergies must be subtracted from the value of synergies.
- **Subtract the cost of integration:** Synergies don't happen by chance. It takes integrating the two companies to deliver the value of synergies. There are many types of integration depending on the scope of the M&A deal. In a functional integration, companies merge key operating functions (e.g. human resources, legal, accounting) leaving the rest of the business intact. In a full operational integration, merging takes a change of control, senior management changes, primary activities, support functions, and occasionally restructuring. Whichever type of integration is required, **merging comes at a cost** and the timing of the benefits is not immediate. The cost of integration must be subtracted from the gross synergy target value, and expectations of the realization of benefits must be timed realistically

Conclusion

Often promised and seldom delivered is perhaps the most apt way of describing synergy in most acquisitions. There is potential for synergy in many mergers, be it operating or financial. In this paper, we began by looking at the sources of synergy and how best to value each one. In general, operating synergies manifest themselves as highercash flows, while financial synergies can affect both cash flows and discount rates. To value synergy, both the acquiring and target firms have to be valued independently first and the sum of these values can be compared to the value of the combined firm (with the synergy benefits built in) to estimate the value gain from synergy.

While there is some evidence of synergy in the aggregate across all acquisitions, most mergers fail in delivering any synergy. Even if we accept the fact that there is value to synergy, acquiring firm stockholders get almost none of the benefits of the increased value; in fact, they overpay for synergy in most acquisitions. We attribute this overpayment to a number of factors including managerial hubris, bias in the estimation process and a failure to plan for synergy. We close the paper by considering how best to improve the odds on delivering synergy and some common errors in the valuation of synergy.

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COMMONLY USED VALUATION STANDARDS

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Dear All

Some say valuation is an art. If this is true then so is the concept that art without rules can never reach its true potential and cannot flourish. Hence it is important that valuers follow certain guiding principles when doing valuations. Luckily for us we have in hand International Valuation Standards (IVS) issued by the The International Valuation Standards Council (IVSC). In this article we shall look at the few of the earliest issued and most commonly used IVS.

International valuation standard 101 (IVS 101)-Scope of Work

What is IVS 101?

IVS 101 gives the general knowledge about application of IVSs and scope of work of the valuer. This describes the terms of engagement like the asset under valuation, the responsibilities of the parties involved in the valuation.

General Principles of IVS 101

IVS applies to valuation assignments as well as valuation review. The purpose of IVS 101 is that the intended recipient must understand: -

a) what will the appointed valuer do?

b) what are the limitations on using the valuation advice until the report is finalised.

Scope of Work

A written document shall be prepared setting out the scope of work of the valuer to avoid the conflict and fixing the responsibilities of the valuer.

Some of the inclusions that are to be made in the document include valuer's identity, independence declaration & Professional competence of valuer, Purpose of valuation, Basis of Value etc

Are changes in scope of work allowed?

It can be done:

If at the start of engagement, some matters are not able to be determined.

If some additional information becomes available that requires investigation

Scope of work is an integral part of the overall valuation process and hence cannot be ignored.

International valuation standard 102 (IVS 102) - Investigation and Compliances

"What is the purpose of IVS 102?"

As from its name it suggests, IVS 102 was drafted for two purposes: -

a) what do we, valuers need to do while performing a valuation assignment including valuation review.

b) what are the compliances and documentation needed to be done.

"Investigation"

To support our valuation results, sufficient evidence needs to be collected. Evidence can be collected by means of: -

a) inspection for e.g., sampling, checking documents

b) computation

c) inquiry for e.g., contacting third party

d) analysis for e.g., as to which method will be apt in the given situation

What is sufficient depends upon the judgement of the valuer.

"Credibility of information received"

Information received from anyone other than the valuer himself needs to be tested on the parameters of credibility and reliability.

The valuer needs to see whether the information can be relied upon without adversely affecting the credibility of result of the valuation. Credibility of the inputs or information received can be judged by performing investigation, assessment or corroboration (finding supportive evidence for that information or input). For e.g., documents are more reliable than said words. If also after performing these, credibility cannot be obtained, then, such input or information must be excluded.

There are some factors which affect the credibility: -

A) Purpose of valuation

B) Significance of the information to the assignment

C) expertise of the source of information

D) expertise of the valuer/ subcontractor (a person hired for performing some part of the assignment).

E) independence of the source of information/ input.

"Limitations"

Limitations, if any, applied must be noted in the scope of work. But if a limitation is such that it restricts the valuer to perform sufficient evaluation of the inputs/ information/ assumption/ evidence then it must not be stated that the assignment has been performed in accordance with IVS.

"Valuation Record"

Documentation of work done must be kept for reasonable period which includes

a) inputs/ information

b) calculations performed

c) investigation

d) analysis

e) copy of draft/ final report provided to client

"Departure"

If any statutory, legal, regulatory, or authoritative requirements differ from the requirements of IVS then the valuer must follow the former. This is called departure and it does not rule the valuation out of IVS compliance.

"Other Standards"

Any other requirement set out by Practicing Valuers Association (PVAI - VPO) or any other bodies generally require more obligations on the part of valuers and they may be followed as long as IVS is complied with.

International valuation standard 103- Reporting (IVS 103)

IVS 103 speaks on the matter of reporting of valuation assignment including valuation review.

Purpose of Valuation Report

a) to communicate information necessary for proper understanding of the assignment

b) shall be comparable, relevant, credible.

Ranges of valuation report

a) comprehensive narrative

b) abbreviated summary

Factors affecting the level of detailing of report

a) purpose of valuation

b) complexity of asset being valued

c) users' requirement

Format

This standard does not set out a particular format of report but requires the report to be clear and not ambiguous, accurate and not dubious. It should serve the purpose. It should also be sufficient in such a manner that a valuation professional can understand the assignment performed by studying the report.

Minimums of a valuation assignment report

a) scope of work

b) approach(es) adopted

c) method(s) adopted

d) key inputs/ assumptions

e) conclusion reached and reasons thereof

f) date of report

Minimums of a valuation review report

a) scope of review

b) valuation report which is being reviewed and the inputs on which that valuation was based

c) conclusion reached and reasons thereof

d) date of report

Some of the minimums can be set out in the report itself or the valuation professional can give the reference to other documents. For e.g., if scope of work document is prepared then scope of work need not to be again mentioned in the report and the reference to the scope of work can be made in the report.

This valuation report sets out the details about what is expected to be given in the valuation report and hence is one of the important IVS.

International Valuation Standard 104: Bases of Value

IVS 104 is a general standard which applies to any type of valuation assignment or review. IVS 104 cites about basis (or bases) of value. Bases of value are statement of those fundamental assumptions that aids in selection of inputs and methods of valuation. Due to the aid, there is a direct impact on the opinion. Hence, the bases must be apt to terms and purpose of valuation assignment. The bases of value must be stated in the report making the report understandable.

Generally, IVS has defined the bases of value but it is not exhaustive. IVS permits the use of other bases if they fulfil the purpose of valuation. Those can be taken from other statute, regulation, private contract or document.

There are different bases of value but most of them have some common elements like assumed transaction, assumed date of transaction or assumed parties to transaction. For e.g.- date of transaction is assumed so that the professional can decide as to what information is relevant for the purpose. Parties to a transaction are assumed so that the market for the assets or liability in valuation can be determined and valuation can be performed in the manner apt for those assumed parties.

Some bases of value are market value, market rent, fair value and liquidation value. For instance, market value is the estimated amount for which an asset or liability can be exchanged between two willing parties on the valuation date in arm's length transaction and without compulsion.

Premises of value define the way of using an asset or liability. It may be similar to its existing or current use or may be a different one. Different bases of value can have different premise(s). For example – a building currently in commercial use can be converted into a residential unit by undertaking some costs so that it fetches best value. So it is responsibility of the valuer to determine that what is best for the asset or liability taking in consideration all the factors. As in the above example, the cost to convert will play a major role.

There are some factors which are specific to an entity like synergies (financial benefits associated with combining particular assets and liabilities), tax benefits available to an entity, etc. So, being not omnipresent they are generally excluded from the inputs considered in valuation. They can be considered as an input, if and only if, multiple market participants could have those factors by exchange.

Assumptions and special assumptions (assumptions that assume fact different from those existing on the date of valuation) made to clarify the state of asset or the circumstances in which the asset is assumed to be exchanged must be reasonable and relevant. Special assumption can be an assumption that a proposed building had been actually completed on the valuation date.

Transaction costs are not taken as an input in calculating value but are an important factor for determination of market and its participants.

Overall, IVS 104 needs to be closely followed so that a proper method of valuation can be selected and the assignment can be performed.

'FINANCIAL STATEMENT ANALYSIS FOR VALUE INVESTING'

CA Shilpang Karia
Registered Valuer (Securities or Financial Assets) – ICAI RVO

Value investing is an investment paradigm that involves buying shares & securities that appear under-priced by some form of fundamental analysis of Industry in which it operate, Financials of respective company vis-à-vis peer through majorly technique Ratio Analysis.

Financial statements are the primary source of information for assessment of the financial impact of business operations of the company during a year, financial position of its assets and liabilities at the year-end & changes in flow of operating, financing & investing activities during the year. The annual report is very important annual document which has both financial information & non-financial information including that of industry & competition, segment reporting of the business, related party transactions and accounting policies and principles in general and specific to certain transaction. Although the earning of a company is important, ability of a company to generate free cash flows over a longer period of time is the real test. The assessment of a company based on the basis of free cash flows is much better than assessment based on its earning.

Knowledge of industry is necessary and essential for valuer's assessment before deciding on value investment. Valuer should make assessment of the economic trends and regulations in order to assess the risk and return characteristics of companies operating in different industries. Industry understanding and analysis is required for the preparation and review of financial forecasts of the concerned company. Valuer need to first look at the economy in which company is operating, then the industry and finally the company. So the valuer has to scan environment by first looking into the economic factors like GDP, inflation, interest rate, government policies, then at the industry forecast in which the company falls and its growth potential, and finally the company's financial performance.

Financial statements are not an end in themselves but are useful in decision making context. Financial statements are very helpful in giving various indicators with the help of techniques such as 'Ratio Analysis' if appropriately carried out & analysed. Analysis of financial statements consist of segregating data according to parameters of desired spectrum and presenting them in as fashion that desired objective of such analysis if achieved. The analysis and interpretation bridges the gap between the art of recording and the art of using information. Analysis is basically an exercise to find facts from the given set of complex figures and data. Investor lay heavy emphasis on the analysis of financial statements with the help of Ratio Analysis.

Content:

1. SOME VALUE INVESTING TRUTHS:

Valuation related quotes of renowned & legends in value investment, gives insight into vale investing:

- Value is future looking. Investor buy tomorrow's cash flow, not yesterday's or even today's. [*James Hitchner]*
- I am better investor because I am a businessman, and I am better businessman because I am an investor *[Warren Buffet]*
- Some men know the price of everything and the value of nothing *[Oscar Wilde]*
- It's better to be roughly right than to be precisely wrong *[J.M. Keynes]*
- PRICE is what you pay - VALUE is what you get : *Buyer's success:* Value (-) Price : *Seller's success*: Price (-) Value
- Cash is King – Consider cash flow and not profits.
- Managers & Investors alike must understand that, accounting numbers are the beginning, not the end of business valuation *[Warren Buffet]*
- There is nothing so dangerous as the pursuit of a rational investment policy in this irrational world *[John Maynard Keynes]*
- Unless you are willing to put in the effort to learn accounting – how to read and interpret financial statement – you really shouldn't select stocks yourself *[Warren Buffet]*
- The past performance is only relative to the extent that it is indicative of the company's future performance. *[James Hitchner]*
- There is vast difference between 'Understanding something well enough to buy it' as opposed to 'Understanding it well enough to sale it' [Zig Ziglar - 'Secret of Closing the Sale, 1984]
- "It's stupid the way people extrapolate the past and not

slightly stupid, but massively stupid" [Charlie Munger]

- The past performance is only relative to the extent that it is indicative of the company's future performance. [James Hitchner]
- The Numbers are never whole story, its only starting point
- We must always remember that market research, not matters how well done is based on past. We are always susceptible to discovering a truth whose time has gone. [Mark A. Johnson – 'The Random Walk & Beyond', 1988']
- A judicial man uses statistics, not to get knowledge but to save himself from having ignorance foisted upon him [Thomas Carlyle]
- This behaviour thinks that market is going to climb up & up and whoever doesn't board is going to left behind forever. This goes on till the last fool is identified [Allan Greenspan]
- Unless you are willing to put in the effort to learn accounting – how to read and interpret financial statement – you really shouldn't select stocks yourself [Warren Buffet]

2. INDUSTRY ANALYSIS:

An understanding of the economic and industry outlook is fundamental for developing reasonable expectation about company's prospects.

- Size of the Industry.
- Market of Product & Services of the Industry.
- Growth Potential of Market Segment.
- Possible Substitute of Product & Services.
- Sales Trend of Product & Services.
- Recent developments in the Market of the said Industry.
- Impact of Technological Changes on Industry Participants.
- Key Economic Drivers of Industry & Business.
- Labour & Social factors affecting Industry & Business.
- Government Policies & Regulations applicable to the Industry.
- Competition Existing in the Industry.

Suggested Sources: Annual Reports of same industry segment cos., Recent Prospectus filing by same segment cos., Industry or trade association publications / websites, Internet searches, Business Newspaper & Trade Journals, Research Reports etc.

3. FINANCIAL STATEMENT ANALYSIS:

- **What is Financial Statement?**
  - Financial statement is compilation of financial data, in fact it is just beyond compilation.
  - It is collected and classified in a systematic manner according to the accounting principles.
  - It gives the Financial Position of an enterprise as regards to the profitability, operational efficiency, cash generation, long and short – term solvency etc.
  - Financial statement is basic and formal means through which management of enterprise makes public communication of financial position.

- **Financial Statement Analysis for Value Investing:**
  - Financial analysis should include: Ratio Analysis, Trend Analysis & Cash Flow analysis.
  - Understand Valuation of shares & securities for Investment.
  - Before Investing, fundamentals of the Business must be understood. First step to understand fundamentals of any shares & securities is analysing 'Historical Financial Performance'.
  - The purpose of 'Historical Financial Performance' is to develop reasonable expectation about the future of the business.

- **Answer of Followings Should be Searched while Reviewing Financial Statements:**
  - Focus on identifying the Key Value Drivers. For e.g. Number of Customers, Repetitive Customers, Reputed Customers, Reputed Contracts, Scalability due to adoption of Information Technology, Rating, Branding, Brand Ambassador, Marketing Budget, Locational advantage for acquisition of raw materials, Locational Advantage for selling of goods, Locational Eco-System, Key Managerial Personnel, Other Man-power etc. List can be exhaustive depending upon the Business Activities & Business Model of the Company.
  - What are the Economic Mots i.e. Competitive Advantages? For e.g. Lower Cost, Greater Size, Intangible Assets like branding / good will, Business Networking like dealer distributor etc., Commanding High Switching cost i.e. longer gestation period.
  - Key Value Driver: Rate of Return on Capital / Rate of Return on Invested Capital (ROIC).
  - Return on Invested capital and the proportion of its profits that the company invests for growth drive the free cash flow of future, which in turn drive value.
  - Dividend Pay-out Ratio: If company has high dividend pay-out ratio and also investment rate more than 1, than it must be borrowing money to pay interest & dividend / negative free cash flow.

- Whether company is consuming more funds than it is generating (Investment rate greater than 1).
- Credit or liquidity perspective: Is company generating or consuming cash?
- How much debt does the company employ relative to equity? Debt has tax advantage but not flexibility.
- What Margin of Safety does the company have with respect to its debt financing?
- Interest Coverage: Operating Profit available to pay interest.
- Normal level of performance should be assessed. Abnormal other income / loss should not be considered, if it's not recurring in nature. So, Non-operating income and expenses with respect to core business activities, should be removed.
- Excess assets or Assets deficiency may be compared vis-à-vis benchmark for industry.
- Whether any redundant assets exist in the balance sheet of the company? i.e. assets which are not contributing in operation of cash flows.
- Capital structure of the Business vis-à-vis previous year & vis-à-vis peer company / industry, if any.
- Core Working capital items should be assessed in % term with sales i.e. Trade Receivables, Trade Payables & Inventory.
- Operating cash cycle of the Business vis-à-vis previous year & vis-à-vis peer company / industry, if any.
- Share Capital addition & understand reason for such capital addition.
- CAPEX Addition vis-à-vis Business Plans.
- Length of financial history, looking to industry.

- **Analysis vis-à-vis past trend & industry segment:**
  - ✓ Sensitivity of Free Cash Flow to key value drivers.
  - ✓ Sales growth rate %, Quantitative growth, Average Sales Price Realization growth.
  - ✓ Operating profit margin.
  - ✓ Core working capital items along with sales turnover i.e. Cash Cycle.
  - ✓ Incremental Investment in working capital vis-à-vis sales growth
  - ✓ Incremental investment in fixed assets vis-à-vis present installed capacity & its utilization.
  - ✓ Share Capital Structure.

- Accounting policy which affects financials of the company
- Qualification / Disclaimer if any given by statutory auditor.
- Excess Cash, Marketable Securities and Surplus Assets vis-à-vis Operating assets.
- Tax status of the Business like: Tax rate applied vis-à-vis Normal rate of tax, Tax Benefits enjoyed if any, Advance tax being paid in relation to the business operations, Tax Disputes if any.
- Contingent Assets & Liabilities.

- **Over Valued Assets / Redundant Assets:**
  - Increasing inventory level vis-à-vis sales.
  - Obsolete / slow moving / non-moving stock & realizable value of stock.
  - Stock Valuation methodology adopted.
  - Longer period Receivables.
  - Longer period Capital work in progress.
  - Litigated Assets.
  - Deferred Revenue Expenditure.
  - Investment carrying low rate of Income.
  - Contribution of Intangible Assets on Revenue.
  - Group company investments Balance Sheet performance vis-à-vis level of investment.

- **Non-operating Items:**
  - Excess cash than Business Need.
  - Excess marketable securities.
  - Excess Real Estate investment (If company can operate in rented premises, instead of investing excess in it).
  - Luxurious investment in name of company, being used personally.

- **Off Balance Sheet / Other Items Review:**
  - Qualification / Emphasis in the matter.
  - Negative Reporting in Audit Report.
  - Tax Dispute & Long Tax Outstanding, if any.
  - Loan borrowing interest rate & primary / collateral securities offered.
  - Contingent Liabilities.
  - Future Lease Commitments.
  - Environmental Liabilities.
  - Third Party Claims / Product Liability Claims / Warranty Claims.
  - Labour issues / Labour claims.
  - Adequate Insurance coverage.
  - Legal rights over Brand / IP being used.
  - Accounting policies which affects to the financials of the company.
  - Impact analysis of any change in the accounting policy vis-à-vis previous year.

- **Financial Analysis Tools:**
  - **Ratio Analysis**: Comparing company's performance vis-à-vis previous years (Trend Analysis) & vis-à-vis peer business / industry average.

- **Cash Flow Analysis**: Whether company generating or consuming cash for investor?

- **Financial Risk Analysis:**
  - Operating Leverage
    - ✓ Fixed operating expenditure over total operating expenditure is known as 'Operating Leverage'
    - ✓ Higher operating leverage makes the operating earning more volatile.
    - ✓ More volatile the operating earnings as compared to volatility of sales, the greater will be the firm's operating leverage.
  - Financial Leverage
    - ✓ Fixed financial obligations over capital employed in business is known as 'Financial Leverage'. Higher the financial leverage makes earning more volatile.
    - ✓ 3 major steps to analyse Financial Risk:
      - ➢ Balance Sheet Ratio: Compares the capital derived from debt compared to equity.
      - ➢ Earnings Ratio: Compare the earning available to pay fixed financial charges.
      - ➢ Cash Flow Ratio: Cash flow to outstanding obligation & cash flow available to pay fixed obligations.

- Interest Coverage
  - Income before interest & taxes how many times to fixed interest obligation.
  - Higher the ratio - lower the financial risk.

- External Market Liquidity
  - Ability to buy or sell stock quickly with little price change from prior trade.
  - Volume to trading activity & bid-ask spread majors external market liquidity. Smaller spread indicates greater liquidity.

- **TECHNIQUES**
  - **Dupont Model (Majors Return on Equity by considering efficient utilization of Assets)**
    - ✓ This equation reveals that how firm can improve return on equity either by increasing profit margin OR by using all assets including fixed assets more efficiently / optimally.
    - ✓ **Return on Assets = Net Profit Margin * Total assets turnover * Equity Multiplier**
      - ➢ Net Profit Margin = Net Profit After Tax / Total Revenue
      - ➢ Total Assets turnover = Total Revenue / Total Assets
      - ➢ Equity Multiplier = Total Assets / Shareholder Equity
  - **Sensitivity Analysis**
    - ✓ By making few sensitive variation in key indicator of company & majoring overall impact on financials.
  - **Scenario Analysis**
    - ✓ Process to analyse financial impact under situation of Rapid growth, moderate growth & slow growth.
  - **Ratio Analysis**

4. RATIO ANALYSIS:

Majorly Ratio Analysis can be grouped into 5 classes:

1.	**Liquidity Ratios**	• Describes how quickly and easily co. can turn current assets into cash when necessary. • Measures ability of business to meet short term obligations.
2.	**Solvency Ratios**	• Measures optimum utilization Debt & Equity. • It deals with company's ability to service its long term liabilities.
3.	**Efficiency Ratios**	• Measures efficiency of management towards various business activities.
4.	**Profitability Ratios**	• Measures efficiency of management to generate profitability / return on investment.
5.	**Valuation Ratios**	• To determine the valuation of company.

1. LIQUIDITY RATIOS:

Important Liquidity Ratios are:

1.	**CASH RATIO**
	= Cash & Cash Equivalents / Current Liabilities
	• Cash or cash equivalent available to pay current liabilities immediately. • More conservative than Current ratio & Quick ratio. • It doesn't consider Trade Receivables & Inventories. • Low cash shows financial issues. • High cash, waiving potential business opportunities. Investment opt for safe capital instead of risk capital.
	• **Norms: Industry Specific, however in general say = 0.5 : 1**
2.	**QUICK RATIO (Acid Test)**
	= Quick Assets (Current Assets – Inventory – Prepaid Expenses) / Current Liabilities.

- Measures ability to pay current liabilities from current assets other than inventories.
- Inventory may take its time to realize & convert into cash.
- Period of Receivables & its Realizability.
- Refers Cash Flow: Receivables realized vis-à-vis Total Revenue.

- **Norms: Industry Specific, however in general say = 1 : 1**

3.	**CURRENT RATIO**

= Current Assets / Current Liabilities.

- Measures ability to pay current liabilities from current assets.
- Period of Receivables and Inventories & its Realizability.
- Refer Cash Flow: Receivables & Inventory realized vis-à-vis Total Revenue.

- **Norms: Industry Specific, however in general say = 1.5 : 1 or 2 : 1**

4.	**INVENTORY TO CORE WORKING CAPITAL**

= Inventory / (Trade Receivable + Inventory – Trade Payable).

- Measures level of Inventory in total working capital deployed.
- Higher ratio suggest inventory blocking.
- Increase should be read with Sales growth & new Business Development.
- Lower ratio, signifies higher liquidity, however should be read along with Receivables level to working capital also.

- **Norms: Industry Specific, however in general say = 40% to 60% of Current Assets**

5.	**TRADE RECEIVABLES TO CORE WORKING CAPITAL**

= Trade Receivable / (Trade Receivable + Inventory – Trade Payable).

- Measures level of Receivables in total working capital deployed.
- Higher ratio suggest receivables blocking.
- Increase should be read with Sales growth & new Business Development.

- **Norms: Industry Specific, however in general say = 40% to 60% of Current Assets**

6.	**TRADE PAYABLE TO CORE WORKING CAPITAL**

= Trade Payable / (Trade Receivable + Inventory – Trade Payable).

- Measures level of Payable in total working capital deployed.
- Higher ratio suggest liquidity issues.
- Increase should be read with inventory held.

- **Norms: Industry Specific, however in general say = 40% to 60% of Current Assets**

7.	**SALES TO CORE WORKING CAPITAL**

= Annualized Net Sales / (Trade Receivable + Inventory – Trade Payable).

- Measures no. of times working capital cycled in a year.
- Higher the ratio, more efficient utilization of working capital.
- Lower ratio suggest issues in business, liquidity & credit policy.
- Used as a trending signal to alert to investigate various management decisions.

- **Norms: Industry Specific, however in general say = minimum 4+, which means working capital cycle less than 90 days.**

8.	**SALES TO CORE CURRENT ASSETS**

= Annualized Net Sales / Current Assets (Trade Receivable + Inventory).

- Measures no. of times current assets cycled in a year.
- Sales to working capital also consider trade payable, while this ratio considers only current assets. Higher the ratio, more efficient utilization of current assets.
- Lower ratio suggest issues in business, liquidity & credit policy.
- Used as a trending signal to alert, to investigate various management decisions.

- **Norms: Industry Specific, however in general say = minimum 3+, which means working capital cycle less than 120 days.**

2. SOLVENCY RATIOS:

Important Solvency Ratios are:

1.	**TOTAL DEBT TO ASSETS RATIO**

= Total Debt (Short & Long Term) / Total Assets.

- Extent of total debt financing over total assets, so to have optimization benefit of one financing method over another.
- Higher the riskier.
- Lower, opportunity cost of equity to be considered.
- Margin also governs level of Debt

- **Norms: Industry Specific, however in general say = 1 : 1**

2.	**TOTAL DEBT TO EQUITY RATIO**

= Total Debt (Short & Long Term) / Net Worth.

- Measure Company's financing from debt & equity.
- Higher the riskier.
- Lower, opportunity cost of equity to be considered.
- Margin also governs level of Debt

- **Norms: Industry Specific, however in general say = 1 : 1**

3.	**LONG TERM DEBT TO EQUITY RATIO**

= Long Term Debt / Net Worth.

- Measures long term component of capital structure
- Higher the riskier.
- Lower, opportunity cost of equity to be considered.
- Margin also governs level of Debt

- **Norms: Industry Specific, however in general say = 2 : 1**

4.	**DEBT SERVICE COVERAGE RATIO**

= Operating Profit (EBIT) / Debt Principal + Interest.

- Measures nos. of time a company's debt payment ability by comparing its net earning with amount of long term loan & interest payments.
- Higher the better.
- Lower the risker.

- **Norms: Industry Specific, however in general say = 1.5 : 1**

5.	**TOTAL DEBT TO EBITDA RATIO**

= Debt (Short & Long Term)/ EBITDA.

	• Measures no. of times a Debt held over EBITDA earned. • Higher the risker. • Lower the better.
	• **Norms: Industry Specific, however in general say = 2 to 3 times**
6.	**WORKING CAPITAL TO DEBT RATIO**
	= Working Capital (Current Assets – Current Liabilities) / Total Debt (Short & Long Term borrowing).
	• Measures Company's ability to reduce or eliminate its debt. • Higher ratio value is generally considered a good sign of financial health. • It helps to determine how quickly & easily the organization could liquidate its cashable assets to repay debts.
	• **Norms: Industry Specific, however in general say = 0.30 to 0.35 + i.e. organization has capacity to repay within say approx. 3 year.**
7.	**INTEREST COVERAGE RATIO**
	= Earnings Before Interest & Taxes / Interest Exp.
	• Measures efficiency to pay interest exp. • Higher the better. • Lower the risker.
	• **Norms: Industry Specific, however in general say = 3 +**

3. EFFICIENCY RATIOS:

Important Efficiency Ratios are:

1.	**ASSET TURNOVER RATIO**
	= Net Annual Sales/ Average Total Assets (Excluding Cash & Cash Equivalents**).**
	• Measures efficiency of assets to generate income. • Higher Ratio indicates efficient use of assets. • Lower Ratio indicates inefficient utilisation of assets. • Depends upon margin of revenue to give total return on total assets.
	• **Norms: Industry Specific, however in general say = 1.5 +**
2.	**INVENTORY TURNOVER RATIO**
	= Sales OR COGS / Average Inventory.
	• Measure average inventory level against cost of goods sold. • Higher the better. • Lower the risker.
	• **Norms: Industry Specific, however in general say = 4 to 6 +**
3.	**TRADE RECEIVABLE TURNOVER RATIO**
	= Total Sales / Average Accounts Receivable.
	• Measures efficiency in collection from customers. • Slow trend in realization of receivables: signal that firm's financial health may be declining. • Higher Ratio: suggests efficient credit policy & liquidity.
	• **Norms: Industry Specific, however in general say = 4 to 6 +**
4.	**TRADE PAYABLE TURNOVER RATIO**
	= Total Purchase / Average Accounts Payable.
	• Measures efficiency to meet supplier's debt obligations. • Slow trend in supplier payment: signal that firm's financial health may be declining. • Higher Ratio: suggests liquidity to pay supplier & take price cost advantages.
	• **Norms: Industry Specific, however in general say = 8 to 12 +**
5.	**PRODUCTIVITY RATIO**
	= Total Annualized Sales / Any Productive selling unit Identified for Business.
	• Level of sales per 'any productive selling unit identified for business' • For e.g.: Per cab, Per Person, Per Machine, Per Outlet etc. • Measures productivity on average selling unit. • Any increase in it, increases profit margin.
	• **Norms: Industry Specific & depending upon Market Competition for said segment.**

4. PROFITABILITY RATIOS:

Important Profitability Ratios are:

1.	**RETURN ON EQUITY RATIO**
	= (Net profit after tax – preference dividend if any) / Net worth.
	• Measures total earning available for the year over total equity fund deployed • As an investor, this ratio shows how effectively company is using investor money to generate returns. • How firms management is using equity to support ongoing operations & to fund growth & expansion. • Optimization of Debt & Equity Ratio: gives higher return.
	• **Norms: Industry Specific, however in general say = 12% to 15% +**
2.	**RETURN ON CAPITAL EMPLOYED (ROC) / RETURN ON INVESTED CAPITAL (ROIC)**
	= (EBIT (1-t) or Net profit after tax + Post Tax Interest) / Capital Employed (i.e Total Assets – Current Liabilities).
	• Measures net earnings from operations to the amount of total capital employed. • It should give return more than opportunity cost of fund to investor.
	• **Norms: Industry Specific, however in general say = 15% to 18% +**
3.	**GROSS PROFIT MARGIN**
	= (Total Sales – COGS) / Sales.
	• Non-operating other income or expenses to be excluded. (e.g. profit / loss on sale of fixed assets, currency gain / loss etc.) • Measures ability of the company to generate profit on basis of trading / manufacturing / direct business operating activities.
	• **Norms: Industry Specific, depending upon core business activities & generally accepted market norms for said Industry at relevant period of time.**
4.	**EBITDA MARGIN**
	= (Earnings Before Interest, Taxation, Depreciation & Amortization) / Sales.

• It can be equated as Cash Operating Income to the entire business capital used including Debt & Equity. • Widely used across the industry for financials decision.	
• **Norms: Industry Specific, depending upon core business activities & generally accepted market norms for said Industry at relevant period of time.**	
5.	**EBIT MARGIN**
= (Earnings Before Interest & Taxation) / Sales.	
• It can be equated as net earnings available to the entire business capital used including Debt & Equity. • Widely used across the industry for financials decision.	
• **Norms: Industry Specific, depending upon core business activities & generally accepted market norms for said Industry at relevant period of time.**	
6.	**OPERATING MARGIN**
= (Operating Profit / Operating EBITDA – Depreciation) / Sales.	
• Non-operating other income or expenses to be excluded. (e.g. profit / loss on sale of fixed assets, currency gain / loss etc.) • Measures ability of the company to generate profit exceeding its cost of operations.	
• **Norms: Industry Specific, depending upon core business activities & generally accepted market norms for said Industry at relevant period of time**	
7.	**NET PROFIT MARGIN**
= (Net profit after tax) / Sales.	
• Net available to equity holder after all accrued expenses including taxation.	
• **Norms: Industry Specific, however in general say = 10% + PAT**	
8.	**EARNING PER SHARE (EPS)**
= (Net profit after tax – preference dividend if any) / Number of Equity Shares.	
• Earnings per share available for the year over total nos. of equity shares deployed.	
• **Norms: Industry Specific & depending upon Capital Structuring**	

5. VALUATION RATIOS:

Important Valuation Ratios are:

1.	**DIVIDEND PAY OUT RATIO**
= Dividend Per Share / Earning per share.	
• Profit distribution pay out. Balance is considered as invested for growth. • When the ratio is more than 1, it suggests business is paying out more in dividend than its actual earnings	
• **Norms: Industry Specific, however in general say = It should advisably not exceed more than 30% to 40%, when there is business has potential to grow.**	
2.	**PRICE EARNING RATIO (P/E Ratio)**
= Market Price Per share / Earning Per share.	
• How much investor willing to pay price over earning per share. • Indicator for share under-priced or over-priced in market. • Prone to Accounting Adjustment of Depreciation, Amortization & Deferred Tax.	
• **Norms: Industry Specific, however in general say = 12 to 15. Higher or lower should be assessed for stock to stock, industry to industry & depending upon the capital structuring of the company.**	
3.	**PRICE EARNING TO GROWTH RATIO (PEG Ratio)**
= P/E Ratio / EPS Growth Rate.	
• Price Earning Growth in based on the assumption that PE Ratio is positively linearly correlated to the expected growth rate in the earning. • To identify overvalued & undervalued stock. • Lower PEG says stocks are undervalued. • Higher PEG says stocks are overvalued. • Price Earnings ratio of any company which if fairly valued, will be equal to growth rate.	
Norms: The following are the interpretation of the Price Earnings Growth ratio: • **If the PEG ratio is equal to 1, it will be stated that fairly priced or valuation of the business.** • **If the Price Earning Growth ratio is less than 1, it will be stated that undervaluation of the business.** • **If the PEG ratio is more than 1, it will be stated that overvaluation of the business.**	
4.	**EV/ SALES**
= Enterprise Value / Sales	
• Enterprise Value = Market Capitalization + Debt – Surplus Cash & Cash Equivalents. • Simplest to apply when in losses but having good customer base and revenue from it. • Not preferable to user other than matured company.	
• **Norms: Industry Specific, however in general say = Range of 1 to 3. Higher or lower should be assessed for stock to stock, industry to industry.**	
5.	**EV/ EBITDA MULTIPLE**
= Enterprise Value / EBITDA	
• Enterprise Value = Market Capitalization + Debt – Surplus Cash & Cash Equivalents. • Widely used as best multiple. It consider operational profit. • Not prone to Accounting Adjustment of Depreciation, Amortization & Deferred Tax • Values irrespective of Debt Level.	
• **Norms: Industry Specific, however in general say = Ranging as 10+. Higher or lower should be assessed for stock to stock, industry to industry.**	

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KEY PARAMETERS FOR VALUATION OF PHARMACEUTICAL COMPANY

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While valuing any Pharmaceutical Company the Valuer need to look into factors like investments in **Research and Development**, **Patented Technology**, **Advertising Budget**, Production Facilities, Regulatory approvals, and Generic drugs in comparison to drugs under the brand name.

R&D spending as % of sales and EBITDA margin are some of the key financial performance criteria used for mapping comparable companies. EV/EBITDA valuation multiple of listed comparable companies is often used to value unlisted pharmaceutical company. Valuer while taking the listed peer companies also need to look at the size of company and also the segment of company and also need to remove the outliers.

Pharmaceutical products take a long time to develop, so valuation of Company with products in pipelines or at pre-clinical stage would strongly depends upon the Discounted Cash Flow (DCF) Methodology to unearthed the hidden potential behind the company innovative research. However, financial projections of companies at pre-clinical stage is a factor of uncertainty which is difficult to estimate and may impact revenue levels. Accordingly, profitability and viability are subject to the risks associated with success probability of these products. Accordingly, projected Cash flows of the pharmaceutical company are determined by factors like Development phase / Market phase, existing patent rights, Number of potential patients, Development cost as percentage of sales and it need to be a multistage model rather than a single stage model

Sometimes comparable Transactions Multiples (CTM) Method is also used for valuing an early stage drug company However, it is always challenging to find true comparable transactions and even after finding the comparable transaction the price reflected is dependent on the class preferential rights attached which may vary so applying a naked Transaction price may not be a right criteria.

The pharmaceutical companies make good amount of initial investment in R&D (research & development) and also require taking enormous number of regulatory approvals so it is difficult for any company to replicate the business model. Thus, following multiples are considered as rule of thumb or benchmark when valuing a pharmaceutical company.

- Market value of invested capital (MVIC) to Net Sales;
- Market value of invested capital (MVIC) to EBITDA;

Adoption of technology and Internet-of-Medical-Things (IoMT) in traditional pharmaceutical business model creating a leading opportunity for the pharmaceutical players in streamlining the value chain by gauging the needs of consumers and driving accordingly. This has alsohelp pharmaceutical companies to create awareness about its brand and reduce the price gap between generics and branded drugs. Further, in current pandemic situation technology is also assisting healthcare professionals and training physicians to meet shortfalls by counselling each other through remote access.

It is foremost important for valuer to understand the product development and size wise selection of comparable listed companies and appropriate valuation methodologies which can capture the essence of Business

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OBSOLESCENCE AND ITS MEASUREMENT IN VALUATION OF PLANT AND MACHINERY (THEORY AND PRACTICE)

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IBBI Registered Valuer

Synopsis

One of the crucial factors to be considered during the process of valuation of Plant and Machinery is the depreciation. This is due to the fact that most P & M have pre-determined economic life and majority of them are already in use. A valuer must be able to identify and quantify depreciation factors during the inspection of P & M. Depreciation in P & M could be in the form of physical obsolescence, economic obsolescence or functional (technological) obsolescence. This paper concerns with the existing approach used by valuers to identify which type of depreciation/ obsolescence is affecting the P & M and how do they identify them. The next question asked is, do they quantify the obsolescence .The paper is studying the methodological approach to identify and quantify Obsolescence and its consideration in the valuation of P & M.

Depreciation

Besides the usual wear and tear caused by the normal working of any asset, its use is liable to a certain amount of deterioration despite the care and attention bestowed on its maintenance and preservation. While some of this deterioration may be possible to be controlled it cannot altogether be avoided. This is taken as depreciation. Many refer to this difference as Curable and Incurable. Many a time actual and perceived (appearance) conditions are different due to the following reasons:

- The machine may appear new; though it may not be so; which is recently renovated/ overhauled/ reconditioned/ painted.
- In chemical/ process plants, equipment made out of steel plates can be manufactured from second-hand steel plates.
- Difficult to assess real performance of a machine and its deterioration in working condition could be due to excellent up-keeping/ maintenance.

A valuer needs to consider three major factors to arrive at the condition of the equipment: Environment, Usage, and Maintenance.

Environment

What is the state of surrounding area housing the equipment? Is it sufficient to protect the equipment? These are major questions posed by the environment. Surrounding weather conditions also contribute to balance life and performance of machinery viz., nearness to salt water or nearness to corrosive atmosphere.

Usage

Is the equipment used strictly as per manufacturer's recommended capacity? This question has to be answered in the context of usage.

Maintenance

What is the system of maintenance? Is it routine breakdown maintenance or preventive maintenance? Has the company adopted the system of maintenance audit? These are the pertinent questions within the realm of maintenance.

It is noteworthy to mention that, the standard of maintenance is, to a certain extent, inter-linked with the condition of the machine. An experienced valuer will be able to form an early impression in this respect during the course of his survey. Probably the best indicator of all is to look at the maintenance department – if it is well equipped, clean and efficiently organized, it is a reasonable assumption that the production plant will be maintained to a suitably high standard. If, on the other hand, the maintenance shop is poorly equipped, dirty and positively groaning under the weight of a disorganized collection of

ancient bits and pieces, current spares and assorted parts and generally resembles a junk yard, it is more than likely that standard of maintenance will be poor. The general impression created by the organization within the factory as a whole also gives a fairly good indication of the probable standards of maintenance. Answer to all the above questions will lead to a determination of whether the equipment is under normal wear and tear or abnormal wear and tear. This determination plays a crucial role in arriving at sound value.

Obsolescence

A factor included in depreciation to cover decline in value of assets due to invention of new and better processes or machines, changes in demand, in design or in the art, and other technical or legal changes, but not to cover physical depreciation.

There are three types of obsolescence

- Technological (Many times considered as same as functional or incorporated with functional).
- Functional
- Economic

Technological obsolescence

Technological obsolescence is due to change in design and materials of construction of the plant and machinery under consideration. Latest sophisticated equipment with reduced occupancy, improved efficiency or optimum energy consumption is common in plant and machinery. Technological obsolescence may arise out of development of new technology which brings in changes in rate of production or reduction of operating cost. The need for adequate familiarity of the valuer with such a situation is more emergent in present high tech environment than before. Enough exposure to and background experience of technology is essential for a valuer. In case he is not fully competent, he shall refer appropriate matters to experts.

Functional obsolescence

Functional obsolescence arises when a machine already in function loses its optimum capacity owing to a decline in co-operation from its operating counterparts. It may arise due to variety of internal reasons. The company may have been compelled to commission a machine of high-rated capacity simply because a low-rated one is not available and the operating counterparts, whether it is labour or capital, are not geared to give the highly rated machine the opportunity for optimum output. Functional obsolescence may also arise due to faulty design or wrong location of industrial undertaking. It is a comparison to its more current replacement. Functional obsolescence is also known as decrease in value due to no availability of spares or accessories, or any other allied factors. Operating obsolescence is known as the present worth of the future excess operating cost of a machine. The valuer is expected to appropriately account these factors with relevant data to arrive at a credible presentation.

Economic obsolescence

This is due to factors external to the plant and machinery itself. This could be due to change in demand of the product manufactured or shrinkage in supply of raw materials and labour, legislation affecting taxes or duties, environmental or zoning controls etc. Economic obsolescence is not to be confused with sickness in industry. In India, sickness of industries has been the subject matter of a legislation entitled, "The Sick Industrial Companies (Special Regulation) Act, 1985 wherein the expressions "sick industrial undertaking" has been defined as: "*Sick Industrial Company" – means an industrial undertaking (being a company registered for not less than five years) which has at the end of any financial year accumulated losses equal to or exceeding its entire net worth.*

For the removal of doubts, it is hereby declared that an industrial company existing immediately before the commencement of the Sick Industrial Companies (Special Provisions) (Amendment) Act, 1993, registered for not less than five years and having, at the end of any financial year, accumulated losses equal to or exceeding its entire net worth, shall be deemed to be a Sick Industrial Company. It would appear that sickness is based on the concept of erosion of net worth and negative return on investment over a specified period of time. This may be due to obsolescence of any description or a management failure. Thus sickness by itself does not lead us anywhere in the computation of obsolescence which has to be assessed from a different angle of vision.

Business specific economic viability should not be confused with economic obsolescence. Economic viability is often a management question. An undertaking which is not viable economically can be converted into a viable one through sales promotion, advertisement and the like and in such cases, economic obsolescence may not be present. But on the other hand, if there is a definite change in trend or fashion affecting demand of a product the situation may not be reversible by managerial efforts or adopting a better technique of management. This is how economic obsolescence is distinguished from the aspects of economic viability.

Among valuers, the use of the income approach to value plant and machinery is controversial. Valuers readily accept the income approach to value office buildings, warehouses and other commercial property because these properties are leased and capitalization rates can be readily determined from market sales. However, industrial properties typically are owner-occupied and are not leased. Unlike commercial property, the operating income from an industrial property is produced by not only the real property – land and buildings – but also from the machinery, equipment, personal property, working capital and intangible assets.

Despite the fact that the income approach is a better indicator of the current value of an industrial plant because it takes into account economic obsolescence, valuers express its use because of the perceived difficulty in separating the value of the real and personal property from the value of the non-assessable and intangible assets. In short, assessors argue the income approach cannot be used to value industrial property because it values the business enterprise and not the assessable real and personal property.

This argument can be easily overcome. The following equation better illustrates the components of business value – we'll call it "BV" – measured by the income approach:

BV = CA+FA+ IA = CL+LTD+SE.

"CA" is current assets, "FA" is fixed assets (real estate, machinery and personal property), and "IA" is intangible assets (those that are non-assessable). "CL" represents current liabilities, "LTD" is long-term debt, and "SE" is shareholder's equity.

Accountants and chief financial officers will recognize this equation as a typical balance sheet. The question is how to isolate the market value of the fixed assets in the income approach.

Simple algebra reduces the equation to:

BV = (CA-CL)+FA+IA = LTD+SE

Thus:

BV = WC (working capital)+FA+IA = LTD+SE.

Working capital is non-assessable in most states. The market value of working capital (cash, receivables, inventories, etc.) can be determined easily – and accurately – leaving only the market value of the intangible assets to be eliminated to arrive at the value of the fixed assets.

Intangible property is non-assessable in Oregon and includes software, goodwill, customer lists, contracts, patents and trademarks, assembled work force and trade secrets. The owner of an industrial property invests in intangible assets in one way or another – e.g. skilled work force by wages and benefits, trade secrets by research and development – in the hopes of a return on that investment above its cost.

Because of economic obsolescence, a struggling industrial plant with very low margins enjoys little return on intangible assets. Because the cost of creating and maintaining intangible assets are already reflected in the income stream as costs of doing business, their market value has already been accounted for in the above business value equation.

Thus, after calculating the business value of an industrial plant by the income approach, one has but to subtract the working capital from the equation to arrive at the market value of the fixed assets:

BV-WC = FA.

Of course, the devil is in the details. The two components of the income approach – the income stream and the discount, or capitalization, rate – must be accurately calculated to arrive at market value. These two components will be discussed in future columns.

How Accounting Standards deal with Obsolescence?

Indian Accounting Standard – 16 (IndAS-16) as well at International Accounting Standard – 16 (IAS-16) define "Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life". It further provides that the future economic benefits embodied in an asset are consumed by an entity principally through its use. However, other factors, such as technical or commercial obsolescence and wear and tear while an asset remains idle, often result in the diminution of the economic benefits that might have been obtained from the asset. Consequently, all the following factors are considered in determining the useful life of an asset:

a. Expected usage of the asset. Usage is assessed by reference to the asset's expected capacity or physical output.

b. Expected physical wear and tear, which depends on operational factors such as the number of shifts for which the asset is to be used and the repair and maintenance programme, and the care and maintenance of the asset while idle.

c. Technical or commercial obsolescence arising from changes or improvements in production, or from a change in the market demand for the product or service output of the asset.

d. Legal or similar limits on the use of the asset, such as the expiry dates of related leases.

Indian Accounting Standard – 36 (IndAS-36) as well at International Accounting Standard – 36 (IAS-36) define an Impairment loss is the amount by which the carrying amount of an asset or a cash-generating unit exceeds its recoverable amount.

The following external and internal signs of possible impairment are to be given consideration:

1. Market value declines for specific assets or cash generating units, beyond the declines expected as a function of asset aging and use;
2. Significant changes in the technological, market, economic, or legal environments in which the enterprise operates, or the specific market to which the asset is dedicated;
3. Increases in the market interest rate or other market-oriented rate of return such that increases in the discount rate to be employed in determining value in use can be anticipated, with a resultant enhanced likelihood that impairments will emerge;
4. Declines in the (publicly owned) entity's market capitalization suggest that the aggregate carrying value of assets exceeds the perceived value of the enterprise taken as a whole;
5. There is specific evidence of obsolescence or of physical damage to an asset or group of assets;
6. There have been significant internal changes to the organization or its operations, such as product discontinuation decisions or restructurings, so that the expected remaining useful life or utility of the asset has seemingly been reduced; and
7. Internal reporting data suggest that the economic performance of the asset or group of assets is, or will become, worse than previously anticipated.

The recoverable amount of an asset is the greater of its 'fair value less costs to sell' and its 'value in use'.

To measure impairment, the asset's carrying amount is compared with its recoverable amount. Recoverable amount is higher of fair value less costs to sell and value in use.

Determining recoverable amount

- If fair value less costs to sell or value in use is more than carrying amount, it is not necessary to calculate the other amount. The asset is not impaired.
- If fair value less costs to sell

cannot be determined, then recoverable amount is value in use.

- For assets to be disposed of, recoverable amount is fair value less costs to sell.
- If there is a binding sale agreement, use the price under that agreement less costs of disposal.
- If there is an active market for that type of asset, use market price less costs of disposal. Market price means current bid price if available, otherwise the price in the most recent transaction.
- If there is no active market, use the best estimate of the asset's selling price less costs of disposal.
- Costs of disposal are the direct added costs only (not existing costs or overhead).

Value in use

The calculation of value in use should reflect the following elements:

- Estimate of the future cash flows the entity expects to derive from the asset
- Expectations about possible variations in the amount or timing of those future cash flows
- Time value of money, represented by the current market risk-free rate of interest
- Price for bearing the uncertainty inherent in the asset
- Other factors, such as illiquidity, that market participants would reflect in pricing the future cash flows the entity expects to derive from the asset

How International Valuation Standards and Guidance Notes thereto deal with Obsolescence?

Depreciation / Obsolescence: In the context of the cost approach, depreciation refers to adjustments made to the estimated cost of creating an asset of equal utility to reflect the impact on value of any obsolescence affecting the subject asset. This meaning is different from the use of the word in financial reporting or tax law where it generally refers to a method for systematically expensing capital expenditure over time.

Depreciation adjustments are normally considered for the following types of obsolescence, which may be further divided into subcategories when making adjustments:

a. **Physical obsolescence**: any loss of utility due to the physical deterioration of the asset or its components resulting from its age and normal usage,

b. **Functional obsolescence**: any loss of utility resulting from inefficiencies in the subject asset compared to its replacement such as its design, specification or technology being outdated, and

c. **External or economic or external obsolescence**: any loss of utility caused by economic or locational factors external to the asset. This type of obsolescence can be temporary or permanent.

Depreciation/obsolescence should consider the physical and economic lives of the asset.

a. The physical life is how long the asset could be used before it would be worn out or beyond economic repair, assuming routine maintenance but disregarding any potential for refurbishment or reconstruction.

b. The economic life is how long it is anticipated that the asset could generate financial returns or provide a non-financial benefit in its current use. It will be influenced by the degree of functional or economic obsolescence to which the asset is subject. The economic life cannot exceed the physical life.

c. Except for some types of economic or external obsolescence, most types of obsolescence are measured by making comparisons between the subject asset and the hypothetical asset on which the estimated replacement or reproduction cost is based.

Physical obsolescence can be measured in two different ways:

a. Curable physical obsolescence, i.e., the cost to fix/cure the obsolescence, or

b. Incurable physical obsolescence which considers the asset's age, expected total and remaining life where the adjustment for physical obsolescence is equivalent to the proportion of the expected total life consumed.

There are two forms of functional obsolescence:

a. Excess capital cost, which can be caused by changes in design, materials of construction, technology or manufacturing techniques resulting in the availability of modern equivalent assets with lower capital costs than the subject asset, and

b. Excess operating cost, which can be caused by improvements in design or excess capacity resulting in the availability of modern equivalent assets with lower operating costs than the subject asset.

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

For real estate, external obsolescence affects both the land and the improvements. Examples of economic obsolescence include:

a. Adverse changes to demand for the products or services produced by the asset,

b. Oversupply in the market for the asset,

c. Disruption or loss of a supply of labour or raw material, or

d. Asset being used by a business that cannot afford to pay a market rent for the assets and still generate a market rate of return.

e. Cash or cash equivalents do not suffer obsolescence and are not adjusted. Marketable assets are not adjusted below their market value determined using

the market approach.

Determination of Physical Obsolescence

Let us take an example of a process furnace that operates continuously 24 hours a day, 7 days a week, and the valuer is trying to estimate its physical condition. In discussions with the operating and maintenance personnel, it has been determined: the furnace has operated normally since it was installed approximately 12 years ago; some patching on the flues and ductwork was done approximately 5 years ago; some pumps, piping, and other external equipment were replaced approximately 2 years ago; and the refractory components will need to be replaced in approximately 5 years.

For this example, assume that the effective age has been calculated to be 8 years. Further, assume that the cost of the furnace components breaks down to 30% for the refractory, 50% for the structural members, and 20% for the other equipment.

The next step would be to estimate the composite physical remaining life for the entire furnace. The valuer learned that once the refractory is replaced (in 5 years), the furnace can readily operate for another 15 years, so the physical remaining life of the structural members is 20 years (15 + 5 years). Although the other equipment is in relatively good condition, the owners do not expect it to last as long as the structural members will last. They expect to perform some maintenance on this other equipment to extend its life. The composite physical remaining life for the entire furnace can be developed as shown in Table below:

	Percent of Investment	Estimated physical Remaining Life (Years)	Weighted Remaining Life (Years)
Refractory	30%	5	1.5
Structural Members	50%	20	10
Other Equipment	20%	15	2
Totals	100%		14.5

The composite physical deterioration is simply the ratio of the effective age (8 years) divided by a denominator that is the sum of the effective age and the remaining physical life (8 + 14.5 years), which computes to 36% rounded as = 8 / (8+14.5) = 8 / 22.5 = 36%

Note that this is an estimate of the physical condition of the furnace as it exists. It does not consider the cost of the additional work that would be necessary to extend the life beyond that which is currently anticipated.

Measuring Curable and Incurable Physical Deterioration

The task is to value a crude oil tank that is part of a tank farm in an oil refinery, under a market value in continued use concept using the cost approach. The storage capacity requirements of a modern refinery are the same as those of the subject with the only difference being that a modern refinery would use fewer, but larger, individual tanks to meet those storage requirements. A replacement cost new is developed based on the configuration of the storage requirements of the modern refinery. The valuer has concluded that the replacement cost new is approximately 10% less than the reproduction cost new for the equivalent storage capacity. For this example, then, the replacement cost new for the individual tanks is simply the reproduction cost new minus 10%.

The valuer has also learned that one crude oil tank has a small leak in its bottom because of corrosion from the saltwater that is naturally present in this type of crude oil and this tank has been pumped out and is being prepared for maintenance. Preliminary indications are that the entire bottom as well as the first course of the side walls will need to be either patched or replaced, depending on the wall thickness. The planned expenditure for this repair work is approximately Rs. 350 lakhs, which includes the costs associated with removing the tank from service, cleaning, preparing a safe work environment to make the repairs, and removal and replacement of the corroded areas.

The reproduction cost new for this tank is Rs. 2000 lakhs and since replacement cost new is 10% less than reproduction cost new, its replacement cost new is Rs. 1800 lakhs. The next step is to determine the physical deterioration. In this case, we have a physical problem that is curable: replacement or patching of the tank bottom and portions of the side walls. The total physical deterioration of the tank should be deducted from reproduction cost new, since this is the specific property that is being valued. The result, expressed as a percentage of reproduction cost new, should be applied to replacement cost new. In this way, we are measuring the actual physical deterioration and deducting it proportionally from replacement cost.

The first step is to deduct the cost to cure the physical problem:

- Reproduction Cost New = Rs. 2000 lakhs
- Less Curable Physical Deterioration = Rs. 350 lakhs
- Reproduction Cost New of Incurable Portion of Tank = Rs. 1650 lakhs

The Rs. 1650 lakhs remaining is the cost of the portion of the tank subject to incurable deterioration. The incurable deterioration may be estimated using the observation or formula/ratio techniques.

Assume that the tank is 10 years old and that the valuer estimates at least another 15 years of remaining physical life (remember that these areas of the tank would not be affected by the saltwater). The total incurable physical deterioration is 40% or Rs. 660 lakhs, calculated as [10 years Effective Age / (10 years effective age + 15 years remaining useful life)] x 100 == 40%.

Finally Composite Physical Deterioration of 51% is worked out as [(Curable + Incurable Deterioration)/ Reproduction Cost New] x 100.

Several methods of estimating physical deterioration have been discussed, namely observation, age/life, use/total use, and direct dollar. All are valid given certain facts, sufficient

information, and an appropriate amount of time in which to analyze the data. In theory, all the methods should be considered, but this is not always practical. The facts and circumstances will dictate the appropriate method or methods to be used in the valuation assignment.

Measuring Functional Obsolescence

We consider the operation of boilers and look at the operating obsolescence (i.e., the functional obsolescence from excess operating costs) associated with them and the calculation of this. It is also discovered that 19 employees are required to operate the existing boiler facilities and that these individuals are assigned to each boiler as indicated in Table below.

Boiler Number	Capacity (kg. per hour)	Number of employees
1	15,000	0
2	30,000	4
3	30,000	7
4	60,000	8
Total	135,000	19

It is learned that the owners recently built another modern refinery in a neighboring state. The owners indicated that the new refinery only requires 10 employees (9 less than in the subject facility) to operate the boiler facilities. (Note that in this example, as well as in practice, the modern equivalent is more desirable because it is cheaper to build and, from a labor standpoint, cheaper to operate). The 9 extra people required in the subject facility represent additional production costs for the subject property compared with its modern counterpart. This additional cost places the subject at a disadvantage. This disadvantage, the annual excess operating costs, can be quantified by multiplying the number of excess employees' times the total labor cost per employee. For purposes of this example only, assume that the direct labor rate for each excess employee, as of the valuation date is Rs. 25 lakhs per year; and that the benefits paid by the company amount to 30% of the direct labor rate, or Rs. 7.50 lakhs. Therefore, the total cost per person is Rs. 32.50 lakhs per year, which equals Rs. 292.50 lakhs per year for the 9 people. This represents the annual excess operating cost (pre-tax) associated with the subject facility.

The next step is to convert the annual excess operating cost to present value. For this example, assume that the boilers have a remaining useful life of 10 years, the income tax rate is 40%, and the discount rate is 10%.

Figures in Rupees Lakhs

Annual Excess Operating Costs	292.50
Less Taxes at 40%	117.00
Annual Excess Operating Costs After Tax	175.50
Present Value Factor of 105 for 10 Years	x 6.1446
Operating Obsolescence(Labor)	1078.37

Measuring Operating Obsolescence

Assume a situation in which replacement cost new was greater, instead of lower, than reproduction cost new. The primary reason for was that an advancement in technology had resulted in a replacement machine that would produce each unit at a lower operating expense, although the replacement machine's capital cost (i.e., the subject's replacement cost new) was greater than the subject machine's reproduction cost new. In that example, the capacity of the subject (Model A) and its modern replacement (Model B) were both 100 units per day. However, Model A required 100,000 British thermal units (BTUs) per year, whereas Model B required only 75,000 BTUs per year, a difference of 25,000 BTUs. At Rs. 50 per BTU, Model B generates an annual operating cost savings of Rs. 12.50 lakhs per year; or stated another way, Model A incurs excess operating expense to that extent.

Assume the physical condition of the subject (Model A) translates to an estimated effective age of 6 years and research suggests that the subject's normal physical life is approximately 15 years. Given this information, there is no reason to conclude that the normal useful life will be shorter or greater than 15 years, which implies a remaining physical life of 9 years (15 - 6 = 9 years). Therefore, physical deterioration is 40% (6 ÷ [6 + 9] = 40%).

The next step is to determine the period of time during which the excess operating expense penalty of Rs. 12.50 lakhs per year will continue to be incurred by the subject. Discussions with the operating personnel suggest that a 9-year physical remaining life is a reasonable estimate. The owners indicate that major expenditures will be required at the end of the subject's physical life to improve the physical condition as well as its operating performance.

The owners are also aware that because of technological advancements, the subject property is less desirable from an operating standpoint. Nevertheless, they have no plans to replace this property in the

immediate future. On the basis of these facts, it is reasonable to conclude that the excess operating cost penalty will continue for the remainder of this asset's physical life, 9 years.

Assuming a 10% discount rate and a 40% income tax rate, the quantification of operating obsolescence is as shown in Table below:

Figures in Rupees Lakhs

Annual Excess Operating Costs	12.50
Less Taxes at 40%	5.00
Annual Excess Operating Costs After Tax	7.50

Present Value Factor of 10% for 9 Years	5.76
Operating Obsolescence: Due to Energy Differences	43.19

Thus, using the cost approach, the Fair Market Value in Continued Use with Assumed Earnings of Model A, the subject property in this example is Rs. 52.80 lakhs which is developed as shown in Table below (Note that this assumes there is no economic obsolescence):

Figures in Rupees Lakhs

Reproduction Cost New	130
Reproduction Cost New	160
Less Physical Deterioration:40%	-64
Replacement Cost New Less Physical Deterioration	96
Less Functional Obsolescence From Excess Operating Costs	43
Replacement Cost New Less Physical Deterioration and Functional Obsolescence	52.80
Less Economic Obsolescence	0
Fair Market Value in Continued Use with Assumed Earnings	52.80

This example raises several points requiring further discussion. For purposes of illustration, we have assumed that the annual excess operating cost of Rs. 12.50 lakhs will remain constant during the 9 remaining years; that is, we are assuming that production and the cost of energy will remain constant. In reality, it is often the case that operating cost differentials do not remain constant. If they do not remain constant, the valuer will need to determine the present value of each year's operating cost differential. Furthermore, in theory the discount rate should reflect the assumptions, including the risk, inherent in the projections and income stream that are the basis for the operating cost differential, which in this case would be the projections of future energy costs and production. If the risk inherent in these projections is higher or lower than the risk inherent in the subject plant's normal operations, the discount rate used to estimate operating obsolescence should be increased or decreased to reflect the different level of risk.

Measuring Economic Obsolescence

Cost Approach

The subject to be valued is a production line capable of 1,000 units per day. It is approximately 3 years old and is in excellent condition. The subject line represents the state of the art from a technological point of view. The owners indicate that there has been a dramatic increase in foreign competition and, consequently, the subject production line is currently operating at only 750 units per day.

Assume that the current replacement cost new for a plant with a capacity of 1,000 units per day is Rs. 100 lakhs; that the proper scale factor for this kind of facility is 0.7; and assumed that the physical deterioration is 15%. The task is to measure the additional depreciation (obsolescence) attributable to the reduced production.

The reduced operating level is an element of economic obsolescence since it is caused by factors external to the property. In this case, the application of an economic inutility penalty is appropriate and is developed as follows:

Inutility as a percentage = [1 – {(750 / 100)^0.7}] x 100 = 18.2%

The determination of the Fair Market Value in Continued Use with Assumed Earnings of this production line, using the cost approach, is summarized as shown in Table below:

Figures in Rupees Lakhs

Replacement Cost New	100
Less Physical Deterioration at 15%	15
Replacement Cost New Less Physical Deterioration	85
Less Functional Obsolescence From Excess Operating Costs	0
Replacement Cost New Less Physical Deterioration and Functional Obsolescence	85
Less Economic Obsolescence Calculated at 18.2%	15.50
Fair Market Value In Continued Use with assumed Earnings	69.50

Market-Derived Approach

The market-derived approach quantifies EO from sales of similar properties:

- Market comparables of similar properties must be available, and
- Sufficient information on the sales must be available to verify their similarity with the subject

Steps include:

1. Deducting land value from the sale price

2. Calculating the replacement cost new ("RCN")
3. Calculating and deducting all forms of depreciation from the RCN, except for EO
4. Subtracting the adjusted sale price (Step 1) from the RCN less depreciation (prior to EO deduction) (Step 3)
5. The result is EO based on market transactions.

Let us take an illustration of Economic Obsolescence based on Market-Derived Approach.

Figures in Rupees Lakhs

Step-1		Deduct Land Value from Sale Price	
	(a)	Sale Price of Comparable Property	100
	(b)	Less Land Value	20
	(c)	Equals Sales Price Less Land Value	80
Step-2		Develop Replacement Cost New (RCN)	
	(d)	Replacement Cost New	150
Step-3		Deduct Physical Depreciation and Functional Obsolescence	
	(e)	Less Physical Depreciation	40
	(f)	Equals Replacement Cost New Less Depreciation (RCNLD)	110
	(g)	Less Functional Obsolescence	10
	(h)	Equals Cost Indicator of Value Before Economic Obsolescence	100
Step-4		Calculate Economic Obsolescence	
	(i)	Deduct Sales Price Less Land Value	80
	(j)	Equals Economic Obsolescence	20
	(k)	Economic Obsolescence – as % of RCN	13.33%
	(l)	Economic Obsolescence – as % of RCNLD	18.18%

Income Approach

Income – Derived Approach

The income-derived approach quantifies economic obsolesces by comparing the results of an income approach of a modern replacement plant to the replacement cost new.

Steps include:

1. Using a discounted cash flow ("DCF") analysis, determine the income indicator of value for a modern replacement plant
2. Deduct land value from the income indicator of value of the modern replacement plant
3. Calculate the RCN
4. Subtract the adjusted income indicator of value (Step 1) from the RCN (Step 3)

Because the analysis is based on a modern replacement plant, physical deterioration or functional obsolescence will not exist.

Let us take an illustration of Economic Obsolescence based on Income-Derived Approach

Figures in Rupees Lakhs

Step-1		Replacement Plant (DCF Analysis)	
	(a)	Income Indicator of Value for the Modern Replacement	2500
Step-2		Deduct Land Value from Income Indictor	
	(b)	Less Land Value	50
	(c)	Equals Income Indicator Less Land Value	2450
Step-3		Develop Replacement Cost New (RCN)	
	(d)	RCN	4000
Step-4		Calculate Economic Obsolescence	
	(e)	RCN	4000
	(f)	Income Indicator Less Land Value	2450
	(g)	Economic Obsolescence	1550
	(h)	Economic Obsolescence – as % of RCN	39%

There are other approaches to measure economic obsolescence like return on capital approach and return on common equity approach depending on purpose of valuation.

Return on Total Capital Approach

The return on total capital approach quantifies EO by comparing the earnings to the magnitude of investment used to generate those earnings.

- This approach is a measure of profitability
- It measures the return an investment generates to those who contribute capital (stockholders and bondholders)
- Financial databases provide return on capital indicators
- Useful when publicly traded company information is available

Steps include:

1. Determine the historical level of return on total capital of publicly traded companies within the same industry
2. Determine the current level of return on total capital of publicly traded companies within the same industry
3. Conclude a historical level of the return on total capital
4. Conclude a current level of the return on total capital
5. Calculate EO

Return on Common Equity Approach

The return on common equity approach quantifies EO by comparing the current return on a shareholder's investment to a benchmark time period of the return on a shareholder's investment.

- Return on common equity is measured by dividing the net income by the common stock value
- The approach is similar to the return on total capital approach
- Financial databases (Value Line, Capital IQ, etc.) provide return on capital indicators
- Useful when publicly traded company information is available

Steps include:

1. Determine the historical level of return on common equity of publicly traded companies within the same industry
2. Determine the current level of return on common equity of publicly traded companies within the same industry
3. Conclude a historical level of the return on common equity
4. Conclude a current level of the return on common equity
5. Calculate EO

Conclusion

There are many techniques that can be utilized to quantify obsolescence. Obsolescence is an attribute of an operating property or business that makes it less profitable. It must be quantified from the market through an analysis of inutility, supply/demand relationships, actual sales transactions, or other indicators of market-based relationships depending on the purpose of valuation. Obsolescence – one can't see it, touch it and smell it; but one can measure it using the proper valuation tools. It's in the market, and if an informed valuer is alert, it will be heard, since when the market speaks, valuers listen.

References

1. *International Valuation Standards 2017*
2. *Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Third Edition, American Society of Appraisers*
3. *International Accounting Standards*
4. *Indian Accounting Standards*
5. *International Financial Reporting Standards*
6. *Practical cases handled by the author*

Disclaimer

This article is intended for general information purposes only and is not intended to provide, and should not be used in lieu of, professional advice. The author assumes no liability for readers' use of the information herein and readers are encouraged to seek professional assistance and other references with regard to specific matters. Any conclusions or opinions are based on the individual facts and circumstances of a particular matter and therefore may not apply in other matters. All opinions expressed in these articles are those of the authors and do not necessarily reflect the views/ recommendations of the author.

FREQUENTLY ASKED QUESTIONS ON VALUATION

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The Institute of Cost Accountants of India
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FREQUENTLY ASKED QUESTIONS ON VALUATION

Question 1. Scope of person who have qualified as Register Valuer u/s 247 of Companies Act, 2013?

Answer: A valuer shall conduct valuation required under the Act as per these rules and he may conduct valuation as per these rules if required under any other law or by any other regulatory authority. Valuation report of Register valuer qualified under Section 247 is applicable on valuation under following Laws: I. Valuation under Companies Act, 2013.

II. Valuation under Insolvency Code: Under Insolvency Code and Insolvency and Bankruptcy Board of India Regulations, 2016 – Registered Valuer means a person registered as such in accordance with the Companies Act, 2013 and rules made there under III. Valuation under SEBI : Under SEBI (REIT and InvIT) Regulations, 2016 "valuer" means any person who is a "registered valuer" under section 247 of the Companies Act, 2013 and who has been appointed by the manager to undertake valuation of the REIT assets

Question 2. Date from which Section and Rules of Register Valuer and Valuation came into effect. Answer: Section 247 of the Act has now come into force w.e.f. 18th October, 2017.

Question 3. A person rendering valuation services as on date whether he can continue to provide valuation serviced without complying the condition of this chapter or not?

Answer: Yes, as per Rule 11 Any person who may be rendering valuation services under the Act, on the date of commencement of these rules, may continue to render valuation services without a certificate of registration under these rules up to 31st March, 2018. Therefore, w.e.f. 31.03.2018 he shall not be eligible to provide the valuation services without fulfilling the condition mentioned under these Rules.

Question 4. Who is the authority to function under these rules?

Answer: The CG has delegated the powers to IBBI to function as authority under these rules.

Question 5. Whether a unregistered partnership firm can apply for the register valuer? Answer: No, an unregistered partnership firm can't apply for the same. Only a "partnership entity" means a partnership firm registered under the Indian Partnership Act, 1932

Question 6. Mandatory condition to become Register Valuer. Answer: There are three mandatory conditions to become register valuer: i. Education Qualification (as per rule 4) ii. Experience (as per rule 4) iii. Passing of Valuation examination (as per rule 5)

Question 7. Whether there is any time period of making of application for register valuer after passing of examination?

Answer: Yes, as per Rule 3(1) (c) Person have to make the application for registration as valuer within 30 year of passing of examination.

Question 8. Whether a person resident outside India can become register valuer?

Answer: As per Rule 3(1) (g) only a person resident in India can become register valuer. Clause (v) of section 2 of the Foreign Exchange Management Act, 1999 'a person residing in India for more than one hundred and eighty-two days during the course of the preceding financial year'.

Question 9. Whether a Company can be registered as register valuer. If yes, then what are the conditions for registration? Answer: Yes as per Rule 3(2)(a) a Company can be register as valuer by fulfilling the conditions. Primary Condition: it is not a subsidiary, joint venture or associate of another company or body corporate it has been set up for objects rendering professional or financial services, including valuation services three or all the directors, whichever is lower, of the company, are registered valuers; or

Question 10. Qualification to become register valuer?

Answer: Post Graduate: Post Graduate diploma in Specific discipline At least 3 year experience in specific discipline Bachelor Degree: Bachelor degree in Specific discipline At least 5 year experience in specific discipline Member of ICSI / ICSI / ICWA 3 years after membership experience Any one qualification mentioned above

Question 11. What is the meaning of Specific discipline?

Answer: Specific discipline which is relevant for valuation of an asset clause for which the registration as a valuer is sought under. In general language, specific experience in valuation of that particular class of assets in which registration as valuer is applying.

FREQUENTLY ASKED QUESTIONS ON VALUATION

Question 12. Whether there is any limit for appearance for valuation exam?

Answer: An individual may appear for the valuation examination any number of times.

Question 13. What is the Form no. for application as register valuer

Answer: Individual: Application shall be made in form A of Annexure II. Partnership Firm: Application shall be made in form B of Annexure II.

Question 14. How much is the registration Fees?

Answer: Individual: Rupees 5,000/- Partnership: Rupees 10,000/-

Question 15. Whether a register valuer can do valuation of class of assets other than in which he is registered?

Answer: A registered valuer, not conduct valuation of the assets or class(es) of assets other than for which he/it has been registered by the authority

Question 16. Whether a register valuer can transfer its membership one registered valuers organization to another?

Answer: With the prior permission of the authority register valuer can shift its membership from one registered valuers' organization to another

Question 17. Time period for maintenance of record of documents after completion of valuation. Answer: Register valuer shall maintain the record of each assignment undertaken by him for at least three years from the completion of such assignment.

Question 18. Power of the Authority.

Answer: The authority may cancel or suspend the registration of a valuer or recognition of a registered valuers organization for violation of the provisions of the Act

Question 19. Punishment for Contravention of Rules.

Answer: He shall be punishable in accordance with sub-section (3) of section 469 of the Act.

Question 20. Punishment for False statement in Report.

Answer: If in any report, certificate or other document required by, or for, the purposes of any of the provisions of the Act or the rules made there under or these rules, any person makes a statement, — (a) which is false in any material particulars, knowing it to be false; or (b) which omits any material fact, knowing it to be material, he shall be liable under section 448 of the Act.

Question 21. Code of Conduct for Register Valuer.

Answer: Integrity and Fairness Professional competence and Due care Independence and disclosure of Interest Confidentiality Information Management Gifts and Hospitality Remuneration and cost Occupation, employ ability and restrictions.

Question 22. Which is the assets class in which Company Secretaries, Chartered Accountants are allowed to get register as register valuer.

Answer: As per annexure IV, Company Secretarial and Chartered Accountants are allowed to get register as register valuer in the field of "Securities of Financial Assets".

Question 23. Requirement of Education qualification, experience and Valuation specific education course for valuation of Securities or Financial Assets by member of ICSI / ICAI / ICMA.

Answer: i. Education Qualification: Member of the Institute of Chartered Accountants or The Institute of Cost Accountants of India or the Institute of Company Secretaries of India; ii. Experience: Three years of experience in the discipline. iii. Courses as per syllabus specified under rule 5 of the Valuation Rules. Note: In case a partnership entity or company is the registered valuer, allow only the partner or director who is a registered valuer for the asset class (es) that is being valued to sign and act on behalf of it.

INTERNATIONAL VALUATION STANDARDS COUNCIL (IVSC)

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FREQUENTLY ASKED QUESTIONS

Covering FAQs for the latest version of IVS - effective January 2022

1. How will I know which parts of the IVS have been updated in the latest edition?

Alongside the updated IVS publication, which is available to download as a PDF document, the IVSC will publish a 'red line' version of the standards. This red line version will clearly show where changes have been introduced to the previous version. The red line version will show where new text has added, and where earlier text has been amended/deleted.

In addition to the red line version of the standards, the IVSC Standards Review Board will make available a 'Basis of Conclusions' document, providing the rationale for changes to the standards and drawing on feedback from earlier consultations. This Basis of Conclusions document will be published alongside the IVS and the red line version of the standards at the earliest opportunity following their publication.

2. Why is the year of publication no longer includedin the title?

The year of publication has been removed from the title of the International Valuation Standards and replaced with an 'effective date' (i.e. the date at which the standards formally come into effect).

The standards boards concluded that retaining the year of publication in the title could cause confusion, based on the planned publication cycle, and might also limit the responsiveness of the standards to market needs.

The IVS may now be updated in either January or July of each year, to incorporate new or amended standards following public consultations. For example, if a consultation is completed in November then IVS would be published to reflect these changes in January of the following year. If a consultation closes in March, then the IVS will be updated to incorporate these revisions in July. The Standards Review Board has, however, decided that IVS will only be updated once in a calendar year. In some years it is possible that the standards will not be updated at all.

Retaining the year of publication in the title would become confusing if, for example, IVS was updated in January one year and then in July the following year. It might also set an expectation that IVS will be updated each and every year, which is not necessarily the case.

By including the effective date for the standards on the front cover, it will be clear to users, and to the marketplace more generally, when the standards are applicable from.

As with earlier updates to IVS, until such time as the standards become effective the previous version of IVS will be applicable. However, early adoption of the new standards will be encouraged, especially where they have been introduced for the first time (i.e. where no standards relating to the subject matter existed previously).

The latest version of the standards will always be prominently displayed on IVS Online. Details of the latest standards, including effective date, will also be clearly set out on the standards pages of the IVSC website: www.ivsc.org

3. Why not publish an annual update to IVS instead?

It is not always the case that the IVS will need to be updated every year. Equally, the boards have two windows within a calendar year (either January or July) when they can issue an update to the standards – this allows them to be more responsive to market needs. The boards have resolved to publish IVS updates with an 'effective date' instead.

4. How will I know which is the latest version of the IVS?

The latest version of the IVS will be prominently published, along with a red line version of the standards, on the IVSC's standards platform, 'IVS Online': www.ivsonline.org

Earlier editions of the standards will be clearly 'archived' and made available for download, along with their corresponding red line version and basis of conclusions.

5. How can I access the IVS?

The latest edition of the standards will be available to download online through the IVSC's standards portal, IVS Online at: www.ivsonline.org. Archived versions of the standards will also be available to download from this site.

IVSC sponsor organisations, including their employees, are given free access to IVS Online with the use of a code which can be provided by the IVSC by emailing: contact@ivsc.org.

IVSC member organisations will receive an electronic (PDF) copy of the latest standards upon their publication.

For non- sponsors/members, access to IVS Online is available through an annual subscription, with discounts available to groups of subscribers.

6. How do the IVSC's standards boards identify and agree revisions to the IVS?

The standards can be revised in two ways, potentially – 1. Additions: by incorporating new text in the form of standards (e.g. in emerging aspects of the valuation profession);

2. Technical Revisions: by revising or removing existing text (e.g. where there is an observed issue of clarity or interpretation).

Any changes to IVS will be consulted on for a minimum of three months before being introduced in an updated edition of the IVS. These consultations will be communicated through the IVSC website, in eNews and across social media channels. Feedback to the consultations will be welcomed from all parties, and will contribute to the deliberations by the technical standards boards.

In their basis of conclusions document, the standards boards will give a summary of the consultation responses received together with their rationale for introducing updates to the IVS, based on the feedback to consultations and their deliberations as a board. The individual consultation responses will also be published unless requested by the respondent to remain anonymous and will be posted on the website alongside the basis of conclusion.

7. Can I start using the new IVS before it becomes 'effective'?

Although each new edition of IVS only becomes 'effective' after a six month period of familiarisation, the IVSC encourages early adoption. It is therefore important that valuers clearly state which version of the IVS they are applying when preparing a valuation report.

The standards boards are happy to see early adoption of the standards, especially where new standards are introduced for the first time.

8. Who is responsible for drafting and approving updates to the IVS?

The standards are drafted, consulted on, agreed and published by the IVSC's independent standards boards. Three technical boards (Business Valuation Board, Financial Instruments Board and Tangible Assets Board) lead on the asset-specific chapters of the IVS. The Standards Review Board oversees the work of the technical boards and leads on matters relating to the 'General Standards' chapters of the IVS.

9. I need to access an old version of IVS, where can I find it?

Older editions of IVS are archived and made available for download from the IVSC's online standards portal, IVS Online: www.ivsonline.org

10. Can I purchase a hard copy of the standards?

Hard copies of the standards are available to purchase through the IVSC's online bookstore: http://www.pagebros.co.uk/ivs/

Hot Topic: Coronavirus
Increased risk of impairment of goodwill and long-lived assets

KPMG discusses FAQs relating to the impairment of goodwill and long-lived assets as a result of COVID-19

Background

The COVID-19 outbreak is having a significant impact on global markets driven by supply chain and production disruptions, workforce restrictions, travel restrictions, reduced consumer spending and sentiment, among other factors, which are negatively impacting companies' financial performance.

As part of the overall analysis of the financial reporting impacts of COVID-19, companies may need to evaluate the recoverability of goodwill, intangible assets, property, plant and equipment, and lease right-of-use (ROU) assets.

General questions that companies may be asking include the following.

- ✓ Has our supply chain been disrupted so that we cannot procure raw materials or components for finished goods?
- ✓ Has volatility in commodity prices negatively impacted revenues or production costs?
- ✓ Have workforce limitations impeded our ability to manufacture products or service our customers?
- ✓ Have we provided concessions to our customers that exceed normal business practice?
- ✓ Have we lost business due to event cancellations, store or facility closures, lower consumer sentiment, etc.?
- ✓ Are operations being curtailed temporarily, or assets mothballed?
- ✓ Have the circumstances significantly changed how we expect to use our long-lived assets?
- ✓ Are our customers struggling to pay their obligations or even remain in business?
- ✓ Has our stock price significantly decreased?
- ✓ Have we revised our earnings guidance downward?

If the answer to any of these questions is 'yes', a triggering event may have occurred and impairment testing may be required.

Goodwill

Goodwill is tested for impairment at a level of reporting referred to as a 'reporting unit'. A reporting unit is an operating segment or one level below an operating segment (also known as a 'component'). A quantitative impairment test is used to identify and measure any impairment. An impairment loss is incurred when the carrying amount of a reporting unit is greater than its fair value; the excess is the impairment loss recognized.[2]

A company has the option of performing a qualitative evaluation of whether it is more likely than not that a reporting unit's fair value is less than its carrying amount (Step 0 evaluation). If it is more likely than not that the goodwill is impaired, the company must move on to the quantitative test. If it is not, the company need not perform the quantitative test.

Goodwill is tested for impairment on an annual basis. However, goodwill must be tested between annual tests if an event occurs or circumstances change to indicate that it is more likely than not that an impairment loss has been incurred (i.e. a triggering event).

Example triggering events

The following are examples (not exhaustive) of events or circumstances that suggest a possible impairment of goodwill, many of which resonate in the current environment.

Macroeconomic conditions	Deterioration in general economic conditions; limitations on accessing capital; fluctuations in foreign exchange rates; other developments in equity and credit markets.
Industry and market considerations	Deterioration in the environment in which an entity operates; an increased competitive environment; a decline in market-dependent multiples or metrics (absolute terms and/or relative to peers); a change in the market for an entity's products or services; a regulatory or political development.
Cost factors	Increases in raw materials, labor or other costs that have a negative effect on earnings and cash flows.
Financial performance	Negative or declining cash flows or a decline in actual or planned revenue or earnings compared with actual and projected results of relevant prior periods.

[1] The Q&As have been added in this update

Entity-specific events	Changes in management, key personnel, strategy or customers; contemplation of bankruptcy; litigation.
Events affecting a reporting unit	Changes in the composition or carrying amount of net assets; a more-likely-than-not expectation of selling or disposing of all, or a portion, of a reporting unit; the testing for recoverability of a significant asset group within a reporting unit; recognition of a goodwill impairment loss in the financial statements of a component subsidiary.
Share price	A sustained decrease in share price (absolute terms and/or relative to peers). The capital markets downturn as a result of the COVID-19 outbreak may be a triggering event that requires a company to test its goodwill for impairment. However, a single day's market capitalization might not be the best indication of fair value in volatile markets; instead, it might be appropriate to use an average market price over a reasonable period of time preceding the measurement date (see Question 80).

Question 10

Do we expect companies to have a triggering event for goodwill in the period ended March 31, 2020?

Interpretive response: It depends. We expect that many companies will have a triggering event because the current conditions give rise to one or more of the factors identified above. However, the analysis as to whether it is more likely than not that the fair value of one or more reporting units is below their carrying amounts is company-specific. Therefore, there could be situations in which no triggering event has occurred for a particular company.

For example, a company may be able to conclude that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount if its market capitalization is still in excess of its book value, and there was significant headroom at its reporting units in previous quantitative tests. In such cases, a decline in share price and deterioration in economic factors might not be expected to reduce fair value below the carrying amount.

If a company concludes that there is not a triggering event, we believe its conclusion should be supported by robust documentation clearly laying out the judgments made and why each of the factors does not demonstrate that it is more likely than not that the fair value of any reporting unit is below its carrying amount.

Question 20

If a company has experienced a decline in stock price consistent with its industry, does it have a triggering event?

Interpretive response: It depends. As discussed in Question 10, it is important that companies evaluate all factors contributing to the industry stock price relative to their own situations. However, generally speaking, an industry decline often indicates economic and/or other factors that give rise to a triggering event.

Even with the sudden declines in the overall market stemming from COVID-19, we do not believe the current market would be considered disorderly, and the industry and overall market trends should be considered to determine if a triggering event has occurred. We believe the equity markets are generally efficient and provide a meaningful indicator of fair value. While the equity markets are presently volatile, they are active; and equity values used in impairment testing should not be adjusted for any type of illiquidity or mark-to-model techniques.

Question 30

Can a company apply Step 0 in a goodwill impairment test when there is a triggering event?

Interpretive response: Generally, no. The factors to consider when evaluating whether there is a triggering event are the same as the factors to consider in the qualitative test. Therefore, after a triggering event, a qualitative analysis would likely indicate the company should move to the quantitative impairment test.

Determining fair value

The quantitative goodwill impairment test compares the fair value of a reporting unit to its carrying amount. The fair value of the reporting unit is the price at which the reporting unit as a whole could be sold in an orderly transaction between market participants.

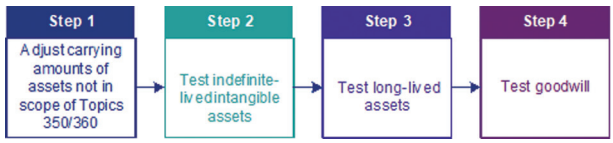
For general guidance on the determination of fair value, see KPMG's Q&A: Fair value measurement.

Question 40

Does the sequence in which a company performs its impairment testing matter?

Interpretive response: Yes. A company may need to test goodwill and other assets (e.g. long-lived assets, equity method investments and/or inventory) for impairment at the same time. The company should perform impairment testing in the following order.

[2] This Hot Topic assumes that ASU 2017-04 (simplifying goodwill impairment testing) has been adopted. If it has not been adopted, goodwill is tested for impairment following a two-step process, but the issues discussed in this Hot Topic remain the same, unless otherwisenoted.



The company makes adjustments to carrying amounts for any resulting impairment losses before performing the next test. However, if an asset group that includes goodwill is classified as held-for- sale, the goodwill is tested for impairment before the rest of the disposal group and additional guidance under Topic 360 applies. [350-20-35-31]

Question 50

Can a company disregard current market prices because of COVID-19?

Interpretive response: No. Subtopic 350-20 states that "market prices in an active market are the best evidence of fair value and shall be used as the basis for measurement, if available." Many may question whether the current equity markets are in temporary decline or dislocated, and are therefore not an appropriate measure of fair value. We believe the equity markets provide a meaningful indicator of fair value, even in depressed markets, and therefore market prices should always be considered when available in measuring fair value. However, the quoted market price of an individual security need not necessarily be the sole measurement basis of the fair value of a reporting unit (see Question 90).

Further, it may be appropriate to use an average price in certain situations (see Question 80).

Question 60

Can a company change its valuation techniques for goodwill impairment testing as a result of COVID-19?

Interpretive response: It depends. In many cases, multiple valuation approaches are acceptable. Changing the weighting or valuation techniques used is appropriate when the resulting change in measurement is more representative of fair value, and the change would be considered a change in estimate. For example, when estimating the fair value of a reporting unit, both a market approach and an income approach may be appropriate. If multiple valuation approaches are used to estimate fair value, the results of each should be considered and weighted, as appropriate, in estimating the fair value of the reportingunit.

We expect each of the valuation techniques used to measure the fair value of the reporting unit to reasonably corroborate the results of the other techniques applied. In theory, each measure of fair value should approach the same amount as the calculations in each method are further refined. Less reliance should be placed on internally developed models that have not been calibrated to observable orderly transactions.

Careful judgment should be applied when placing more emphasis on one valuation technique over another. Given the changes in the economic outlook for many companies, it may be appropriate to change the weighting or valuation techniques to reflect the current environment. However, it is not appropriate to change and disregard a previously used approach to avoid an impairment. For example, if a company previously determined the fair value of a reporting unit based 50% on a market approach (taking into account market capitalization) and 50% on an income approach, it would not be appropriate to change to a 100% income approach simply because the market capitalization had fallen significantly, unless the company can demonstrate and document that the market approach in the current situation does not produce a meaningful indication of fair value.

Question 70

Can a company make its best estimate of an impairment loss if not yet complete at the time it issues its financial statements?

Interpretive response: No. Before the adoption of ASU 2017-04[3], a company was required to recognize the best estimate of an impairment loss if Step 2 of the goodwill impairment test was not complete at the time the financial statements were issued (or available to be issued) and the impairment loss was probable and could be reasonably estimated. In ASU 2017-04, the Board decided to eliminate Step 2 and not to allow for an estimate if the quantitative test is not yet complete. As such, companies that have adopted ASU 2017-04 must complete the one-step impairment test before the date the financial statements are issued (available to be issued).

If a public company cannot meet its filing deadline due to circumstances related to COVID-19, the SEC has temporarily extended required filing deadlines to 45 days after the original due date. For further guidance regarding regulatory relief for companies impacted by COVID-19, see KPMG's Hot Topic, SEC extends regulatory relief for companies impacted by coronavirus.

Reconciling fair value to market capitalization

When performing a goodwill impairment test, a company should reconcile its market capitalization to the fair value of its reporting units, especially if the market value is lower than the fair value. The reconciliation of the fair value of the reporting units to the company's market capitalization serves as an overall check of the reasonableness of the estimated fair values attributed to multiple reporting units as part of a goodwill impairment test. [SEC Regs Comm 10/2008, 2008 AICPA Conf]

When performing the reconciliation, a company may consider the best practice guidance provided by the

[3] See Footnote 2

AICPA to identify and document significant differences between market capitalization and fair value, including control synergies, asymmetric data, entity-specific versus market capital structures, and other factors.[4] Some or all of the difference between market capitalization and fair value may be ascribed to a control premium or Market Participant Acquisition Premium (MPAP), depending on the circumstances. However, a company should not simply default to ascribing an increase in the difference between the market capitalization and the concluded fair value to an increase in the control premium or MPAP. Instead, the company should understand how its stock price has been affected by general market conditions and volatility (see Question 90).

A low stock price may reflect a temporary decline. However, a low market capitalization, especially when below the company's or the reporting unit's carrying amount, may indicate that there are additional factors to consider in determining the fair value of the reporting unit. A goodwill triggering event and impairment test is not based on an other-than-temporary decline in fair value; instead, an impairment loss exists when the fair value of a reporting unit falls below its carrying amount at the measurement date.

Question 80

Can a company use an average stock price when reconciling to market capitalization?

Interpretive response: Generally, yes. The SEC staff has stated that in volatile market conditions it may be appropriate, in many cases, for management to consider the market capitalization based on an average share price over a reasonable period as a better estimate of the fair value of a reporting unit (or a company). We believe that guidance continues to be relevant in the current environment. [2008 AICPA Conf]

Given the sudden volatility in current market prices, it may be challenging to determine what period of time would be considered a 'reasonable' period. Generally, the reasonable period used in averaging the stock price will precede and lead up to, but not go past, the measurement date (e.g. March 31, 2020).

Due to the timing of recent events and volatility, it would generally not be appropriate for a company to use an average that includes dates before the recent downturn. For example, it likely would not be appropriate to use average prices for the entire quarter ended March 31, 2020. Since markets reached all-time highs toward the end of February 2020, and the suddenness of the COVID-19 related decline, we believe the appropriate period to capture for purposes of averaging might encompass days or weeks, but not months. In subsequent periods, a different average may be appropriate. In any case, a reasonable period of time should not be established with the intent to avoid an impairment.

The length of the averaging period will also depend on company-specific facts and circumstances. For example, it may not be appropriate to consider prices in periods before certain entity-specific events –

e.g. loss of key customers, revision(s) in earnings guidance, reductions in workforce – as the change in price may not be due solely to volatility in the capital markets.

In any case, we would expect a company to prepare robust documentation of its key judgments in determining the averaging period.

Question 90

How does a company determine a MPAP (or control premium) in the current environment?

Interpretive response: Generally, the MPAP is best corroborated by specific, comparable and current industry transactions. If there is no (or limited) current market activity to support the MPAP, historical transactions may need to be considered. Given the sudden decline in the equity markets, we generally expect that control premiums will increase compared to historical premiums. However, companies should avoid applying control premiums based on arbitrary 'rule of thumb' percentages or backing into an amount that avoids an impairment loss.

The SEC staff has noted that the amount of the control premium "can require a great deal of judgment" and "a registrant needs to carefully analyze the facts and circumstances of their particular situation when determining an appropriate control premium and…there is normally a range of reasonable judgments a registrant might reach." Additionally, the SEC staff noted that it is their expectation that the amount of evidence supporting management's judgment would increase as the control premium increases. [2008 AICPA Conf]

We believe the SEC staff's historical views provide relevant insight in light of current market conditions, and that determining a reasonable control premium will require judgment and consideration of the company's specific facts and circumstances and available comparable transactions. When using a MPAP at the higher end of the range, more time will likely be spent supporting this assumption.

Often this is done by quantifying the present value of market participant synergies that can be realized from the acquisition of the subject company.

For further guidance, companies can refer to the following sources.

- ✓ Appraisal Foundation, Valuations in Financial Reporting Valuation Advisory 3: The Measurement and Application of Market Participant Acquisition Premiums; and

[4] AICPA Accounting and Valuation Guide: Testing Goodwill for Impairment, November 2013

- ✓ AICPA, Accounting and Valuation Guide: Testing Goodwill for Impairment.

Question 100

How does a company adjust discounted cash flow models to reflect the impact of COVID-19?

Interpretive response: Given the uncertainties in the current environment, we expect that companies will adjust both the future expected cash flows and the discount rate for the increased risk factors when compared to analyses in more stable market conditions. Further, given the current uncertainties, it may be necessary to incorporate a COVID-19 company-specific risk premium in the cost of equity estimate. In addition to the discount rate and financial projections, the long-term growth rate is another assumption that may be impacted by the COVID-19 crisis, and previous long-term growth rate assumptions may need to be revisited.

Question 110

Can a company use forward-looking valuation multiples in the current environment?

Interpretive response: It depends. When applying the guideline public company approach, forward multiples, which are based on projected financial metrics, may sometimes be used to better incorporate future growth andprofitability.

Due to the significant amount of uncertainty in the current environment, many public companies have withdrawn their earnings guidance for fiscal year 2020. Earnings estimates by equity analysts may have also been withdrawn or could be stale. Given these dynamics, observable forward multiples may no longer be current or may be otherwise unreliable. As such, companies should be cautious when using observable forward multiples and perform additional due diligence to assess their reasonableness. In particular, they should confirm the date of estimates and how the estimates have been updated following the crisis. In situations where reliable forward-looking analyst estimates can be obtained, companies must also be careful to ensure that the subject company's projected financial metrics are also current.

Question 120

Does a company need to reconcile the fair value of its reporting units to its market capitalization when some but not all reporting units are tested for impairment?

Interpretive response: Yes, although the approach may differ. When a company has performed a quantitative measurement of fair value for certain of its reporting units and only a qualitative assessment for others (i.e. only some reporting units have triggering events), it could be difficult for a company to perform the market capitalization reconciliation. This may result in companies using greater judgment about when and how to perform this evaluation. [ASU 2011-08.BC34]

We believe one approach to perform the reconciliation of market capitalization is to consider the current fair value of the reporting units for which the quantitative test is performed, and a qualitative assessment for the remaining reporting units that factors in the most recent quantitative measurement. In most cases, a company should make adjustments to the most recent quantitative measurements of these reporting units to account for the change in the economic environment.

Other assets

Long-lived assets and any indefinite-lived intangible assets in a reporting unit that require impairment testing are tested for impairment before goodwill is tested (see Question 40). The carrying amounts of such assets are decreased for any impairment losses, with a corresponding adjustment to the carrying amount of the reporting unit in which those assets reside.

In addition to potential impairment, a company should reevaluate the useful lives of its intangible and tangible assets based on the changing circumstances and management's plans to respond to these events.

Indefinite-lived intangible assets

Similar to goodwill, indefinite-lived intangible assets are tested for impairment on an annual basis, but more frequently if a triggering event occurs. An impairment loss is incurred when the carrying amount of the asset is greater than its fair value; the excess is the impairment loss recognized.

The impairment indicators for indefinite-lived intangible assets are similar to those identified above for goodwill, focusing on the effect of events on the significant inputs used to determine the fair values of such assets.

Long-lived assets

The impairment testing for long-lived assets (e.g. property, plant and equipment, finite-lived intangible assets and lease ROU assets) is entirely trigger-based, and they are tested for impairment when one or more events or circumstances indicate that their carrying amounts may not be recoverable. An impairment loss *exists* if the carrying amount of the asset (asset group) exceeds the sum of the estimated undiscounted future cash flows from the use and eventual disposition of the asset group. In that case, the impairment loss is *measured* as the amount by which the carrying amount of the asset (asset group) exceeds its fair value.

The following are examples (not exhaustive) of events or circumstances that suggest a possible impairment of long-lived assets, some of which resonate in the current environment.

Market price	A significant decrease in the market price of a long-lived asset (asset group).
Changes in asset use	A significant adverse change in the extent or manner in which a long-lived asset (asset group) is being used or in its physical condition.
Changes in legal factors/ business climate	A significant adverse change in legal factors or in the business climate that could affect the value of a long-lived asset (asset group), including an adverse action or assessment by a regulator.
Cost factors	An accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset (asset group).
Financial perfor-mance	A current-period operating or cash flow loss combined with a history of operating or cash flow losses or a projection or forecast that demonstrates continuing losses associated with the use of a long-lived asset (asset group).
Events affecting an asset's use	A current expectation that, more likely than not, a long-lived asset (asset group) will be sold or oth-erwise disposed of significantly before the end of its previously estimated useful life.

In addition, negative trends should be assessed to determine whether they apply to a specific point in time or an extended period of time. For example, declines in profit as a result of the COVID-19 outbreak may be short-lived or extend into the foreseeable future. When determining the impact on the recoverability of long-lived assets, companies should not only assess the current period, but analyze the impact over the remaining useful life of the asset(s).

KPMG's Hot Topic, Lease accounting impacts of COVID-19, discusses some specific considerations around lease ROU assets.

Question 130

Do we expect companies to have a triggering event for long-lived assets in the period ended March 31, 2020?

Interpretive response: It depends. In the current environment, we expect companies to have a robust process for identifying triggering events. Simply asserting that it is too soon to evaluate the impact of COVID-19 is not appropriate.

A company's evaluation should consider market-based conditions, including COVID-19's impact on the industry, sector and geographies in which the company operates, and estimates of the length of the downturn and expectations for recovery. The evaluation should also include asset-specific factors, including:

- ✓ changes in plans for the asset or asset group;
- ✓ the remaining useful life of the asset or asset group;
- ✓ the economic performance of the asset or asset group before the current events, including the results of previous recoverability analyses; and
- ✓ the previous 'cushion' between fair value and the carrying amount.

Companies may have certain long-lived assets or asset groups where a triggering event is identified and others where it is not. A company may also identify a triggering event for a reporting unit in its separate goodwill impairment test (which focuses on fair value, not recoverability), and not identify triggering events for individual long-lived assets or asset groups within that reporting unit, or vice versa.

As a reminder, when companies are performing impairment tests for both long-lived assets and goodwill at the same time, the sequence in which the impairment tests occur is important (see Question 40). While long-lived asset impairment tests are generally performed before goodwill impairment tests, in certain cases performing the goodwill impairment test may reveal new information

– indicating that certain long-lived assets are not recoverable – that the company had not previously considered. In that situation, the company needs to reevaluate the recoverability of the carrying amounts of those long-lived assets and then complete the goodwill impairment test.

Question 140

How does a company determine undiscounted cash flows for an asset group in the current environment?

Interpretive response: Due to the uncertainties in the current environment, we expect companies to adjust the projected cash flows used in their recoverability tests and fair value estimates. The cash flows should be updated for known or expected events, such as the loss of a significant customer or tenant. Additionally, changes in management's plans or the company's ability to hold an asset or asset group

may alter the time period used for recoverability – i.e. the length of cash flows projected. In all cases, the projected undiscounted cash flows used for the recoverability test should be consistent with the information the company uses for both internal planning and external communication.

Topic 360 does not require an entity to apply a single approach to testing all asset groups for recoverability and some entities apply either a best-estimate approach or a probability-weighted approach. Probability-weighted cash flows for multiple outcomes may be appropriate at this time due to uncertainty around the severity and duration of the economic impact from COVID-19 – even if the company used a best-estimate approach in prior periods.

Question 150

Should a company adjust the useful lives of long-lived assets as a result of COVID-19?

Interpretive response: It depends. Companies should periodically reassess the estimated useful life of depreciable (amortizable) long-lived assets. If COVID-19 results in a change in management's plans for an asset or asset group, its useful life should be updated. However, an entity should recognize an impairment loss before revising depreciation (amortization) estimates and a decrease in the expected useful life may be a triggering event.

Regardless of whether an impairment charge is taken, the company adjusts the depreciation (amortization) of the carrying amount over the new estimated useful life. This change in estimate is accounted for on a prospective basis only – i.e. a catch-up in the current period on a cumulative-effect basis is not appropriate.

Disclosures

A public company should consider the following disclosures relating to impairment in its interim and annual financial statements. Additionally, KPMG's Hot Topic, Subsequent events, going concern and risk disclosure impacts of COVID-19, discusses other potential disclosures relating to COVID-19.

Early warning disclosure

Disclosure of the potential for material impairment charges is required if not recorded in the current period and generally would be expected to be disclosed in periods in advance of the charge (e.g. potential for a charge in periods after March 31, 2020). [Reg S-K Item 303(a)(3)(ii)]

The SEC staff has previously stated that it has increased its focus on disclosures included in Management's Discussion and Analysis (MD&A) associated with goodwill impairment testing. The SEC staff has also discussed its expectation with respect to the types of disclosures it expects in MD&A. [2009 AICPA Conf]

For example, if a company has a reporting unit that is at risk of failing the quantitative goodwill impairment test, and an impairment of goodwill allocated to that reporting unit could be material, the SEC staff would expect that company to highlight the risk of impairment in its financial statements. Further, if the fair value of a reporting unit as of the date of the last impairment test is not substantially in excess of the carrying amount, the SEC staff expects companies to disclose:

- ✓ the percentage by which the fair value of the reporting unit exceeds its carrying amount;
- ✓ the amount of goodwill allocated to the reporting unit;
- ✓ a discussion of the assumptions used and any uncertainty inherent in those assumptions; and
- ✓ a discussion of the potential events and circumstances that could have a negative effect on the assumptions.

In addition, Topic 275 (risks and uncertainties) requires that a company disclose in its financial statements events or circumstances that could significantly affect the amounts that are reported in the financial statements.

Impairment charge recognized

If goodwill is impaired, the company should disclose the facts and circumstances that led to the impairment triggering events. In addition, companies should discuss how the factors that triggered the impairment charge might alter the future expectations of earnings and cash flows related to the business.

Critical accounting estimates

More transparent and robust disclosures are appropriate in the critical accounting estimates section of MD&A regarding the goodwill impairment valuation techniques and critical assumptions used, such as:

- ✓ how reporting units are determined;
- ✓ the methodology and assumptions used to determine the fair value of reporting units;
- ✓ the valuation method(s) used;
- ✓ if multiple valuation methods are used, the weighting applied to different methods and reason(s) for doing so; and
- ✓ key assumptions and sensitivity analyses.

As previously discussed, public companies should provide an explanation in MD&A of the difference between the sum of the estimated fair value of multiple reporting units and the company's market capitalization, including information about:

- ✓ how the control premium is determined; and
- ✓ the measurement date (or range of dates used) for market prices.

Public companies are also required to disclose and discuss implications of key assumptions used to develop cash flow

projections for long-lived asset impairment testing within MD&A, including information about whether:

- ✓ the cash flow projections indicate that the company is likely to violate debt covenants in the future;
- ✓ the company has informed the market and its shareholders of its reduced expectations for the future that are sufficient to cause a future impairment charge; and
- ✓ the company has discussed with external analysts growth rates used in the impairment analysis that are lower than those used by analysts.

These disclosures are required each reporting period with an explanation of any changes from prior periods.

Subsequent events

The World Health Organization did not announce the coronavirus as a global health emergency until the end of January 2020, and no significant measures were taken by any governments until early 2020.

Further, the effects of the COVID-19 outbreak did not have a significant impact on global markets and share prices until February2020.

Therefore, in following the subsequent events guidance in Topic 855 in the context of goodwill and long-lived asset impairment testing, a triggering event related specifically to the COVID-19 outbreak would not generally be accounted for as a recognized subsequent event for companies with fiscal years ended December 31, 2019. However, companies should ensure that they properly distinguish COVID-19 related triggers from other possible triggers that could represent the culmination of conditions that existed over a relatively long period of time, in which case they may be recognized subsequent events.

For calendar-year companies that have not yet reported for the year ended December 31, 2019, who conclude that an impairment loss is a nonrecognized subsequent event, disclosures will be required. These include the nature of the event, and an estimate of its financial effect or a statement that such an estimate cannot be made. In addition, Topic 275 requires broad disclosures about risks and uncertainties, including disclosures about estimates that may change in the near future.

For companies whose fiscal year is other than the calendar year, and calendar-year companies reporting in Q1 2020, the COVID-19 outbreak is a current period event that will require ongoing evaluation to determine the extent to which developments after the respective reporting date should be recognized in that reporting period.

KPMG's Hot Topic, Subsequent events, going concern and risk disclosure impacts of COVID-19, discusses further considerations regarding subsequent events.

Question 160

Can a company use market prices after the reporting date in its average market price?

Interpretive response: Generally, no. Changes in market prices after the reporting date should not be considered in determining average market prices. Those changes do not reflect conditions at the reporting date; therefore, they are generally a nonrecognized subsequent event. However, such changes may require a company to reevaluate whether all conditions existing at the reporting date were considered.

Question 170

Should a company consider new conditions arising after the reporting date when evaluating whether a long-lived asset group is impaired?

Interpretive response: No. As the COVID-19 outbreak progresses and information evolves, a company should evaluate whether it relates to new conditions or conditions that existed at the reporting date.

Estimates of cash flows and asset values for purposes of testing long-lived assets for recoverability should be based on conditions that existed at the reporting date without using hindsight.

Because it is difficult to separate the effects of hindsight when assessing conditions existing at an earlier date, it is important that judgments about those conditions, the need to test an asset for recoverability and the application of a recoverability test be made and documented together with supporting evidence on a timely basis.

Evolving information

The potential global and economic impacts of the coronavirus continue to evolve rapidly, and companies should monitor the situation. Companies are encouraged to maintain close communications with their boards of directors, external auditors, legal counsel and other service providers as the circumstances progress. Stay informed at read.kpmg.us/coronavirus

Quantifying Value Created From Private Equity ESG Initiatives

By George Pushner, Ph.D., and P.J. Viscio

Environmental, social, and governance (ESG) factors have become a significant and a continued focus for investors. According to Prequin, 1,600 private capital funds have been closed by ESG-committed GPs since 2015, and this has raised $1.69 trillion of capital.

The focus on ESG may or may not correlate with value for investors, however. There is a large body of literature that addresses whether a focus on ESG (or 'responsible') investing helps or hurts returns. We do not address that complex issue here, but instead we hope to provide insight on how to measure the value creation impacts from specific ESG activities at the individual company level.

A wealth of ESG metrics and data have proliferated from well-known non-governmental organizations (NGOs) and commercial data providers. Many widely utilized metrics attempt to measure value to society and are inherently non-financial, but as investors seek to determine whether ESG activities have enhanced financial returns, a number of financial measures are now included.

It is apparent that both traditional and financial Metrics suffer froM a lack of standardization and transparency in reporting.[3] But even More probleMatic, at least froM our perspective, is that they do not Measure or identify value creation froM an investor's perspective.

While at least two papers do address ESG and value creation, we believe these efforts are incomplete as they 1) do not measure or incorporate impacts on the risk of the firm, and 2) appear to lack integration of the various financial impacts with the costs of the ESG initiatives.

Value creation from ESG initiatives can be measured, however, and we suggest a more comprehensive framework for measuring ESG value creation that builds on the Kroll Created Value Attribution (CVA) Framework ("the Kroll CVA Framework", fka the Duff & Phelps CVA Framework).

We also note, however, that many aspects of ESG policies and initiatives are important, but inherently difficult to quantify and the Kroll CVA Framework lends itself more readily to certain aspects of ESG than others. For example, the quality of governance policies is difficult to quantify, but likely to be an important factor in evaluating an ESG program. The analysis of ESG efforts is a rapidly evolving field with many aspects, and while the Kroll CVA Framework offers a major advancement in terms of measuring value creation, the measurement of ESG impacts remains a key challenge in many areas.

This paper begins with an overview of widely utilized and financial metrics and the challenges they pose to investors. We then explore efforts to identify ESG-driven value creation more directly, and the limitations that we observe in this regard. Finally, we show how value creation attributable to ESG initiatives can be measured through the Kroll CVA Framework.

The World of ESG Metrics

There are a large number of both ESG metrics and ESG data providers that compete for the attention of investors and other interested parties. According to the Global Initiative for Sustainability Ratings, back in 2016 there were more than 125 ESG data providers.[4] As a sample of the metrics, we can look at those provided by MSCI, where we find 56 non-financial metrics that cover areas such as climate change, natural capital, pollution and waste, human capital and corporate behavior.[5] Within these categories the metrics cover risk exposures, controversies and performance. But the metrics only provide a simple flag of negative, neutral, or positive and therefore do not assess the magnitude of any impacts.

Gaining insight from the data above is further complicated by a lack of standardization and transparency across providers. State Street observes that "the lack of standardization and transparency in ESG reporting and scoring presents major challenges for investors... it's important for asset owners and managers to understand the inherent limitations of this data, as well as the challenges of relying on any one provider."[6]

Furthermore, ESG metrics have to date delivered limited, if any, value to investors in terms of assessing financial impacts from ESG initiatives. "Because they were not designed to measure financial value, ESG metrics have proven ill-suited to helping investors discern the financial impact of companies' ESG performance."[7] While the existing data and metrics may provide some useful information in terms of flagging risks and the directions of ESG impacts, they typically do not provide financial information and are difficult to interpret and score.

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[1] 1st: https://www.duffandphelps.com/insights/publications/valuation/measuring-organic-deleveraging-in-created-value-attribution-analysis 2nd: https://www.duffandphelps.com/insights/publications/valuation/measuring-alpha-for-private-equity

3rd: https://www.duffandphelps.com/insights/publications/valuation/whitepaper-series-value-preservation-age-of-covid-19

[2] "ESG Goes Mainstream in Private Capital," Prequin Ltd., August 2020.

[3] See "The ESG Data Challenge," State Street Global Advisors, March 2019.

[4] State Street, op cit.

[5] "MSCI ESG Metrics," MSCI.COM

Measuring ESG value creation

As we seek to measure ESG value creation, it is important for us to first define such.

We assess and attribute created value in the realm of private equity through the lens of the change in enterprise value of the portfolio company (which in our view is the first step in assessing whether value has been created through 'building better businesses'). In the context of ESG, an initiative can increase the enterprise value of the portfolio company by increasing revenue and/or EBITDA, reducing risk, and so forth, and reduce the enterprise value through higher operating costs. Ultimately the balance sheet impacts of ESG driven capital expenditures must also be reflected, whether financed by cash, debt or equity.

In this light, we are aware of two recent papers that endeavor to bridge ESG data metrics and value creation.

The first is a 2017 paper in the *Journal of Environmental Investing*.[8] Glassman et al. propose an investor-oriented conceptual framework and methodology for producing company-specific ESG value creation metrics. The framework is cash flow oriented and consists of three steps:

1. The development of an ESG strategy that identifies value creating opportunities, upside potential, and downside risks across the entirety of the company's operations and industry value change;
2. The identification of the mechanisms by which each initiative drives cash flow; and
3. Selection of operational ESG value creation metrics that can convey the impact of the ESG strategy on financial performance and health.

For example, a strategy to reduce employee turnover via ESG-focused measures may aim to reduce costs and improve margins, but such marginal improvement may be difficult to measure. And so instead the company will focus on metrics such as the comparison of ESG-engaged turnover rates with averages, and levels of workforce pride, and job satisfaction as measured by employee surveys.

While this framework is a logical approach where cash flow impacts cannot be measured directly, by relying on indirect measures it ultimately can only provide indirect indications of value creation rather than a direct measure.

The second paper is a recent article in the *McKinsey Quarterly*, which moves substantially closer to what we believe is the right approach. Henisz et al[9] posit that ESG links to cash flow in five important ways:

1. Facilitating top-line growth
2. Reducing costs
3. Minimizing regulatory and legal interventions
4. Increasing employee productivity
5. Optimizing investment and capital expenditures

We agree that these factors capture much of the main routes for ESG initiatives to influence cash flows. However, we would propose to refine this list as follows:

a. We agree that improved governance can improve investment and capital expenditure decisions (point (5)), although this is likely to be extremely difficult to measure as we typically do not know what decisions or strategy would have been pursued in the absence of the improved governance. We would instead propose that such governance impacts can be better measured by the impact on the multiple of the firm (typically Total Enterprise Value/ EBITDA), which in turn can be broken into two key areas – future growth expectations (which we refer to as "growth profile") and impacts on risk and the cost of capital.[10] (These impacts on the multiple are explained further in the following section)

b. We would prefer to simplify the list to note that the impacts of points (3) and (4) should ultimately be observable either in revenue growth and cost or margin impacts identified as points (1) and (2) or through impacts on the multiple through growth profile and risk/ cost of capital (see (a) above).

c. The operating costs and capital expenditures of the ESG initiative must also be included.

Thus, we would recharacterize the five key ESG value creation drivers as follows:

- Revenue enhancement
- Cost savings/margin improvement
- Growth profile enhancement
- Risk reduction
- Costs of the ESG initiatives

Quantifying ESG-Driven Value Creation Through the Kroll CVA Framework

The traditional framework (often called the 'Value Bridge') for private equity value attribution relies on three factors: 1) Change in EBITDA, 2) Change in the Multiple

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[6] State Street, op cit.

[7] Glassman, Diana; Matthew Potoski, and Patrick Callery, "Missing Metrics that Matter to Investors: *How Companies Can Develop ESG Financial Value Creation Metrics,"* ***Journal of Environmental Investing*** *8, no 1, 2017.*

[8] *Glassman et al.*

[9] *Henisz, Witold; Tim Koller, and Robin Nuttall, "Five Ways that ESG Creates Value,"* ***McKinsey Quarterly,*** *November 2019.*

[10] Henisz et al do discuss ESG impacts on risk and reference several papers on this topic but they do not include risk in their five links to value creation.

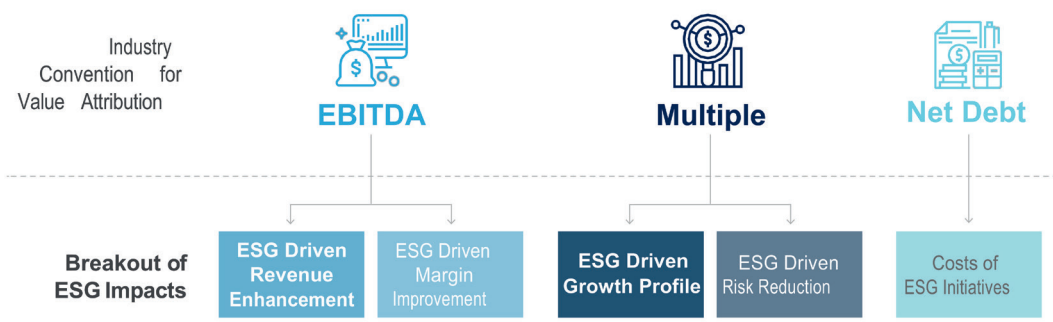
(of TEV to EBITDA), and 3) Change in Net Debt. The Kroll CVA Framework first goes beyond the basic Value Bridge to separate revenue and margin impacts, and macro cost of capital impacts from expected growth. The Framework then integrates benchmarking and the isolation of add-on acquisitions, and ultimately segregates performance into four sources: industry/sector, capital markets/Beta, deleveraging and Alpha.

The Kroll CVA Framework, in our view, represents the leading candidate for an industry standard for robust created value attribution analysis and the more meaningful measurement of Alpha for private equity investments. As such, the methodology behind the Framework has been made fully transparent and detailed in our whitepaper on the Framework.[11] It is also fully described in the Insead GPEI study entitled "Value Creation 2.0,"[12] and is highlighted in a recent video on private equity value creation by Steven Balaban of the University of Waterloo and the University of Toronto.[13]

It is a logical and straightforward step to utilize the Framework to measure value creation from ESG initiatives. The net impact on created value is simply the sum of the ESG value creation drivers discussed above.[14]

We show schematically below how this analytical Framework builds on the Value Bridge:

Figure 1: Building on the Value Bridge to Measure ESG Value Creation



As described earlier, the value drivers from an ESG initiative should fall into the categories depicted above, and if this can be measured the resulting impact on value is straightforward.

As an illustrative example, let's suppose a car rental business changes its entire fleet of 100,000 vehicles from non-hybrid to hybrid. Prior to the change, the company had LTM revenue of $1 billion, EBITDA of $100 million, no debt and an estimated fair value of equity of $1 billion. They found that the change increased annual revenue (beyond industry growth) by 4% due to customer preferences for greener cars and higher rental rates, with half of the increase from higher market share and half from higher pricing. While the cars are more efficient, the reduced fuel costs went primarily to customers, but margins did increase by 200 bps due to the higher pricing they were able to command.

And they estimated, based on the valuation multiples for green rental businesses vs traditional rental companies, that their valuation multiple increased by 0.5x reflecting an increase in growth profile resulting from the initiative. No changes were expected or observed for the risk of the business, but the change did entail a capital cost of $2,000 per vehicle. And while car resale costs did increase, this was essentially offset by higher replacement costs for future hybrid purchases, and so the capital cost appeared to be a one-time expenditure.

So, what is the full value impact of this ESG initiative?

Revenue Enhancement	**$40 million ($40 m annual revenue impact times current 1.0x revenue multiple)**
Margin Improvement	**$208 million (change in EBITDA of $20.8 m {based on $1,040 m revenue x 200 bps margin increase} times original EBITDA multiple of 10.0x)**
Growth Profile	**$62.4 million (post initiative EBITDA of $124.8 m times 0.5 x increase in EBITDA multiple)**
Costs of Initiative	**$-200 million (100k cars times $2,000 per car)**
Total ESG Initiative Value Creation	**$110.4 million**

While our example is relatively simple, it illustrates the multiple components of ESG value creation. And note that if we leave out any of these components, the interpretation

[11] Created Valuate Attribution: Assessing How Value is Created in Private Equity Investments, http://www.duffandphelps.com/expertise/publications/pages/NewslettersDetail.aspx?list=Newsletters&ItemID=154

[12] "Value Creation 2.0: A Framework for Measuring Value Creation in Private Equity Investment," INSEAD Global Private Equity Initiative, February 2016.

[13] Value Creation

[14] This should be done on a present value basis but as a start we can simply look at the sum of the associated cash flows.

of the value impact of this initiative would be very different.

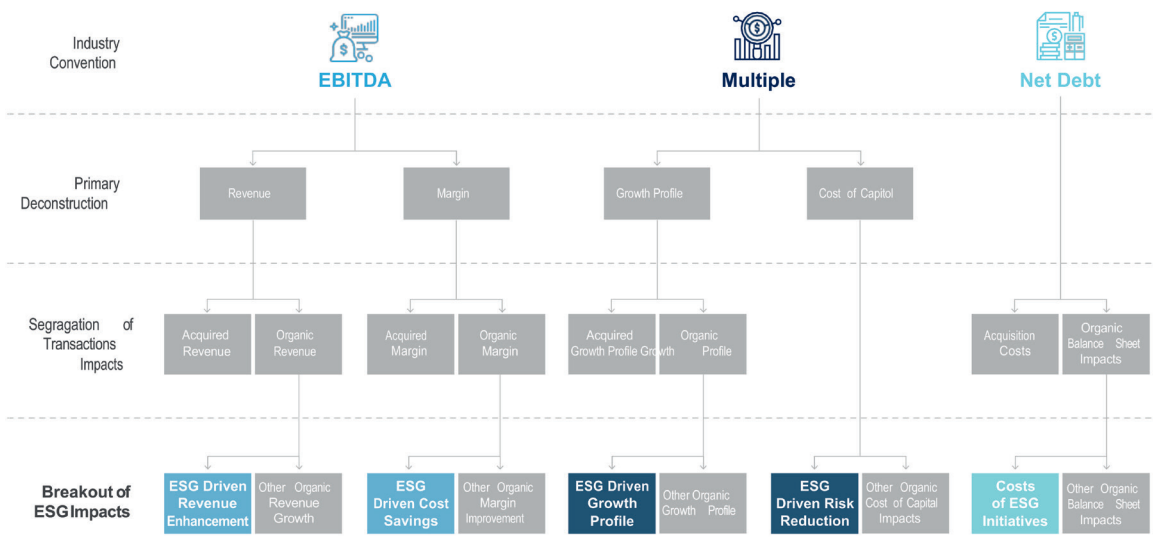
Integration of ESG Value Creation with the Kroll CVA Framework

This ESG value creation analysis can then be integrated with a comprehensive CVA analysis to identify both ESG value creation and other organic value creation.

As depicted below, the Kroll CVA Framework analysis begins with the Value Bridge and then separates revenue and margin impacts and macro cost of capital impacts from growth profile impacts (on a risk adjusted basis). The CVA Framework then adjusts for the purely transactional impacts relating to add-on acquisitions, which then isolates the organic impacts of revenue, margin, growth profile and changes in balance sheet components. And after separating the ESG value drivers identified above, the Kroll CVA Framework identifies the breakout between components of ESG value creation and other organic value creation.[15]

Thus, we can build on the Value Bridge to directly measure ESG value creation, and with the incorporation of the full CVA Framework, we can provide this identification of ESG value creation within the context of other organic value creation. Ultimately, we can identify both ESG value creation and other organic value creation or Alpha, and therefore add new meaning and detail to the assessment of GP value add.

Figure 2: Incorporating ESG Value Creation into the Kroll CVA Framework



Conclusion

ESG has become a large and growing focus for investors, but it remains very difficult to measure ESG success, especially in terms of value creation. There are many ESG metrics provided by a number of well-known data providers, but these metrics suffer from both a lack of standardization as well as transparency. And from a more fundamental investor's perspective, they do not measure or identify value creation.

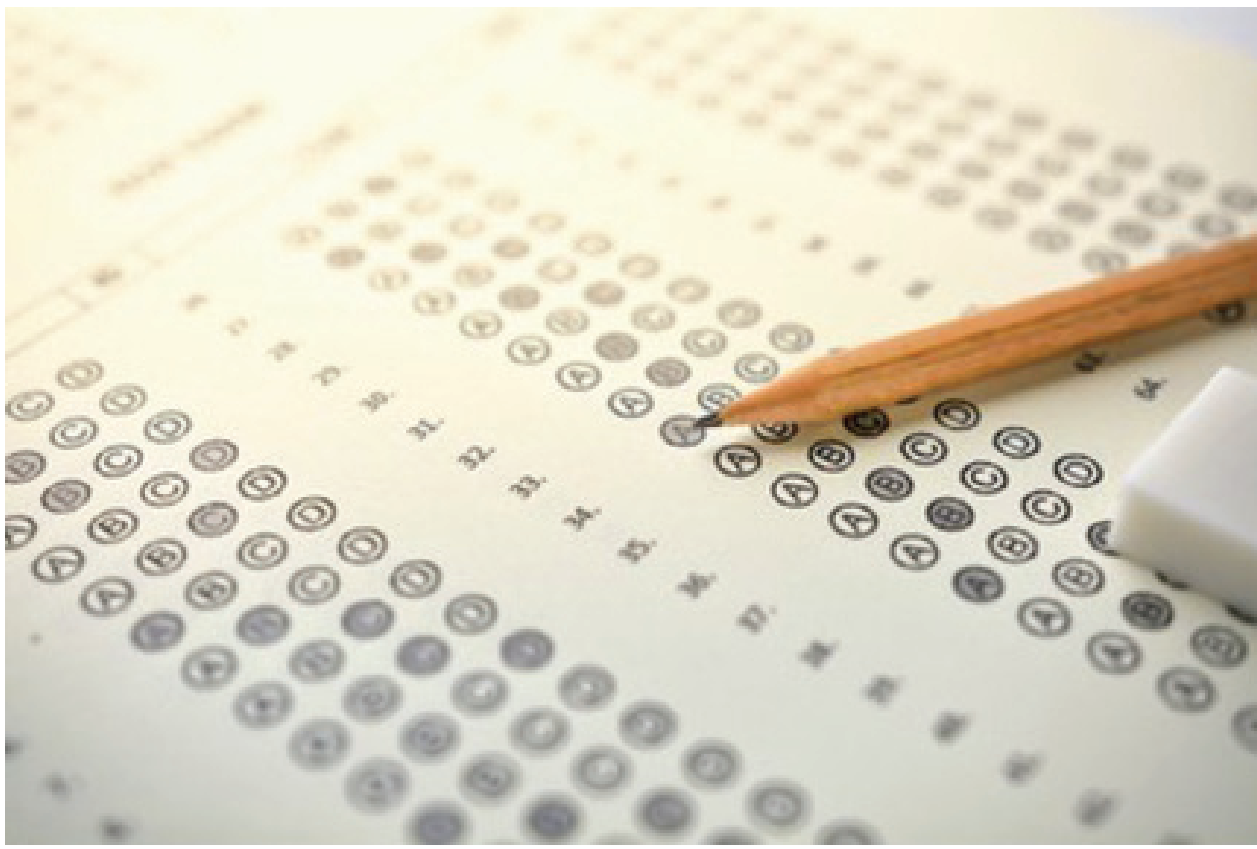
To truly measure ESG value creation, it is necessary to quantify the financial impacts of ESG efforts in terms of current and future revenue growth, margin improvement, risk and the cost of capital. And then these financial impacts should be integrated with the cost of the efforts.

The Kroll CVA Framework provides unique insight into value creation due to its granular analysis of value drivers, and it is easily enhanced to integrate ESG financial impacts and measure ESG value creation. Moreover, it does not rely upon forecasted financial information for ESG initiatives nor estimates of required rates of return. Additionally, it is built upon the traditional Value Bridge with which the limited partner community is familiar.

To truly Measure ESG value creation, it is necessary to quantify the financial iMpacts of ESG efforts in terMS of current and future revenue growth, Margin iMProveMent, risk and the cost of capital.

[15] Note that we do not include benchmarking of industry/sector impacts here as we do not believe it is currently feasible to estimate industry/sector ESG valuecreation.

MULTIPLE CHOICE QUESTIONS



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MULTIPLE CHOICE QUESTIONS

MCQ for SFA

1.If we include it, national income will be over-estimated:
a)Transfer payment
b)Income from abroad
c)Illegal income
d)Exports

Ans) Transfer payment

2.It is NOT a method to measure national income:
a)Adding all expenditure
b)Adding all incomes
c)Adding value of goodsand services
d)Adding all taxes

Ans) Adding all taxes

3.Which statement is true?
a)National Expenditure= National income + National production
b)National Expenditure = National income
c)National Expenditure =National income + National Taxes
d)National Expenditure = National income - Taxes

Ans) National Expenditure= National income

4.The term "capital structure" refers to mix of
a)long-term debt,preferred stock, and common stock equity
b)current assets and current liabilities.
c)total assets minusliabilities.
d)shareholders' equity.

Ans) long-term debt, preferred stock, and common stock equity

5.Which of the following term is used to represent the proportionate relationship between debt and equity?
a)Cost of capital
b)Capital Budgeting
c)Assets Structure
d)Capital structure

Ans) Capital structure

6.If compounding is done quarterly in year, the effective rate of interestis equal to
a)4 x nominal rate of interest
b)(1 + nominal rate of interest / 4)4
c)(1 + nominal rate of interest)/ 4
d)nominal rate of interest)/ 4

Ans) (1 + nominal rate of interest / 4)4

7.Which of the following statement(s) regarding IRR is true?
a)If IRR is less than the firm's cost of capital, the project should be rejected.
b)A project can have multiple IRRs depending on the cash flow streams.
c)A project can have only one IRR.
d)Both (A and (B)

Ans) Both (A)and (B)

8.In which case will an investor receive the most interest:
a)10%, compounded annually.
b)10%, compounded monthly.
c)10%, compounded quarterly
d). 10%,compounded daily

Ans). 10%,compounded daily

9.This type of risk is avoidable through proper diversification.
a)portfolio risk
b)systematic risk
c)unsystematic risk
d)total risk

Ans) unsystematic risk

10.Finance is defined as the management of money and includes activities like:
a)Investing
b)Borrowing
c)Lending
d)All of the above

Ans) All of the above

11.A balance sheet is a form of:
a)Activity reports
b)Static financial reports
c)Dynamic financial reports
d)None of the above

Ans) Static financial reports

12.Projected financial statement may not include:
a)Income Statement
b)Trial Balance
c)Balance Sheet
d)Cash Flow Statement

Ans) Trial Balance

13.Information about a company's objectives, strategies, and significant risks would most likely be found in the:
a)Auditor's Report
b)Management commentary
c)Notes to the financial statements
d)None of the above

Ans) Management commentary

14. Rent free accommodation is an example for .....
a) Allowance
b) Compensation
c)Perquisite
d)Profit in lieu of salary

Ans) Perquisite

15.The TDS Certificate issued by an employer to his employees in case of salary income is
a)Form 16
b)Form 26
c)Form 26A
d)Form 26Q

Ans) Form 16

16.The apex body of Income Tax Department is
a)Finance Ministry ofCentral Govt.
b)Central Govt. of India.
c)CBDT
d)Dept. of Revenue

Ans) CBDT

17.If both parents are earning then income of a minor child will be clubbed with
a)Income of parent having higher income
b)Proportionately withboth parent's income
c)Income of parent having lower income
d)Income of either parent

Ans) Income of parent having higher income

18.Salary Under Section 17(1) does not includes
a)Wages
b)Pension
c)Interest
d)Gratuity

Ans) Interest

19.Long Term Capital Assets (Shares) is held for

MULTIPLE CHOICE QUESTIONS

a)More than 36 months
b)More than 12 months
c)More than 24 months
d)Not more than 36 months

Ans) More than 12 months

20.Interest on Public Provident Fund Investment is _____
a)Taxable under the Head : Income from Other Sources
b)Taxable under the Head : Income from Other Sources
c)Allowed as Deduction
d)Exempt from Income

Ans) Exempt from Income

21.What is MAT?
a)Maximum Alternate Tax
b)Maximum Advance Tax
c). Minimum Advance Tax
d)Minimum Alternate Tax

Ans) Minimum Alternate Tax

22.Directors Sitting Fees will be Chargeable Under which Head?
a)Income From House Property
b)Income From Business & Profession
c)Income From Capital Gain
d)Income From Other Sources

Ans) Income From Other Sources

23.Loss under the head income from house property can be carried forward
a)Only if the return isfurnished before the due date mentioned u/s 139(1)
b)Even if the returnis not furnished
c)Even if the return is furnished after the due date
d)not furnished the return of loss

Ans) Even if the return is furnished after the due date

24.Loss from a speculation Business of a particular A. Yr. can be set off in the same A.Yr. from:
a)Profit And gains from any business
b)Profit and gains from any business other than speculation business
c)Income of speculation business
d) Income of any head

Ans) Income of speculation business

25.Which of the following could give rise to a capital gain (or allowable loss)
a)A gift of an asset to a charity
b)A transfer of an asset between a husband and wife who live together during the tax year in which the transfer occurs
c)A disposal caused by the death of the taxpayer
d)The receipt of compensation on the destruction of an asset

Ans) The receipt of compensation on the destruction of an asset

26.The income from sale of household furniture is:
a)taxable income
b)exempted income
c)capital gain
d)revenue gain

Ans) exempted income

27.The exemption under section 54 ,shall be available
a)To the extent of capital gaininvested in the HP
b)Proportionate to the net consideration price invested
c)To the extent of amount actually invested
d)To the extent of net consideration

Ans) To the extent of capital gain invested in the HP

28.Under which concept it is assumed that the enterprises has neither the intention nor the necessity of liquidation or of curtailing materiality the scale of operation_
a)Revenue realization concept
b)Matching cost concept
c)Going concern concept
d)Realization concept

Ans) Going concern concept

29. Fixed assets and current assets are categorized as per concept of:
a)Separate entity
b)Going concern
c)Consistency
d)Time period

Ans) Time period

30.A firm is expected not to curtail its present scale and continue to operate at least at the existing level under, which of the following:
a)Accounting Period
b)Money Measuring Entity
c)Going Concern Entity
d)Accounting Entity

Ans) Going Concern Entity

31.Distinction between an expenditure whose benefit will be for a long period and whose benefit for a short period of say up to one year, is made under which of the following.
a)Accounting Entity
b)Going concern Entity
c)Money Measuring Entity
d)Accounting Period

Ans) Going concern Entity

32.Which of the following defines the term 'fair value'?
a)The price at which an orderly transaction to sell an asset or to transfer a liability would take place between market participants at the reporting date under current market conditions
b)The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date
c)The weighted average price at which orderly transactions to sell assets or to transfer liabilities are taking place between market participants at the reporting date in the relevant market
d)The entry price at the measurement date from the perspective of a market participant that holds the asset or owes the liability

Ans) a

33.The definition of fair value focuses on _____ because they are a primary subject of accounting measurement.
a)Assets and liabilities
b)Rights and obligations
c)Observable and unobservable inputs
d)Entry price and exit price

Ans) a

34.On which of the following Ind AS113 does not apply?
a)Ind AS 102 (Share-based Payments)
b)Ind AS 36(Impairment of Assets)
c)Ind AS 2 (Inventories)
d)All of the above

Ans) d

35.In order to perform a fair value measurement, an entity needs to undertake an in-depth search of all possible markets to identify the principal market or, in the absence of a principal market, the most advantageous market.
a)TRUE

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b)FALSE
c)May be True or False
d)None of the above

Ans) b

36.What is the definition of the most advantageous market in Ind AS 113?
a)The one with the highest value activity for the asset or liability that can be accessed by the entity
b)The one maximises the amount that would be received for the asset or paid to extinguish the liability after transport and transaction costs
c)The one with the greatest volume and level of activity for the asset or liability that can be accessed by the entity
d)The one with the highest and best price for the asset or liability that can be accessed by the entity

Ans) b

37.In measuring value, which of the following 'approach', would you use?
a)Cost & Income
b)Cost & Market
c)Market & Income
d)Cost ,Market & Income

Ans) Cost ,Market & Income

38.Which of the following date is appropriate relating to valuation?
a)The date the report is signed
b)The date the analysis if finished
c)The effective date of the valuation
d)The date the report is sent to the client
Ans) c) The effective date of the valuation

39.Which of the following method is included in Income based approach?
a)Underlying Asset Method
b)Realizable Value Method
c)Market Price Method
d)Discounted Cash Flow Method

Ans) d) Discounted Cash Flow Method

40.Which of the following is a suitable method for valuation of knowledge based companies?
a)Knowledge
b)Earnings
c)Market
d)Market & Earning

Ans) Market & Earning

41.Which of the following is not one of the three fundamental methods of firm valuation?
a)Discounted cash flow.
b)Income or earnings - where the firm is valued on some multiple ofaccounting income or earnings.
c)Balance sheet - where the firm is valued in terms of its assets.
d)Market share.

Ans) Market share.

42.Which of the following represents the correct formula for valuing a share with a growing dividend?
a)Pt = d0 × (1 - g)/(r - g)
b)Pt = d0 × (1 + g)/(r + g)
c)Pt = d0 × (1 + g)/(r - g)
d)Pt = d1 × (1 + g)/(r - g)

Ans) Pt = d0 × (1 + g)/(r - g)

43.What is the value of the firm usually based on?
a)The value of debt and equity.
b)The value of equity.
c)The value of debt.
d)The value of assets plus liabilities.

Ans) The value of equity.

44.According to Black Scholes model, stocks with call option pays the_
a)dividends
b)no dividends
c)current price
d)past price

Ans) no dividends

45.According to Black Scholes model, purchaser can borrow fraction of security at risk free interest rate which is_
a)short term
b)long term
c)transaction cost
d)no transaction cost

Ans) short term

46.According to Black Scholes model, rate which is constant and known is classified as_
a)short term return rate
b)long term return rate
c)risk free interest rate
d)risky rate of return

Ans) risk free interest rate

47.In the Black-Scholes Option Pricing Model, what is the minimum and maximum value of N(d 1)?_
a)minus infinity to plus infinity
b)minus infinity to zero
c)minus one to zero
d)zero to plus infinity

Ans) minus infinity to plus infinity

48.In the Black-Scholes Option Pricing Model, if interest rates rise, the price of a call option will_
a)decline.
b)remain unchanged.
c)increase.
d)decline, then increase.

Ans) increase.

49.All of the following are assumptions of the Black-Scholes Option Pricing Model except_
a)markets are efficient
b)no dividends
c)interest rates are constant.
d)investors are generally bullish

Ans) investors are generally bullish

50.The expected volatility of the underlying asset is known as_
a)sigma
b)delta.
c)gamma
d)theta.

Ans) sigma

51.According to Black Scholes model, trading of securities and stock prices moves respectively_
a)constant and randomly
b)randomly and constant
c)randomly and continuously
d)continuously and randomly

Ans) continuously and randomly

52..... refers to an external force that have a beating on the functioning of the business:
a)System
b)Culture
c)Environment
d)Society

Ans) Environment

53.Environment is within the control of the business:
a)Internal
b)External
c)Micro
d)Macro

Ans) Internal

MULTIPLE CHOICE QUESTIONS

54.Which of the following is correct order of process of business environment analysis?
(i). Scanning the environment to detect warning signals
(ii). Forecasting the direction of future environmental change
(iii). Assessment of current and future environme
a)i, ii, iii, iv
b)i, iv, ii, iii
c)ii, i, iv, iii
d)iii, ii, i, iv

Ans) i, iv, ii, iii

55.Macro environment is also called as:
a)General environment
b)Operating environment
c)Economic environment
d)Internal environment

Ans) Economic environment

56.External environment of business is:
a)Physical
b)Demographical
c)Economic
d)All of these

Ans) All of these

57.Which of the strategic tool is most commonly used for analyzing the macro environment?
a)SWOT Analysis
b)PESTLE Analysis
c)Factor Analysis
d)All of the above

Ans) PESTLE Analysis

58.PESTLE stands for:
a)Public, Economic, Social, Technological, Legal, Environmental factors
b)Political, Environmental, Social, Transferable, Legal, Economic factors
c)Political, Economic, Science, Technological, Legal, Environmental factors
d)Political, Economic, Social, Technological, Legal, Environmental factors

Ans) Political, Economic, Social, Technological, Legal, Environmental factors

59.PESTLE Analysis helps:
a)The managers and strategy builders to find where their market currently
b)Foresee where the organization will be in future
c)Both (a) and (b)
d)None of the above

Ans) Both (a) and (b)
60.Micro environment is also called as:
a)General environment
b)Operating environment
c)Economics environment
d)Political environment

Ans) Operating environment

61.Which of the following is benefit of business environment analysis?
a)It helps organization to identify the present and future threats and opportunities
b)Helps to understand the transformation of the industry environment
c)Contributes to identification of risk
d)All of the above

Ans) All of the above

62..... is a statement which derives the role that an organization plays in a society:
a)Goals
b)Mission
c)Objective
d)Success

Ans) Mission

63.Michael Porter's five forces model includes:
a)New entrants
b)Suppliers
c)Buyers
d)All of the above

Ans) All of the above

64.PEST stands for:
a)Public, Economic, Social, and Technological factors
b)Political, environmental, social and technological factors
c)Political, economic, science and technological factors
d)Political, economic, social and technological factors

Ans) Political, economic, social and technological factors

65..... is a set of activities that a firm operating in a specific industry performs in order to deliver a valuable product or service for the market:
a)Value chain
b)Swot
c)Pest
d)None of the above

Ans) Value chain

66.Secondary or support activities include:
a)Firm Infrastructure
b)Human Resource Management
c)Technology
d)All of the above

Ans) All of the above

67.Introducing new product or adding new features to existing products, is an example of ..... strategy in an entity:
a)Product differentiation
b)Globalization
c)Growth
d)Retrenchment or sticking to major expertise of the entity

Ans) Growth

68..... strategy of an entity attracts quick competition:
a)Price skimming
b)Globalization
c)Retrenchment or sticking to major expertise of the entity
d)Product differentiation

Ans) Product differentiation

69.A business consists of inputs and processes applied to those inputs that have the ability to create:
a)Goodwill
b)Value
c)Outputs
d)None

Ans) Outputs
70..... refers to a situation when two or more existing firms combine together and form a new entity:
a)Acquisition
b)Restructure
c)Demerger
d)Merger

Ans) Merger

71.When the profit-making company is merged with companies having accumulated losses is called:
a)Horizontal merger
b)Vertical merger
c)Reverse merger
d)Conglomerate merger

Ans) Reverse merger

MULTIPLE CHOICE QUESTIONS

72.When the firms engaged in unrelated type of business operations merged with each other is called:
a)Horizontal merger
b)Vertical merger
c)Reverse merger
d)Conglomerate merger

Ans) Conglomerate merger

73.The share exchange ratio in case of acquisition can be obtained by which of the following formulas:
a)EPS of target firm/EPS of acquiring firm
b)MP of target firm's share/MP of acquiring firm
c)BV of share of target firm/BV of share of acquiring firm
d)Any of the above

Ans) Any of the above

74.Sun Ltd and Surya Ltd go to liquidation a new company ABC Ltd is formed. It is a case of:
a)Amalgamation
b)Acquisition
c)Internal reconstruction
d)External reconstruction

Ans) Amalgamation

75.Which of the Indian Accounting Standard (IND AS) deal with business combination:
a)IND AS 202
b)IND AS 103
c)IND AS 109
d)IND AS 117
Ans) IND AS 103

76.Who shall identify the acquisition date:
a)The acquiree
b)The acquirer
c)The valuer
d)The proposer

Ans) The acquirer
77.Which of the following are commonly cited reasons for M&A?
a)Synergy
b)Market Power
c)Strategic realignment
d)All of the above

Ans) All of the above

78.Vertical mergers are those in which the participants are:
a)In the same industry
b)In different industries
c)In different phases of the value chain
d)None of the above

Ans) In different phases of the value chain

79.In the matter of Hindustan Lever Employee's Union (Supra) (1995) Supp (1) SCC 499, the Supreme Court dealt with the following issue of:
a)What method should be adopted for arriving at a proper exchange ratio
b)Discussed the problem of valuation in the case of amalgamation of two companies
c)Both (a) and (b)
d)None of the above

Ans) Both (a) and (b)

80.In the matter of Hindustan Lever Employee's Union (Supra) (1995) Supp (1) SCC 499, the Supreme Court mentioned that how many factors will have to be taken into account in determining the final share exchange ratio:
a)5
b)4
c)8
d)7

Ans) 8

The following information relates to Questions 81-84

Satish is an equity analyst with a regional investment bank. Satish reviews the growth prospects and quality of earnings for Phoenix Enterprises, one of the companies he follows. He has developed a stock valuation model for this firm based on its forecasted fundamentals. His revenue growth rate estimate is less than that implied by the market price. Phoenix's financial statements over the past five years show strong performance, with above average growth. Satish has decided to use a lower forecasted growth rate in his models, reflecting the effect of "regression to the mean" over time. He notes two reasons for his lower growth rate forecast:

Reason 1- Successful companies tend to draw more competition, putting their high profits under pressure.

Reason 2- Phoenix's intellectual property and franchise agreements will be weakening over time.

Satish meets with Harish, a newly hired associate in his department. In their conversation, Harish states, "Security analysts forecast company performance using both top- down and bottom- up analysis.

I can think of three examples:

1. A restaurant chain forecasts its sales to be its market share times forecast industry sales.
2. An electric utility company forecasts that its sales will grow proportional to increases in GDP.
3. A retail furniture company forecasts next year's sales by assuming that the sales in its newly built stores will have similar sales per square meter to that of its existing stores."

Harish is reviewing some possible trades for three stocks in the health care industry based on a pairs- trading strategy. Harish's evaluations are as follows:

- HG Health is 15% overvalued.
- Corgent Cell Sciences is 10% overvalued.
- Johnson Labs is 15% undervalued.

81.Based on Satish's revenue growth rate estimate, the shares of Phoenix are most likely:
a) undervalued.
b) fairly valued.
c) overvalued.
d) need more information to answer
Ans) overvalued.

82.Which of the reasons given by Satish most likely justifies a reduction in Phoenix's forecasted growth rate?
a) Reason 1 only
b) Reason 2 only
c)Both Reason 1 and Reason 2
d)need more information to answer

Ans) Both Reason 1 and Reason 2

83.Which of Harish's examples of company performance forecasting best describes an example of bottom- up forecasting?
a) Restaurant chain
b) Electric utility company
c) Retail furniture company
d) none of the above

Ans) Retail furniture company

84.Based on his trading strategy, which of the following should Harish

MULTIPLE CHOICE QUESTIONS

recommend?
a) Short HG Health and Corgent Cell Sciences
b) Buy Johnson Labs and Corgent Cell Sciences
c)Buy Johnson Labs and short Corgent Cell Sciences
d)none of the above

Ans) Buy Johnson Labs and short Corgent Cell Sciences

The following information relates to Questions 85-87

Manish, is analyzing the financials of Royal Enterprises. He intends to use a free cash flow to the firm (FCFF) model to value Roth's common stock. In the 2016 financial statements and footnotes he has identified the following items:

- Item #1: Royal reported depreciation and software amortization of $23 million in 2016.
- Item #2: The deferred tax liability increased by $17 million in 2016. Item #3: Royal reported income of $6 million in 2016 from the reversal of previous
- restructuring charges related to store closings in 2015.
- Item #4: Net income totaled $173 million in 2016.
- Item #5: The net increase in noncash net working capital accounts was $47 million in 2016.
- Item #6: Net capital spending totaled $86 million in 2016.
- Item #7: Royal reported interest expense of $19 million.

Manish estimated Royal's marginal tax rate to be 35%. He also expects Royal to be profitable for the foreseeable future, so he does not expect the deferred tax liability to reverse. As the base-year projection for his FCFF valuation, Manish calculates FCFF for 2016 as:

FCFF2016 = $173 + $23 + $6 + $17 + [$19(1 − 0.35)] − $86 − $47 = $98.35 million

85.In implementing the FCFF model to value Royal, did Manish correctly treat Items #1 and #2?
a) Both items were treated correctly.
b) One item was treated correctly and the other incorrectly.
c) Neither item was treated correctly.
d)none of the above

Ans) Both items were treated correctly.

86.In implementing the FCFF model to value Royl, did Manish correctly treat Items #3 and #4?
a) Both items were treated correctly.
b) One item was treated correctly and the other incorrectly.
c)Neither item was treated correctly.
d)none of the above
Ans) One item was treated correctly and the other incorrectly.

87.In implementing the FCFF model to value Royal, did Manish correctly treat Items #5 and #7?
a) Both items were treated correctly.
B)One item was treated correctly and the other incorrectly.
c)Neither item was treated correctly.
d)none of the above

Ans) Both items were treated correctly.

The following information relates to Questions 88-90

The Sanford Software Ltd. earned $20 million before interest and taxes on revenues of $60 million last year. Investment in fixed capital was $12 million, and depreciation was $8 million.

Working capital investment was $3 million. Sanford expects earnings before interest and taxes (EBIT), investment in fixed and working capital, depreciation, and sales to grow at 12% per year for the next five years. After five years, the growth in sales, EBIT, and working capital investment will decline to a stable 4% per year, and investments in fixed capital and depreciation will offset each other. Sanford's tax rate is 40%. Suppose that the weighted average cost of capital (WACC) is 11% during the high growth stage and 8% during the stable stage. The calculation of FCFF in years 1 through 5 is shown in the following table:

Year	0	1	2	3	4	5
Sales	60.00	67.20	75.26	84.30	94.41	105.74
EBIT	20.00	22.40	25.09	28.10	31.47	35.25
EBIT (1 − T)	12.00	13.44	15.05	16.86	18.88	21.15
Dep	8.00	8.96	10.04	11.24	12.59	14.10
FCInv	12.00	13.44	15.05	16.86	18.88	21.15
WCInv	3.00	3.36	3.76	4.21	4.72	5.29
FCFF	5.00	5.60	6.28	7.03	7.87	8.81

88.Free cash flow to the firm (FCFF) in Year 6 is closest to:
a) $14.14.
b) $16.49.
c)$18.26.
d)none of the above

Ans) $16.49.

89.The terminal value in Year 5 is closest to:
a)$206.12.
b)$220.25.
c)$412.25.
d)none of the above

Ans) $412.25.

90.The value of the firm using a FCFF model is closest to:
a)$149.04.
b)$265.17.
c)$270.35
d)none of the above

Ans) $270.35

Case 6 R Sharma

R Sharma is analyzing four stocks in the processed food industry as of 31 December 2017.

United Corporation

Sharma estimates a required rate of return for United Corporation of 8% and notes that the FCFF for 2017 was RS 2315 per share. His first valuation approach is a basic two-stage discounted Cash Flow model (DCF), with Cash flows growing at a rate of 5% from 2018 through 2021, after which time dividends will grow at a sustainable rate of 3%. His second valuation approach is the H-model, assuming that Cash Flows growth of 5% in 2018 declines linearly during the years 2019 through 2021 to the 3% growth rate after 2021. His growth assumptions are summarized in Exhibit 1.

Model	Time Period	Rate
Two-stage DCF	2018 through 2021	5%
	Beginning 2022	3%
Exhibit 1		
Model	Time Period	Rate
H-model	2018	5%
	2019 through 2021	Declining linearly to 3.5% 3%
	Beginning 2022	

Verna Company

Sharma has assembled the data on Verna Company in Exhibit 2. After analyzing competitive pressures and financial conditions in the industry, he predicts that Verna Company will lose market share because of new entrants, but will stabilize within a few years. The required rate of return for Verna Company is 8%. Beginning with a per share FCFF of RS 3.15 in 2017, she develops two scenarios regarding the growth of FCFF of Verna Company. The scenarios are in Exhibit 2 and are summarized as follows:

- In Scenario 1, the growth rate will fall in a linear manner over the years 2018 through 2021 from 8% to 4%. Using the H-model, he calculates a value of Rs 58.79 per share of Verna Company stock.
- In Scenario 2, the growth rate falls from 8% in 2017 to 6% in 2018 and 2019, to 5% in 2020 and 2021, and then to a sustainable rate of 3% for 2022 and beyond.

Scenarios	Time Period	Rate
Scenario 1	2018 through 2021	Declining linearly to 4%
	Beginning 2022	Remaining stable at 4%
Scenario 2	2018 and 2019	6%
	2020 and 2021	5%
	Beginning 2022	Remaining stable at 3%

Reliance Corporation

Sharma evaluates Reliance Corporation and uses recent financial data from Exhibit 3 to calculate a sustainable growth based on the DuPont model. In addition to this estimate, she performs a sensitivity analysis on the sustainable growth rate whereby the dividend payout ranges from 0% to 10% and the return on equity ranges from 8% to 12%.

Net income	43,923
Sales	423,474
Total assets, average during year	486,203
Shareholders' equity, beginning of year	397,925
Dividends paid	1,518

1 Based on Exhibit 1, when Sharma applies the first valuation approach to United Corporation, the estimated value of the stock at the end of the first stage represents the:

A present value of the Cash flows beyond year 2021.

B present value of the Cash Flows for years 2018 through 2021.

C sum of the present value of the Cash flows for 2018 through 2021 and the present value of Cash Flows beyond year 2021.

2 Using his first valuation approach and Exhibit 1, Sharma's forecast of the per share stock value of United Corporation at the end of 2017 should be closest to:

A RS 48888.

B RS 50976.

C RS 51976.

3 Using Sharma's assumptions for the H-model and the basic two-stage dividend discount model, the forecasted United stock price at the end of the year 2021 for the H-model should be:

A lower than the basic two-stage model.

B the same as the basic two-stage model.

C higher than the basic two-stage model.

4 Under his Scenario 1 and based on Exhibit 2, the required rate of return that Sharma used for Verna Company stock valuation is closest to:

A 8.0%.

B 9.6%.

C 10.0%.

5 Under Scenario 2 and based on Exhibit 2, Sharma estimates that the value of the Verna Company stock to be closest to:

A RS 69.73.

B RS 71.03.

C RS 72.98.

6 Using the data in Exhibit 3, Sharma can estimate the sustainable growth of the Reliance Corporation as being closest to:

A 10.66%.

B 11.04%.

C 14.05%.

Case R Sharma [Solution]:

1) A is correct because the estimated value of the stock at the end of the first stage of a basic two-stage DCF (terminal value) is the present value of all Cash flows beyond the first stage. The first stage is 2018 through 2021, and the second stage begins in 2022, so the terminal value (that is, the value of the stock at the end of 2021) is the present value of future Cash flows beyond 2021

2) C is correct based on Sharma's assumptions applied to the DCF valuation model.

The stock value as of the end of 2017 equals the present value of all future dividends in 2018 through 2021 plus the present value of the terminal value at the end of 2021. The forecasted stock value equals RS 51976.24:

Year	Dividend	Terminal Value	Dt or Vt	Present Valueof Dt or Vt
2018	2315(1.05) = 2430.75		2430.75	2250.69
2019	2431.75(1.05) =2552.28		2.552.28	2188.175
2020	2552.28(1.05) = 2679.89		2679.89	2127.38
2021	2679.89(1.05) = 2813.88	57966.02	60779.9	45410
2022	2815(1.03) = 2898.3			
Total				51976.24

The terminal value at the end of 2021 is calculated using the dividend in the first year beyond the first stage, divided by the difference between the required rate of return and the growth rate in the second stage.

Terminal value at end of 2021 = 2813.88(1.03)/(0.08 – 0.03) = 57966.02

3)A is correct. During the first stage, the basic two-stage model has higher (i.e., 5%) growth than the H-model, in which growth is declining linearly from 5.0% to 3.5%. Higher growth rates result in higher forecasted Cash Flows and stock prices at the beginning of the sustained growth phase. Because the long-term Cash flow growth rates are the same for both models, the difference in forecasted stock price arises from growth rate differences in the first stage.

Therefore, the Cash Flow at the end of the first stage will be lower for the

H-model than for the basic two-stage DCF, and the terminal value will be lower in the H-model than in the two-stage model. Specifically, the 2021 Cash Flows will be 2734.199 (i.e., 2.315 × 1.05 × 1.045 × 1.04 × 1.035) for the H-model versus 2.813.896 [i.e., 2315 × (1.05)4] for the basic two-stage DCF.

4) C is correct, based on Exhibit 2 and the H-model.

r = FCFF 0/po*[{1+gL} + H{gs – gL}] + gL

Substitute the following:

FCFF 0 = 3.15 gS = 8% gL = 4% H = 4 ÷ 2 = 2

≈ 10%

5) B is correct based on the present value of forecasted dividends. The dividend at the end of 2017, based on case material, is RS 3.15 per share.

Year	FCFF perShare, Prior Year	GrowthRate duringYear	FCFF per Share, Current Year	TerminalValue	*FCFFt* or *Vt*	Present Value of *FCFFt* or *Vt*
2018	3.150	6%	3.339		3.339	3.092
2019	3.339	6%	3.539		3.539	3.034
2020	3.539	5%	3.716		3.716	2.950
2021	3.716	5%	3.902	80.381	84.283	61.951
					Total	71.027

Terminal value at the end of 2021 = 3.902(1.03)/(0.08-0.03) = 80.381

6) A is correct, based on the use of average total assets and beginning-of-year shareholders' equity.

g= (Net income – dividend)/net income*net income / sales* sales/ total assets * total assets / share holder's equity

To calculate sustainable growth

= 96.544% × 10.372% × 87.100% × 122.200%

= 10.658%

Case 7 - Tejas Chandak

Tejas Chandak is preparing a presentation that analyzes the valuation of the common stock of two companies under consideration as additions to his firm's recommended list, Emami Corporation and Holt Corporation. Chandak has prepared preliminary valuations of both companies using a FCFE model and is also preparing a value estimate for Emami using a dividend discount model. Holt's 2007 and 2008 financial statements, contained in Exhibits 1 and 2, are prepared in accordance with IND AS.

Exhibit 1 Holt Corporation Consolidated Balance Sheets (Rs Millions)

		2008		2007
Assets				
Current assets				
Cash and cash equivalents		Rs 372		Rs 315
Accounts receivable		770		711
Inventories		846		780
Total current assets		1,988		1,806
Gross fixed assets	4,275		3,752	
Less: Accumulated depreciation	1,176	3,099	906	2,846
Total assets		Rs 5,087		Rs 4,652
Liabilities and shareholders' equityCurrent liabilities				
Accounts payable		Rs 476		Rs 443
Accrued taxes and expenses		149		114
Notes payable		465		450
Total current liabilities		1,090		1,007
Long-term debt		1,575		1,515
Common stock		525		525
Retained earnings		1,897		1,605
Total liabilities and shareholders' equity		Rs 5,087		Rs 4,652

Exhibit 2 Holt Corporation Consolidated Income Statement for the Year Ended 31 December 2008 (Rs Millions)

Total revenues	Rs 3,323
Cost of goods sold	1,287
Selling, general, and administrative expenses	858
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	1,178
Depreciation expense	270
Operating income	908
Interest expense	195
Pretax income	713
Income tax (at 32 percent)	228
Net income	Rs 485

Chandak presents his valuations of the common stock of Emami and Holt to his supervisor, Zubeen Pandey. Pandey has the following questions and comments:

1"I estimate that Emami's long-term expected dividend payout rate is 20 percent and its return on equity is 10 percent over the long term."

2"Why did you use a FCFE model to value Holt's common stock? Can you use a DDM instead?"

3"How did Holt's FCFE for 2008 compare with its FCFF for the same year? I recommend you use a FCFF model to value

Holt's common stock instead of using a FCFE model because Holt has had a history of leverage changes in the past."

4"In the last three years, about 5 percent of Holt's growth in FCFE has come from decreases in inventory."

Chandak responds to each of Pandey's points as follows:

1"I will use your estimates and calculate Emami's long-term, sustainable dividend growth rate."

2"There are two reasons why I used the FCFE model to value Holt's common stock instead of using a DDM. The first reason is that Holt's dividends have differed significantly from its capacity to pay dividends. The second reason is that Holt is a takeover target and once the company is taken over, the new owners will have discretion over the uses of free cash flow."

3"I will calculate Holt's FCFF for 2008 and estimate the value of Holt's common stock using a FCFF model."

4"Holt is a growing company. In forecasting either Holt's FCFE or FCFF growth rates, I will not consider decreases in inventory to be a long-term source of growth."

1 Which of the following long-term FCFE growth rates is most consistent with the facts and stated policies of Emami?

A 5 percent or lower.

B 2 percent or higher.

C 8 percent or higher.

2 Do the reasons provided by Chandak support his use of the FCFE model to value Holt's common stock instead of using a DDM?

A Yes.

B No, because Holt's dividend situation argues in favor of using the DDM.

C No, because FCFE is not appropriate for investors taking a control perspective.

3 Holt's FCFF (in millions) for 2008 is closest to:

A Rs 308.

B Rs 370.

C Rs 422.

4 Holt's FCFE (in millions) for 2008 is closest to:

A Rs 175.

B Rs 250.

C Rs 364.

5 Chandak's comment about not considering decreases in inventory to be a source of long-term growth in free cash flow for Holt is:

A inconsistent with a forecasting perspective.

B mistaken because decreases in inventory are a use rather than a source of cash.

C consistent with a forecasting perspective because inventory reduction has a limit, particularly for a growing firm.

6 Pandey's recommendation to use a FCFF model to value Holt is:

A logical, given the prospect of Holt changing capital structure.

B not logical because a FCFF model is used only to value the total firm.

C not logical because FCFE represents a more direct approach to free cash flow valuation.

Case 7 – Tejas Chandak [Solution]:

1C is correct. The sustainable growth rate is return on equity (ROE) multiplied by the retention ratio. ROE is 10 percent, and the retention ratio is 1 – Payout ratio, or 1.0 – 0.2 = 0.8. The sustainable growth rate is 0.8 × 10% = 8%. FCFE growth should be at least 8 percent per year in the long term.

2A is correct. Justifications for choosing the FCFE model over the DDM include:

- The company pays dividends but its dividends differ significantly from the company's capacity to pay dividends (the first reason given by Chandak).
- The investor takes a control perspective (the second reason given by Chandak).

3A is correct. FCFF = NI + NCC + Interest expense (1 – Tax rate) – FCInv – WCInv. In this case:

NI = Rs 485 million

NCC = Depreciation expense = Rs 270 million

Interest expense (1 – Tax rate) = 195 (1 – 0.32) = Rs 132.6 million

FCInv = Net purchase of fixed assets = Increase in gross fixed assets

= 4,275 – 3,752 = Rs 523 million

WCInv = Increase in accounts receivable + Increase in inventory – Increase in accounts payable – Increase in accrued liabilities

= (770 – 711) + (846 – 780) – (476 – 443) – (149 – 114)

= Rs 57 million

FCFF = 485 + 270 + 132.6 – 523 – 57 = 307.6, or Rs 308 million

4B is correct. FCFE = NI + NCC – FCInv – WCInv + Net borrowing. In this case:

NI = Rs 485 million

NCC =Depreciation expense = Rs 270 million

FCInv =Net purchase of fixed assets = Increase in gross fixed assets

= 4,275 - 3,752 = Rs 523 million

WCInv = Increase in accounts receivable + Increase in inventory - Increase in accounts payable - Increase in accrued liabilities

= **(770 − 711) + (846 − 780) − (476 − 443) − (149 − 114)**

= **Rs 57 million**

Net borrowing = Increase in notes payable + Increase in long-term debt

= **(465 − 450) + (1,575 − 1,515) = Rs 75 million**

FCFE = 485 + 270 − 523 − 57 + 75 = Rs 250 million

5 C is correct. Inventory cannot be reduced below zero. Furthermore, sales growth tends to increase inventory.

Case 8 Shweta Tiwari

Shweta Tiwari manages a dividend growth strategy for a large asset management firm. Tiwari meets with her investment team to discuss potential investments in three companies: Company A, Company B, and Company C. Statements of cash flow for the three companies are presented in Exhibit 1.

Exhibit 1 Statements of Cash Flow, Most Recent Fiscal Year End (Amounts in Millions)	Company A	Company B	Company C
Cash Flow from Operating Activities			
Net Income	4,844	1,212	15,409
Adjustments			
Depreciation	500	288	3,746
Other non-cash expenses	1,000	—	—
Changes in working capital			
(Increase) Decrease accounts	(452)	(150)	(536)
(Increase) Decrease inventories	—	(200)	(803)
Increase (Decrease) accounts payable	(210)	100	(3)
Increase (Decrease) other current	540	14	350
Net cash from operating activities	6,222	1,264	18,163
Cash Flow from Investing Activities			
(Purchase) Sale of fixed assets	2,379	(1,000)	(3,463)
Net cash from investing activities	2,379	(1,000)	(3,463)
Cash Flow from Financing Activities			
Increase (Decrease) notes payable	25	3000	1,238

Increase (Decrease) long-term debt	(1,500)	(1,000)	(1,379)
Payment of common stock dividends	(1,000)	(237)	(15,000)
Net cash from financing activities	(2,475)	1,763	(15,141)
Net change in cash and cash equivalents	6,126	2,027	(441)
Cash and equivalents at beginning of year	50	100	3,000
Cash and equivalents at end of year	6,176	2,127	2,559
Supplemental Cash Flow Disclosures			
Interest	(353)	(50)	(552)
Income taxes	(1,605)	(648)	(3,787)

Tiwari's team first discusses key characteristics of Company A. The company has a history of paying modest dividends relative to FCFE, has a stable capital structure, and is owned by a controlling investor.

The team also considers the impact of Company A's three non-cash transactions in the most recent year on its FCFE, including the following:

Transaction 1: A Rs 900 million loss on a sale of equipment

Transaction 2: An impairment of intangibles of Rs 400 million

Transaction 3: A Rs 300 million reversal of a previously recorded restructuring charge

In addition, Company A's annual report indicates that the firm expects to incur additional non-cash charges related to restructuring over the next few years.

To value the three companies' shares, one team member suggests valuing the companies' shares using net income as a proxy for FCFE. Another team member proposes forecasting FCFE using a sales-based methodology based on the following equation:

FCFE = NI – (1 – DR)(FCInv – Dep) – (1 – DR)(WCInv)

Tiwari's team ultimately decides to use actual free cash flow to value the three companies' shares. Selected data and assumptions are provided in Exhibit 2.

Exhibit 2 *Supplemental Data and Valuation Assumptions*

	Company A	Company B	Company C
Tax rate	35%	35%	30%
Beta	1.00	0.90	1.10
Before-tax cost of debt	6%	7%	6%
Target debt ratio	50%	30%	40%
Market data:			
	Risk-free rate: 3%		
	Market risk premium: 7%		

The team calculates the intrinsic value of Company B using a two-stage FCFE model. FCFE growth rates for the first four years are estimated at 10%, 9%, 8%, and 7%, respectively, before declining to a constant 6% starting in the fifth year.

To calculate the intrinsic value of Company C's equity, the team uses the FCFF approach assuming a single-stage model where FCFF is expected to grow at 5% indefinitely.

1 Based on Company A's key characteristics, which discounted cash flow model would most likely be used by the investment team to value Company A's shares?

A DDM

B FCFE

C FCFF

2 Which non-cash transaction should be subtracted from net income in arriving at Company A's FCFE?

A Transaction 1

B Transaction 2

C Transaction 3

3 Based on Exhibit 1, Company A's FCFE for the most recent year is closest to:

A Rs 5,318 million.

B Rs 6,126 million.

C Rs 7,126 million.

4 Based on Exhibit 1, using net income as a proxy for Company B's FCFE would result in an intrinsic value that is:

A lower than the intrinsic value if actual FCFE were used.

B equal to the intrinsic value if actual FCFE were used.

C higher than the intrinsic value if actual FCFE were used.

5 Based on Exhibit 1, using the proposed sales-based methodology to forecast FCFE would produce an inaccurate FCFE projection for which company?

A Company A

B Company B

C Company C

6 Based on Exhibits 1 and 2 and the proposed two-stage FCFE model, the intrin- sic value of Company B's equity is closest to:

A Rs 70,602 million.

B Rs 73,588 million.

C Rs 79,596 million.

7 Based on Exhibits 1 and 2 and the proposed single-stage FCFF model, the intrinsic value of Company C's equity is closest to:

A Rs 277,907 million.

B Rs 295,876 million.

C Rs 306,595 million.

Case 8 – Shweta Tiwari [Solution]:

1)B is correct. Company A has a history of paying modest dividends relative to FCFE. An FCFF or FCFE model provides a better estimate of value over a DDM model when dividends paid differ significantly from the company's capacity to pay dividends. Also, Company A has a controlling investor; with control comes discretion over the uses of free cash flow. Therefore, there is the possibility that the controlling shareholder could change the dividend policy. Finally, Company A has a stable capital structure; using FCFE is a more direct and simpler method to value a company's equity than using FCFF when a company's capital structure is stable.

2)C is correct. The applicable non-cash adjustments to net income in arriving at FCFE are as follows

Non cash Item	Adj to NI	Amount (in millions)
Transaction 1: Loss on sale of equipment	Added back	+900
Transaction 2: Impairment of intangibles	Added back	+400
Transaction 3: Reversal of restructuring charge	Subtracted	300

In the case of Transaction 1, a loss reduces net income and thus must be added back in arriving at FCFE. Similarly, an impairment of intangibles (Transaction 2) reduces net income and thus must be added back in arriving at FCFE. Transaction 3 (reversal of a restructuring charge) would increase net income and thus must be subtracted in arriving at FCFE.

3) C is correct. FCFE for Company A for the most recent year is calculated as follows:

Net income	Rs4,844
Plus: Net non-cash charges	1,500
Less: Investment in working capital	122
Plus: Proceeds from sale of fixed capital	2,379
Less: Net borrowing repayment	1,475
FCFE (millions)	Rs 7,126

Net non-cash charges are found by adding depreciation to other non-cash expenses:

Rs 500 million + Rs 1,000 million = Rs 1,500 million.

Investment in working capital is calculated by netting the increase in accounts receivable, the decrease in accounts payable, and the increase in other current liabilities:

–Rs 452 million – Rs 210 million + Rs 540 million = –Rs 122 million (outflow).

Net borrowing repayment is calculated by netting the increase in notes payable and the decrease in long-term debt:

Rs 25 million – Rs 1,500 million = –Rs 1,475 million (outflow).

4)A is correct. FCFE is significantly higher than net income for Company B: Net income = Rs 1,212 million.

FCFE for Company B is calculated as

Net income	Rs 1,212
Plus: Net non-cash charges	288
Less: Investment in WC	236
Less: Investment in fixed assets	1,000
Plus: Net borrowing	2,000
FCFE (millions)	Rs 2,264

Investment in working capital is calculated by adding the increase in accounts receivable, the increase in inventories, the increase in accounts payable, and the increase in other current liabilities: –Rs 150 million – Rs 200 million + Rs 100 million

+ Rs 14 million = –Rs 236 million. Net borrowing is

calculated by adding the increase in notes payable to the decrease in long-term debt: Rs 3,000 million –

Rs 1,000 million = Rs 2,000 million.

Therefore, using net income of Rs 1,212 million as a proxy for FCFE (Rs 2,264 million) for Company B would result in a much lower valuation estimate than if actual FCFE were used.

5)A is correct. In addition to significant non-cash charges other than depreciation in the most recent year, the annual report indicates that Company A expects to recognize additional non-cash charges related to restructuring over the next few years. The given equation for forecasting assumes that the only non-cash charge is depreciation. When the company being analyzed has significant non-cash charges other than depreciation expense, this sales-based methodology will result in a less accurate estimate of FCFE than one obtained by forecasting all the individual components of FCFE

Case 9 Gurmeet Singh

Gurmeet Singh, an equity portfolio manager at a wealth management company, meets with junior research analyst Bhavna Sharma to discuss potential investments in three companies: Seema Limited, Cola Manufacturing, and Bern Pharmaceutical.

Singh and Sharma review key financial data from Sienna's most recent annual report, which are presented in Exhibits 1 and 2, to assess the company's ability to generate free cash flow

Exhibit 1: Selected Data from Seema Limited's Statement of Income for the Year Ended 31 December 2016 (Amounts in Millions)

EBITDA	4,000
Depreciation expense	800
Operating income (EBIT)	3,200
Interest expense	440
Tax rate	35%
Cash flow from operations	
Net income	1,794
Plus: Depreciation	800
Increase in accounts receivable	(2,000)
Increase in inventory	(200)
Increase in accounts payable	1,000
Cash flow from operations Cash flow from investing activities	1,394
Purchases of PP&E Cash flow from financing activities	(1,000)
Borrowing (repayment)	500
Total cash flow	894

Singh and Sharma also discuss the impact of dividends, share repurchases, and leverage on Seema's free cash flow. Sharma tells Singh the following:

Statement 1 Changes in leverage do not impact free cash flow.

Statement 2 Transactions between the company and its shareholders, such as the payment of dividends or share repurchases, do affect free cash flow.

Singh and Sharma next analyze Cola. Last year, Cola had FCFF of Rs 140 million. Singh instructs Sharma to perform a FCFF sensitivity analysis of Cola's firm value using the three sets of estimates presented in Exhibit 3. In her analysis, Sharma assumes a tax rate of 35% and a stable capital structure of 30% debt and 70% equity.

Exhibit 3: Sensitivity Analysis for Cola Valuation

Variable	Estimate	Low Estimate	High Estimate
FCFF growth rate	4.6%	4.2%	5.0%
Before-tax cost of debt	4.9%	3.9%	5.9%
Cost of equity	11.0%	10.0%	12.0%

Finally, Singh and Sharma analyze Bern. Selected financial information on Bern is presented in Exhibit 4.

Exhibit 4: Selected Financial Data on Bern Pharmaceutical

	Market Value	Required Return
Debt	Rs 15,400 million	6.0%
Preferred stock	Rs 4,000 million	5.5%
Common stock	Rs 18,100 million	11.0%
	Market Value	**Required Return**
FCFF, most recent year	Rs 3,226 million	
Corporate tax rate	26.9%	

Singh notes that Bern has two new drugs that are currently in clinical trials awaiting regulatory approval. In addition to its operating assets, Bern owns a parcel of land from a decommissioned manufacturing facility with a current market value of Rs 50 million that is being held for investment. Singh and Sharma elect to value Bern under two scenarios:

Scenario 1 Value Bern assuming the two new drugs receive regulatory approval. In this scenario, FCFF is forecast to grow at 4.5% into perpetuity.

Scenario 2 Value Bern assuming the two new drugs do not receive regulatory approval. In this scenario, FCFF is forecast using a stable growth in FCFF of 1.5% for the next three years and then 0.75% thereafter into perpetuity.

1 Based on Exhibits 1 and 2, Seema's FCFF in 2016 is:

A Rs 680 million.

B Rs 1,200 million.

C Rs 3,080 million.

2 Based on Exhibits 1 and 2, Seema's FCFE in 2016 is:

A Rs 894 million.

B Rs 1,466 million.

C Rs 2,894 million.

3 Which of Sharma's statements regarding free cash flow is (are) correct?

A Statement 1 only

B Statement 2 only

C Neither Statement 1 nor Statement 2

4 Based on Exhibit 3, Sharma's FCFF sensitivity analysis Sharma Should conclude that Cola's value is most sensitive to the:

A FCFF growth rate.

B before-tax cost of debt.

C required rate of return for equity.

5 Based on Exhibit 4, Bern's firm value under Scenario 1 is closest to:

A Rs 100,951.3 million.

B Rs 105,349.1 million.

C Rs 105,399.1 million.

Cash 9 Gurmeet Singh [Solutions]:

1) A is correct. Seema's FCFF in 2016 is calculated as

FCFF = EBIT(1 – Tax rate) + Dep – FCInv – WCInv. FCInv = Purchases of PP&E = 1,000 (outflow).

WCInv = Increase in accounts receivable (outflow) + Increase in inventory (outflow) + Increase in accounts payable (inflow).

WCInv = –2,000 (outflow) + –200 (outflow) + 1,000 (inflow) =

–1,200 (outflow).

FCFF = 3,200(1 – 0.35) + 800 – 1,000 –1,200.

FCFF = Rs 680 million.

FCFF can also be computed from CFO:

FCFF = CFO + Int(1 – Tax rate) – FCInv. FCFF = 1,394 + 440(1 – 0.35) – 1,000.

FCFF = Rs 680 million.

2) A is correct. Seema's FCFE in 2016 is calculated as FCFE = CFO – FCInv + Net borrowing.

= 1,394 – 1,000 + 500

= Rs 894 million.

Alternatively, FCFE may be calculated as

FCFE = FCFF – Int(1 – Tax rate) + Net borrowing.

= 680 – 440(1 – 0.35) + 500

= Rs 894 million.

3) C is correct. Transactions between the company and its shareholders (through cash dividends, share repurchases, and share issuances) do not affect free cash flow. However, leverage changes, such as the use of more debt financing, have some impact on free cash flow because they increase the interest tax shield (reduce corporate taxes because of the tax deductibility of interest) and reduce the cash flow available to equity.

4) C is correct. Cola's valuation is most sensitive to the cost of equity (re) because the range of estimated values is larger than the valuation ranges estimated from the sensitivity analysis of both the FCFF growth rate (GFCFF) and the before-tax cost of debt (rd).

Variable	BaseCase	Low Estimate	High Estimate	Valuation with Low Estimate (Rs millions)	Valuation with High Estimate (Rs millions)	Range (Rs millions)
GFCFF	4.6%	4.2%	5.0%	3,274.16	4,021.34	747.18
rd	4.9%	3.9%	5.9%	3,793.29	3,445.24	348.05
re	11.0%	10.0%	12.0%	4,364.18	3,079.38	1,284.80

WACC = [wd × rd(1 – Tax rate)] + (we × re). Firm value = FCFF0(1 + g)/(WACC – g).

Cost of equity sensitivity

Using the base case estimates for the FCFF growth rate and the before-tax cost of debt and using the low estimate for the cost of equity (re) of 10.0%, the valua- tion estimate is

WACC = [(0.30)(0.049)(1 – 0.35)] + (0.70)(0.10) = 7.96%.

Firm value = 140 million(1 + 0.046)/(0.0796 – 0.046) = Rs 4,364.18 million.

Using the base case estimates for the FCFF growth rate and the before-tax cost of debt and using the high estimate for the cost

of equity (re) of 12.0%, the valuation estimate is

WACC = [(0.30)(0.049)(1 – 0.35)] + (0.70)(0.120) = 9.36%.

Firm value = 140 million(1 + 0.046)/(0.0936 – 0.046) = Rs 3,079.38 million.

Therefore, the range in valuation estimates from using the highest and lowest estimates of the cost of equity is Rs 1,284.80 million.

FCFF growth rate sensitivity

Using the base case estimates for the cost of equity and the before-tax cost of debt and using the low estimate for the FCFF growth rate (GFCFF) of 4.2%, the valuation estimate is

WACC = [(0.30)(0.049)(1 – 0.35)] + (0.70)(0.11) = 8.66%.

Firm value = 140 million(1 + 0.042)/(0.0866 – 0.042) = Rs 3,274.16 million

Using the base case estimates for the cost of equity and the before-tax cost of debt and using the high estimate for the FCFF growth rate (GFCFF) of 5.0%, the valuation estimate is

WACC = [(0.30)(0.049)(1 – 0.35)] + (0.70)(0.11) = 8.66%.

Firm value = 140 million(1 + 0.05)/(0.0866 – 0.05) = Rs 4,021.34 million.

Therefore, the range in valuation estimates from using the highest and lowest estimates of the FCFF growth rate is Rs 747.18 million.

Before-tax cost of debt sensitivity

Using the base case estimates for the FCFF growth rate and the cost of equity and using the low estimate for the before-tax cost of debt (rd) of 3.9%, the valuation estimate is

WACC = [(0.30)(0.039)(1 – 0.35)] + (0.70)(0.11) = 8.46%.

Firm value = 140 million(1 + 0.046)/(0.0846 – 0.046) = Rs 3,793.29 million.

Using the base case estimates for the FCFF growth rate and the cost of equity and using the high estimate for the before-tax cost of debt (rd) of 5.9%, the valuation estimate is

WACC = [(0.30)(0.059)(1 – 0.35)] + (0.70)(0.11) = 8.85%.

Firm value = 140 million(1 + 0.046)/(0.0885 – 0.046) = Rs 3,445.24 million.

Therefore, the range in valuation estimates from using the highest and lowest estimates of the before-tax cost of debt is Rs 348.05 million.

5) C is correct. Based on Scenario 1, where Bern receives regulatory approval for its new drugs, the growth rate in FCFF for Bern will be constant at 4.5%. Therefore, a constant growth valuation model can be used to calculate firm value.

Bern's weighted average cost of capital is calculated as WACC = [wd × rd(1 – Tax rate)] + (wp × rp) + (we × re).

The total market value of the firm is the sum of the debt, preferred stock, and common stock market values: 15,400 + 4,000 + 18,100 = 37,500.

WACC = [(15,400/37,500)(0.060)(1 – 0.269] + (4,000/37,500)(0.055) + (18,100/37,500)(0.11) = 7.70%.

Value of operating assets = FCFF0(1 + g)/(WACC – g).

Value of operating assets = 3,226 million(1 + 0.045)/(0.0770 – 0.045) =

Rs 105,349.06 million.

Total value of the company = Value of operating assets + Value of non- operating assets.

Total value of the company = 105,349.06 million + 50 million =

Rs 105,399.06 million.

Meeting with Chairman IBBI

Meeting with Chairperson IBBI Mr. Ravi Mittal by CMA P. Raju Iyer (President, ICAI) CMA Vijender Sharma (Vice President, ICAI) Dr. JD Sharma (Chairman IPA ICAI) Dr. Divya Sharma (Independent Director IPA ICAI) Dr. S.K. Gupta (Managing Director ICMAI RVO) AVM Rakesh Kumar Khattri (Retd.) (Managing Director IPA ICAI, Ms Nisha Dewan, CEO & CFO IPA ICAI)

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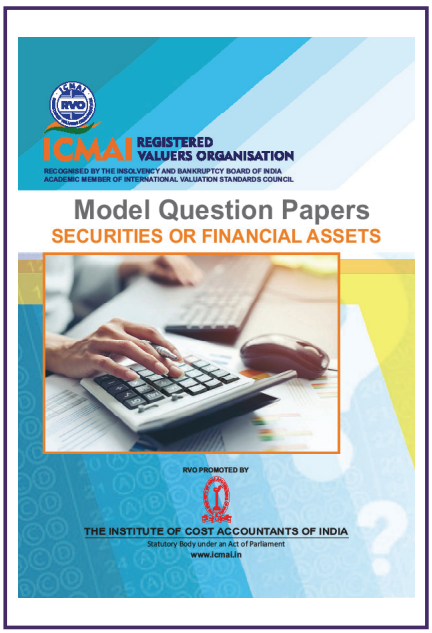

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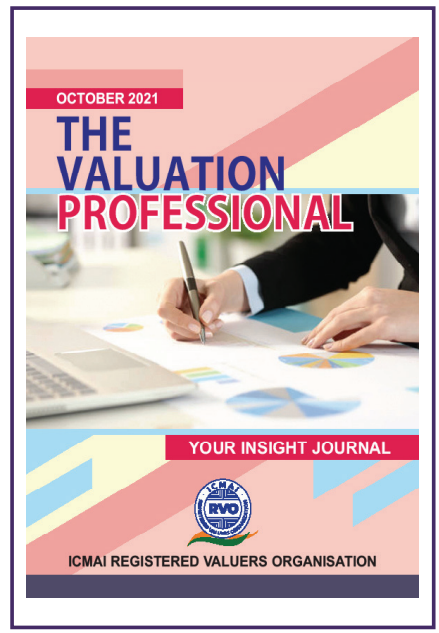
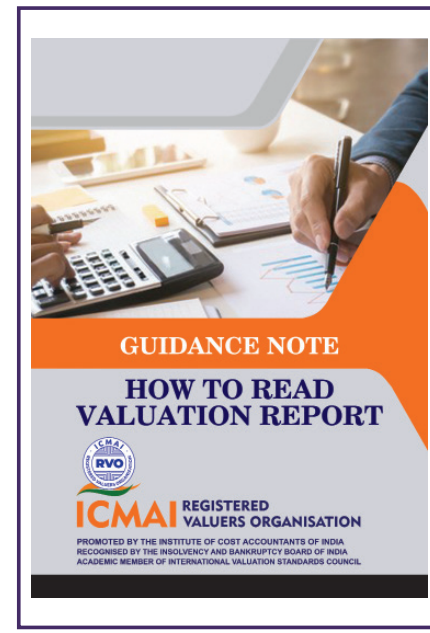
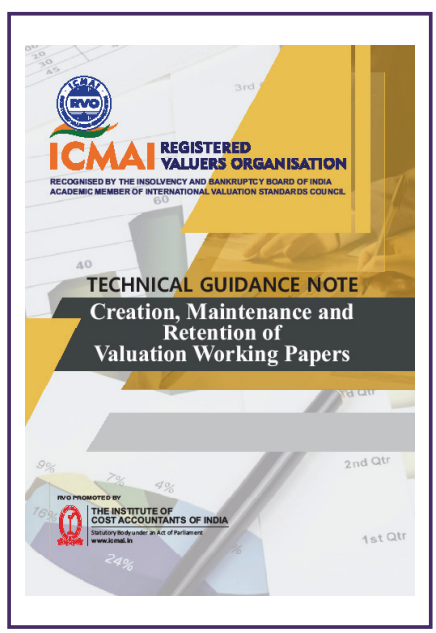


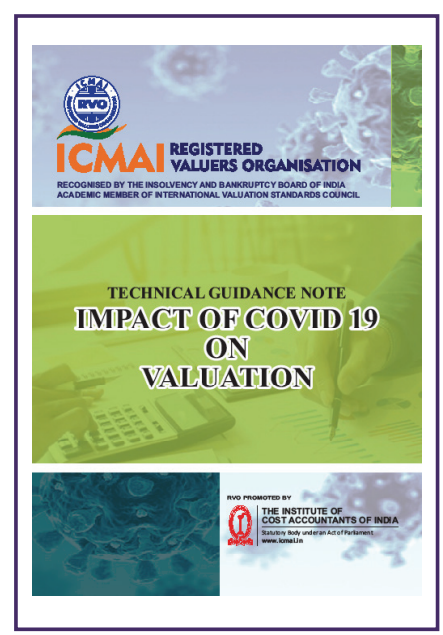
The Valuation Professional



Guidance Note
How to Read Valuation Report



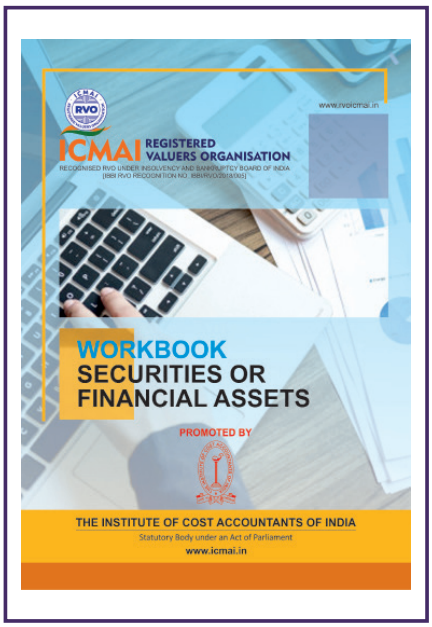
Technical Guidance Note
Creation Maintenance and
Retention of Valuation



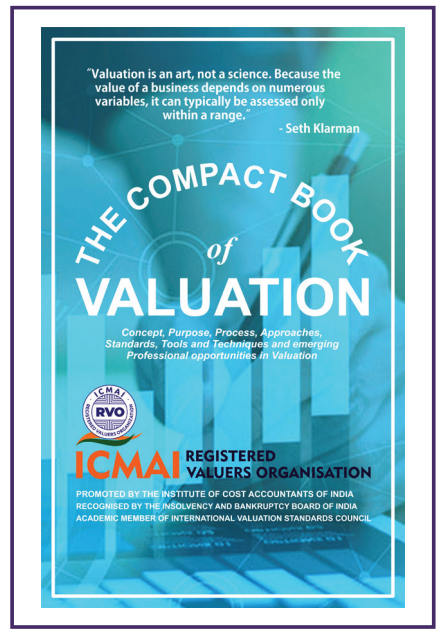
Technical Guidence Note
Impact of Covid 19
on Valuation

Link:- https://www.rvoicmai.in/publication/

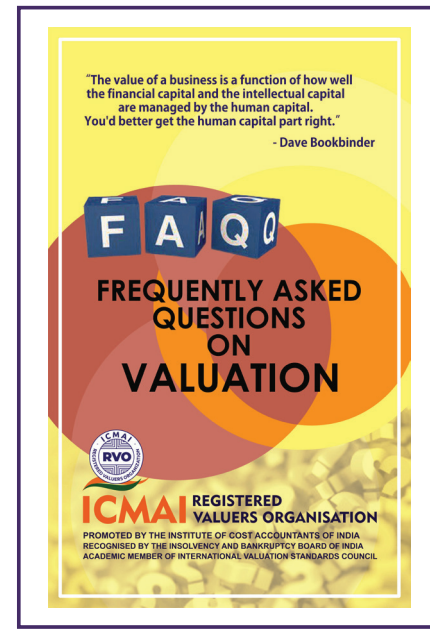
PUBLICATIONS



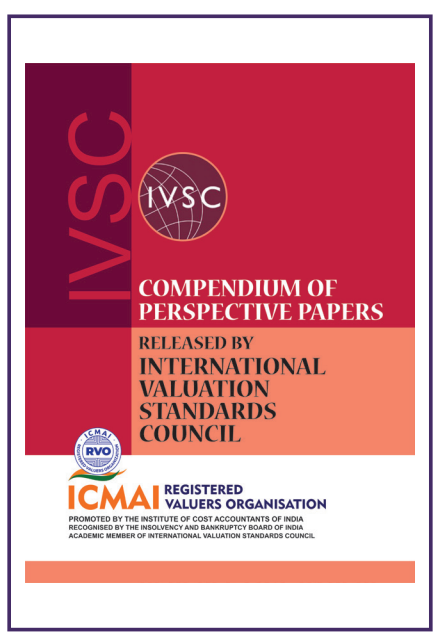
Work Book
Securities or Financial Assets



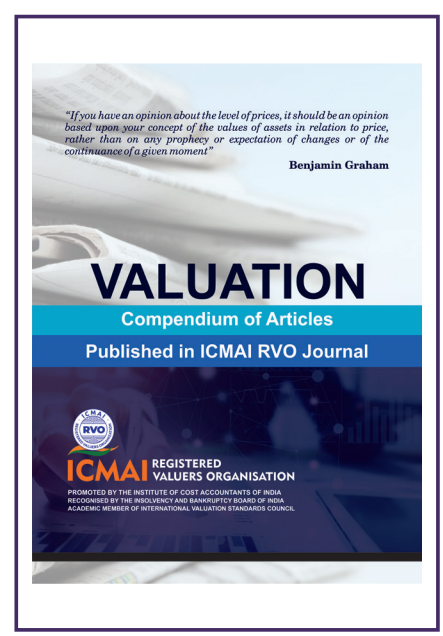
The Compact Book of
Valuation



FAQ
Frequently Asked Questions on
Valuation



Compendium of
Perspective Papers



Compendium of Articles

Link:- https://www.rvoicmai.in/publication/

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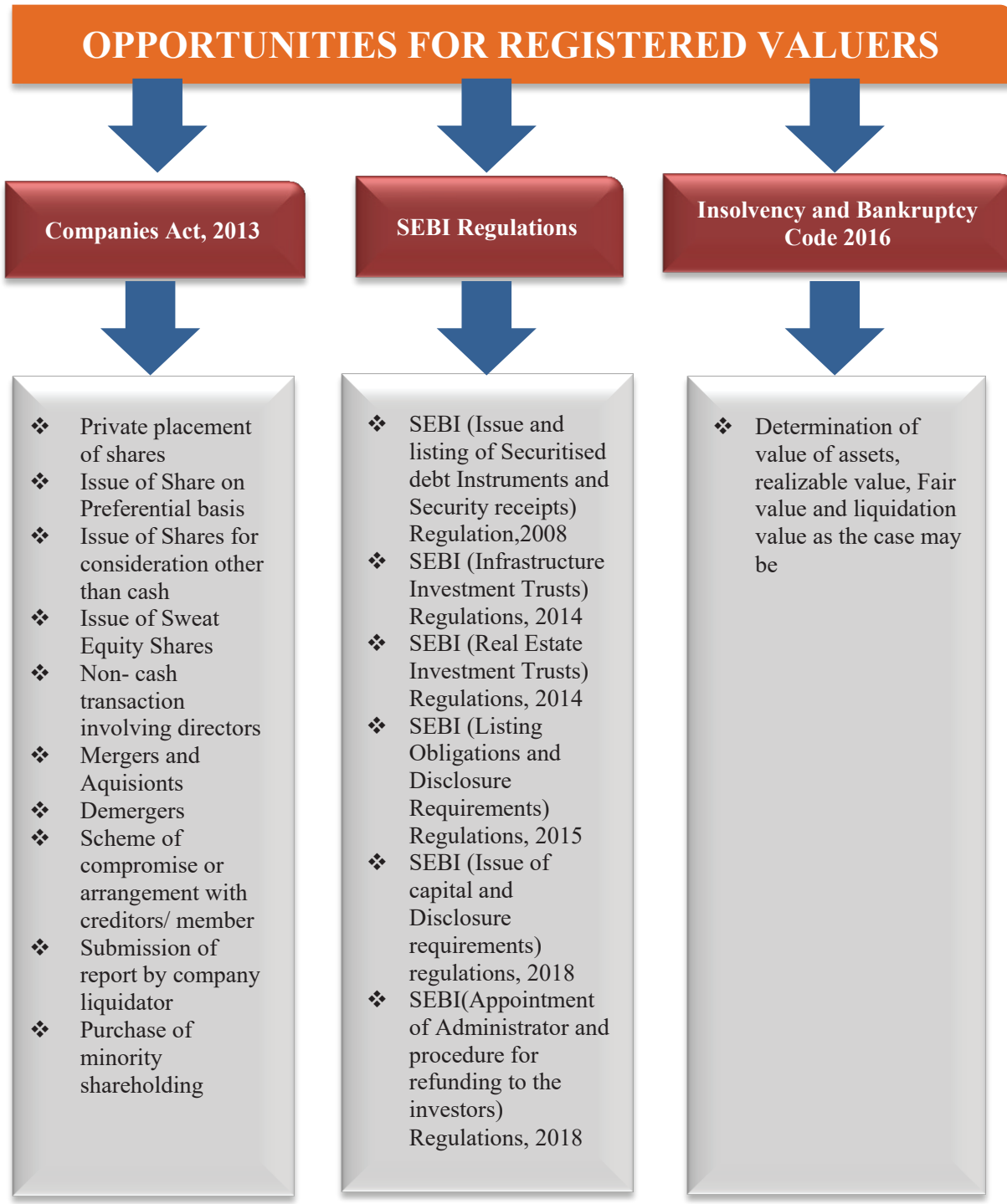
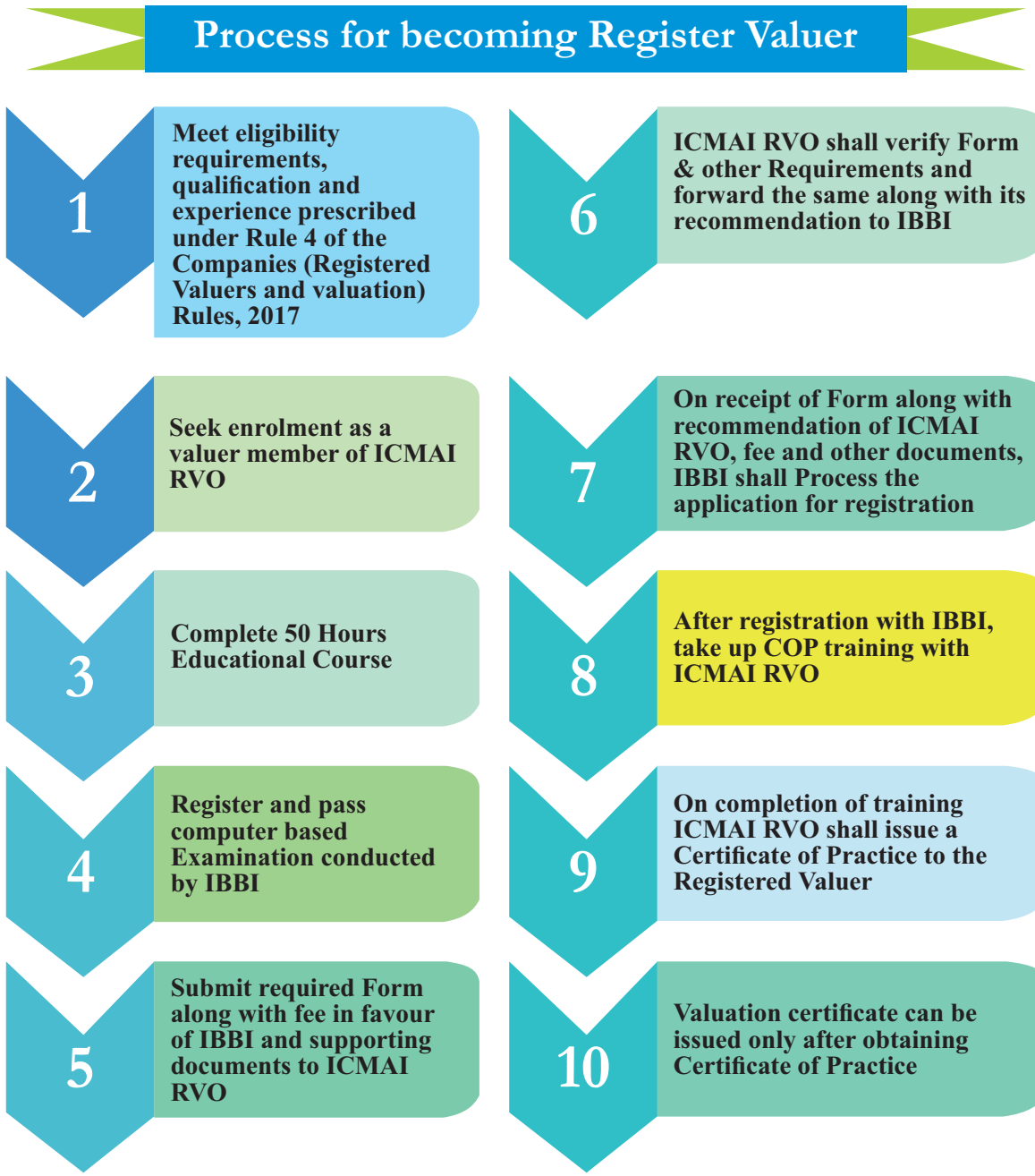
35	yogpath99@gmail.com	Yogesh Prabhudas Pathak	AHMEDABAD , GUJARAT	Land and Building	Engineer	9426484305


OPPORTUNITIES FOR REGISTERED VALUERS
Companies Act, 2013
Private placement of shares
Issue of Share on Preferential basis
Issue of Shares for consideration other than cash
Issue of Sweat Equity Shares
Non- cash transaction involving directors
Mergers and Aquisionts
Demergers
Scheme of compromise or arrangement with creditors/ member
Submission of report by company liquidator
Purchase of minority shareholding
SEBI Regulations
SEBI (Issue and listing of Securitised debt Instruments and Security receipts) Regulation,2008
SEBI (Infrastructure Investment Trusts) Regulations, 2014
SEBI (Real Estate Investment Trusts) Regulations, 2014
SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015
SEBI (Issue of capital and Disclosure requirements) regulations, 2018
SEBI(Appointment of Administrator and procedure for refunding to the investors) Regulations, 2018
Insolvency and Bankruptcy Code 2016
Determination of value of assets, realizable value, Fair value and liquidation value as the case may be


Process for becoming Register Valuer
1
Meet eligibility requirements, qualification and experience prescribed under Rule 4 of the Companies (Registered Valuers and valuation) Rules, 2017
2
Seek enrolment as a valuer member of ICMAI RVO
3
Complete 50 Hours Educational Course
4
Register and pass computer based Examination conducted by IBBI
5
Submit required Form along with fee in favour of IBBI and supporting documents to ICMAI RVO
6
ICMAI RVO shall verify Form & other Requirements and forward the same along with its recommendation to IBBI
7
On receipt of Form along with recommendation of ICMAI RVO, fee and other documents, IBBI shall Process the application for registration
8
After registration with IBBI, take up COP training with ICMAI RVO
9
On completion of training ICMAI RVO shall issue a Certificate of Practice to the Registered Valuer
10
Valuation certificate can be issued only after obtaining Certificate of Practice

EDUCATIONAL QUALIFICATION & EXPERIENCE

FOR 50 HOURS EDUCATIONAL COURSE

Asset Class	Eligibility/ Qualification	Experience in specified discipline.
Plant and Machinery	(I} Graduate in Mechanical, Electrical, Electronic and Communication, Electronic and Instrumentation, Production, Chemical, Textiles, Leather, Metallurgy, or Aeronautical Engineering, or Graduate in Valuation of Plant and Machinery or equivalent; (ii) Post Graduate on above courses.	(i) Five years (ii) Three years
Land and Building	(i) Graduate in Civil Engineering, Architecture, or Town Planning or equivalent; (ii) Post Graduate on above courses and also in valuation of land and building or Real Estate Valuation (a two-year full time post-graduation course).	(i) Five years (ii) Three years
Securities or Financial Assets	(i) Member of Institute of Chartered Accountants of India, Member of Institute of Company Secretaries of India, Member of the Institute of Cost Accountants of India, Master of Business Administration or Post Graduate Diploma in Business Management (specialisation in finance). (ii) Post Graduate in Finance	Three years
Any other asset class along with corresponding qualifications and experience in accordance with rule 4 as may be specified by the Central Government. *Note: The eligibility qualification means qualification obtained from a recognized Indian University or equivalent Institute whether in I ndia or abroad.".*		

PROCESS FOR IBBI EXAMINITION

a. The candidate may enroll for the examination on payment of the fee as prescribed by IBBI
b. Online examination with objective multiple-choice questions
c. The duration of the examination is 2 hours
d. Wrong answer attracts a negative mark of 25% of the assigned for the question
e. A candidate needs to secure 60% of marks for passing.

FORMAT AND FREQUENCY OF EXAMINATION

a. The examination is conducted online (computer-based in a proctored environment) with objective multiple-choice questions;
b. The examination centers are available at various locations across the country;
c. The examination is available on every working day;
d. A candidate may choose the time, the date and the Examination Centre of his choice for taking the Examination. For this purpose, he needs to enroll and register at https://certifications.nism.ac.in/nismaol/
e. A fee of Rs.1500 (One thousand five hundred rupees) is applicable on every enrolment;
f. The duration of the examination is 2 hours;
g. A candidate is required to answer all questions;
h. A wrong answer attracts a negative mark of 25% of the marks assigned for the question;
i. A candidate needs to secure 60 % of marks for passing;
j. A successful candidate is awarded a certificate by the Authority;
k. A candidate is issued a temporary mark sheet on submission of answer paper;
l. No workbook or study material is allowed or provided;
m. No electronic devices including mobile phones and smart watches are allowed; and
n. Use of only a non-memory-based calculator is permitted. Scientific Calculators (memory based or otherwise) are not allowed.

ICMAI REGISTERED VALUERS ORGANISATION

RECOGNISED RVO UNDER INSOLVENCY AND BANKRUPTCY BOARD OF INDIA

GUIDELINES FOR ARTICLES

The articles sent for publication in the journal "The Valuation Professional" should conform to the following parameters, which are crucial in selection of the article for publication:

- The article should be original, i.e. Not Published/ broadcasted/hosted elsewhere including any website.
- A declaration in this regard should be submitted to ICMAI-RVO in writing at the time of submission of article.
- The article should be topical and should discuss a matter of current interest to the professionals/readers.
- It should preferably expose the readers to new knowledge area and discuss a new or innovative idea that the professionals/readers should be aware of.
- The length of the article should not exceed 2500-3000 words.
- The article should also have an executive summary of around 100 words.
- The article should contain headings, which should be clear, short, catchy and interesting.
- The authors must provide the list of references, if any at the end of article.
- A brief profile of the author, e-mail ID, postal address and contact numbers and declaration regarding the originality of the article as mentioned above should be enclosed along with the article.
- In case the article is found not suitable for publication, the same shall be communicated to the members, by e-mail.

ICMAI REGISTERED VALUERS ORGANISATION

RECOGNISED RVO UNDER INSOLVENCY AND BANKRUPTCY BOARD OF INDIA

PROMOTED BY: THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

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