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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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Valuation is a quantitative process of determining the fair value of an asset or a firm. In general, a company can be valued on its own on an absolute basis, or else on a relative basis compared to other similar companies or assets. A company's valuation is essentially a function of its future cash flow except in rare situations where net asset liquidation leads to a higher value. The first key takeaway is "future." It implies that historical results of the company's earnings before the date of valuation are useful in predicting the future results of the business under certain conditions. The second key aspect is "Free cash flow." It is because cash flow, which takes into account capital expenditures, working capital changes, and taxes, is the true determinant of business value. Business owners should aim at building a comprehensive estimate of future cash flows for their companies.

The important point is that while it's far more difficult to arrive at a view on value in this climate, it's far from impossible. Valuations will involve more judgment than before, certainly, but they can be done. Concerns about the fair value of companies have emerged as valuation of illiquid investments and various asset classes has become challenging for asset managers given the current state of market uncertainty. It seems evident that the COVID-19-crisis has some noticeable effects on businesses. Under these circumstances, appraisers need to question critically whether and how to consider those comprehensive changes in their business valuations properly. In this context, two major effects have to be distinguished. On the one hand, the COVID-19-crisis directly influences a company's income situation whilst on the other hand, the crisis also leads to changes in the capital market parameters.

FROM THE PRESIDENT's DESK

CMA Biswarup Basu
Nominee Director
ICMAI Registered Valuers Organisation

President
The Institute of Cost Accountant of India

Valuation is all about data and as a result the analytical skills of a valuer have changed. There is a new breed of valuer coming through – analytical and data savvy, they have the skill set to manipulate market data in such a way as to automate much of the mundane processes valuers are used to undertaking. This is the first evolution of the 'automated valuation' model which will provide more accurate, reliable and less-risky valuations for the industry

There is no doubt that COVID has had a significant impact on company valuations. While some sectors are seeing surging multiples, others are struggling. Global economic activity is picking up after world markets crashed at the onset of the COVID-19 pandemic. That said, official forecasts suggest that most economies won't see pre-pandemic performance levels until late 2022. Despite still-high levels of unemployment and subdued consumer demand, Indian and world stock indices are currently trading at one of the most expensive valuation levels ever.

Although the political and economic landscape is always influencing and shaping valuation and wider business practice, right now there seems to be a lot of uncertainty at both national and macro levels. There is a growing awareness that the results of a valuation matter and that consistency and quality must improve. These comments alone are fuelling a new determination to advance professionalism in valuation.

FROM THE MD's DESK

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

One of the lessons learned from the COVID-19 crisis is that a coherent narrative is more important than ever in business valuation, says Dr. Aswath Damodaran, of New York University Stern School of Business, who gave the keynote address at the CBV Congress 2021. A valuation needs a marriage of narrative and numbers, Damodaran says. In a good valuation, the numbers are "bound together" by a coherent narrative, and storytelling is kept grounded with numbers. Too much emphasis on numbers can make valuations mere "plug-and-point exercises" that may be perceived to be sales pitches or a confirmation of preconceived values.

The latest edition of the International Valuation Standards (IVS) marks an important milestone towards harmonizing valuation practice worldwide. IVS serve as the key guide for valuation professionals globally and will underpin consistency, transparency and confidence in valuations which are key to investment decisions, financial reporting and financial market stability. The latest IVS becomes effective from 31st January 2022. However, the IVSC encourages early adoption from the date of publication. Valuers will need to make clear which edition of the IVS they are using when preparing a valuation report.

The government has used Sector-specific valuation approach to drive monetization pipeline to arrive at indicative value of Rs 6 lakh crore worth of assets to be monetized under the National Monetization Pipeline. This is based on the suitability of the valuation approach to the nature of the assets and the accompanying revenue streams.

PROFESSIONAL DEVELOPMENT

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PROFESSIONAL DEVELOPMENT PROGRAMS

July'2021 to September'2021	
Date	**PD Programs**
03rd July 2021	How to use Financial Modelling in Valuation
08th July 2021	Practical Challenges in valuation and how to overcome them
10th July 2021	Case Studies on Valuation
11th July 2021	Learning Session Practical Aspects of Valuation
09th to 11th July 2021 & 15nd to 18th July 2021	50 hours Valuation Course on securities or Financial Assets
16th to 18th July 2021 & 22nd to 25th July 2021	50 hours Valuation Course on Land and Building asset class.
16th to 18th July 2021 & 22nd to 25th July 2021	50 hours Valuation Course on Plant and Machinery asset class.
17th July 2021	Valuation of distressed companies Impact of Covid on Valuation
18th July 2021	Demystifying Valuation Caveats, Limitations and Disclosures in Valuation Report
20th July	RV Conclave
21st July 2021	Practical Guidance How to handle valuation assignment in Challenging situations
24th & 25th July 2021	Learning Session on Valuation
28th July 2021	Learning Session NEW HORIZONS IN VALUATION
31st July 2021 &01st August 2021	Certificate Course on International Valuation Standards (General)
04rth August 2021	Harmonizing Interface between IPs and RVs
07th August 2021	Learning Session on Valuation
08th August 2021	Orientation Program on Valuation
11th August 2021	Learning Session on Valuation-Zomato Valuation -Case Studies
13th-14th -15th August 2021	3 Days Learning Session on Case Studies
14th August 2021	Master Class on Valuation
16th August 2021	Orientation Program on Valuation
19th August 2021	Master Class on Valuation
21st & 22nd August 2021	Master Class on Valuation
23rd August 2021	Orientation Program on Valuation
25th August 2021	Master Class on Soft Skills
28th -29th August 2021	Use of Advance Excel in Valuation & How to use Financial Modelling in Valuation
30th August 2021	Power Learning Series Emerging Trends in Valuation
01st & 2nd September 2021	Master Class on Valuation
03rd to 5th Sept. 2021 & 09th to 12th Sept. 2021	50 hours Valuation Course on Land and Building asset class.
03rd to 5th Sept. 2021 & 09th to 12th Sept. 2021	50 hours Valuation Course on Plant and Machinery asset class.
04th & 5th September 2021	Master Learning Series
08th & 9th September 2021	Master Class on Valuation
10th-11th -11th September 2021	3 Days Learning Session on Case Studies
11th & 12th September 2021	Master Class on Valuation

PROFESSIONAL DEVELOPMENT PROGRAMS

Upcoming Professional Development Programs

Date	PD Programs
15th & 16th September 2021	Master Class on Practical Aspects of Valuation
17th September 2021	Learning Session for Registered Valuers
17th to 19th Sept. 2021 & 23rd to 26th Sept. 2021	50 hours Valuation Course on securities or Financial Assets
18th & 19th September 2021	Learning Session on Valuation


Articles

ARTICLE

BIASES IN VALUATION (A STUDY OF TYPES, CAUSES AND APPROACHES TO REDUCE BIAS IN VALUATION)

Dr. S K Gupta
Managing Director
ICMAI Registered Valuers Organization

Abstract

Business valuations of the same assets made by different valuators frequently diverge, resulting in lengthy and costly disputes. This paper provides insights into various types of Biases in Valuation and the sources of such biases. The understanding of the Backdrop of biases in valuation would enable to craft better and more realistic valuation outcomes.

Bias is, by far, the biggest enemy of good valuations and that it is pervasive

The Perspective

Business valuations are a key component of many business transactions. Consider for example a company that wants to acquire another company or sell a subsidiary. In both instances the value of the target company needs to be determined. Or consider a dispute between shareholders who decide to separate as a result. It is then necessary to determine the value of the shares to allow for these to be transferred. Likewise, when a company experiences financial distress and is facing bankruptcy, a valuator may need to determine whether the company's going-concern value – after a restructuring and/or turnaround – is higher than its liquidation value, as such that a comparison is used to assess whether it makes economic sense to rescue the company (e.g., through debt restructuring). As many businesses are currently on the edge of bankruptcy or have already entered insolvency proceedings, this last example will become increasingly prevalent in the aftermath of the COVID-19 pandemic. It will be of utmost importance that liquidation value and going-concern value after restructuring and/or turnaround are accurately assessed, to ensure for all stakeholders that the unnecessary further loss of economic value is minimized.

A valuation is often viewed as a number crunching exercise with readily available inputs and assumptions available, but it typically involves many subjective assessments, choices and assumptions that are prone to bias in a valuation. That is often driven by the underlying purpose for the valuation and if not managed properly, can give a result that may be limited in its usefulness. Valuers possess a certain level of professional autonomy to exercise their judgement on value estimation. However the dynamics in business environment, such as lack of a central market place and product heterogeneity makes such judgement susceptible to bias. In "hot" deal markets, executives often overvalue companies they are considering acquiring — and conversely undervalue potential acquisition targets when the economy is weak.

What Is Bias?

Bias is an illogical or irrational preference or prejudice held by an individual, which may also be subconscious. It's a uniquely human foible, and since investors are human, they can be affected by it as well. Psychologists have identified more than a dozen kinds of biases, and any or all of them can cloud the judgment of an investor., bias is also a tendency to ignore evidence that does't line up with that assumption. All valuations are contaminated by bias, because we, as human beings, bring in our preconceptions and priors into the valuations. When you are paid to do valuations, that bias multiplies and in some cases, drowns out the purpose of valuation.

Despite the commonly heard catchphrase "valuation is a craft, not a science" (e.g., Damodaran 2016), the clear focus in the valuation literature on valuation techniques and associated inputs suggests valuation

is typically treated more as a science than an art. We would encourage an increased focus on the psychological factors that can influence perceptions regarding a valuation object and ultimately valuations. Although we acknowledge that cognitive biases are hard to minimize or regulate, we advocate for an increased awareness of the influence of biases in business valuations. Discussions regarding the cause of large differences in valuation outcomes can benefit from insights from behavioral sciences, including the current research.

"Valuations are all about judgment," At the same time, differences in judgment can be magnified in the final value. A difference of 1 percentage point in the capitalization rate used for the income approach, for example, can be significant when extrapolated as part of a multimillion-dollar valuation. That's why it is important to understand what goes into making a judgment.

There are times, however, when, if a business valuator's report is biased, the bias is more difficult to spot. An attempt to intentionally drive the value in the desired direction may be disguised in several areas of the analysis. These may include, for example, the development of the discount rate in the Income Approach, or the comparable transactions selected in the Market Approach. The choice of "normalizing adjustments" for excess salaries, self-dealing transactions, owners' perks paid by the business, etc., and the amounts of these adjustments, also impact value. Such manipulations in these areas could have a significant impact on value individually. Alternatively, a series of small such manipulations could, cumulatively, result in a large change in value. These are harder to discover

Types of Biases in Valuation

Biases in valuation may be classified as under :

- **Conservatism bias :** Valuers measure the fair value of financial assets conservatively when there is more uncertainty in the inputs used to obtain the fair value. Applying this conservative approach is even more likely under pressure from investors or governance bodies, perhaps to gain their confidence and trust. While fair values are meant to provide an accurate picture of a firm's financial assets, but when markets are not always liquid and market prices are not always available to reliably measure the fair values, discretion must then be used. Understanding the discretionary biases at play can help valuers in delivering a better valuation output.
- **Anchoring bias:** While a valuer is educated and trained to conduct valuation analyses carefully, data deficiencies create input uncertainty which may lead valuers to apply heuristic behavior in their decision-making process. Available factual (but relevant?) information, such as previous value estimates or pending sale prices may act as reference points that may influence valuers in their current value estimates. This phenomenon is referred to as anchoring bias
- **Heuristic bias :** Depending on the level of objective and factual information available to the valuer, individual valuers must rely to some extent on their own judgement skills and hence may (sub)consciously be exposed to heuristic bias in their value decision.

Common Sources of Bias in Valuation

- **Forecasting.** A forecast or projection of future cash flows from a business is a key input to a valuation model based on future cash flows. In preparing as a forecast, there are many sources of potential bias. For example, there can be too much reliance on personal experience, intuition instead of independent information and data in estimating revenue growth rates and profitability metrics. Even if objective information is utilized, confirmation bias can result in more weight in the analysis being given to information that confirms existing optimistic beliefs that may be optimistic or pessimistic. When estimating the profitability of a business, the historical performance is often given significant weight, but those historical results are often subject to adjustments intended to normalize the results which can be selectively included or excluded.
- **Valuation Inputs.** Beyond the forecast assumptions, there are various other inputs assumed in a valuation model related to working capital and capital expenditure requirements, identification of redundant assets, discount rates and terminal value adjustments. For example, discount rates should reflect the risk of achieving the future cash flows forecasted but there are several choices among alternatives in building the discount rates that are subject to bias. Any one of these inputs, if misapplied or selected without any objective basis, can result in significant variations in valuation conclusions.
- **Valuation Multiples.** Market participants may rely on a relative valuation or market approach as the primary valuation approach or as a secondary approach. Obtaining relevant data from truly comparable companies that are publicly traded can be difficult and there may be a temptation to use companies that are not comparable due to size, product mix, end markets, etc. In selecting valuation multiples

from open market transactions, transactions may be selected that are too old or not relevant for many of the same reasons related to publicly traded companies. Also, certain valuation multiples from comparable companies can included or omitted to achieve the objectives of the valuation and minimize those that conflict with the objectives.

- **Application of Discounts or Premiums.** The use of discounts such as illiquidity and minority discounts or a premium for control are more typical in private company valuations for shareholder disputes, income taxes and other disputes. Since there is limited objective information on discounts and premiums, a valuation conclusion can be subjectively decreased or increased by using subjective adjustments for various situations

How to reduce Bias in Valuation

- **Corroborate Forecast Inputs.** When estimating growth rates in revenues, factors like industry growth rates and market share should be considered. Independent information that conflicts should not be dismissed but rather used to stress test the forecasts. For example, a business may be expected to grow faster than industry average during the short to medium term but over the long-term, businesses tend to revert to the average in the longer term. To address bias in normalized financial results or where there is a limited history of operations, to the extent possible, the historical profit margins as a percentage of revenues should be corroborated with independent industry evidence for reasonability.
- **Corroborate Valuation Inputs.** To the extent possible, other valuation inputs that have a material impact on the valuation should be based on objective verifiable information. This includes historical information related to inputs such as working capital and capital expenditure requirements and market-based information related to calculation and selection of discount rates. While historical data specific to the company is usually strong evidence for inputs such as working capital and capital expenditures, industry data should also be utilized where there is limited historical evidence or data available in an early stage business.
- **Bias in Financials :** The projections that are given to the valuer by the client need to be looked at with a critical eye," he says. Because the valuation professional isn't involved in the day-to-day operations of the business, it can be hard to determine if the projections are realistic
- **Cross Check the Results.** Where possible, a secondary valuation approach should be used to ensure the valuation conclusions from the primary valuation (typically a cash flow based method) approach are reasonable and consistent lending further support to the inputs and assumptions used in the primary valuation approach. This typically involves comparing the valuation multiples of a businesses with those of other comparable companies or to prior transactions in the shares of the subject company and if properly carried out, such an analysis can help stress-test the primary valuation method.
- **Valuation Range.** Any value that is obtained for a business is first and foremost an estimate and as accordingly should be quantified as a range of estimates to accommodate the inherent margin for error. This can be based on application of multiple scenarios and or presentation of a best-case (high) and worst-case (low) estimates of value. The output that is presented should reflect the estimates of value and the inherent uncertainty of those values.

Can AI and AVM reduce bias in Valuation

The benefit of these models is their ability to help minimize the potential for bias by focusing more on the "science" and less on the "art." As the industry relies more and more on model-based solutions like AVMs, the promise of accurate and impartial valuations is on the horizon. Predictive models themselves, unlike humans, lack emotion and therefore inherently lack the associated biases. Yet, it is important to understand that models are only as good as the data they are fed (or not fed). Most data for property valuations is collected in person by the same person determining the final value, making those values susceptible to human bias. And so, even when applying technology-based alternatives to in-person appraisals, biased data can impact values if not recognized.

- **Data augmentation :** Sometimes the data available for modeling is insufficient in breadth or depth. These "thin" data sets may deliver inaccurate results. By supplementing this data with additional ancillary information or breaking data into constituent parts, models can sometimes increase accuracy.
- **Machine and deep learning :** These sophisticated algorithms not only analyze data and look for patterns, but also correct and refine their conclusions based on new and changing data. In this way, machines can learn to separate inaccuracies

or "noise" from the data and focus instead on the most relevant information that consistently delivers the most accurate valuations without bias. Neural networks are a terrific example of how modern analytics can mimic human behavior, all the while potentially weeding out biases.

- **Artificial intelligence :** Perhaps the most exciting approach to reducing bias is through the growth of artificial intelligence. One promising discipline known as Computer Vision analyzes images to assess a home with virtually no human input. By not telling the model the demographics of the homeowner or of the neighborhood, we can see the home, just like the visiting appraiser, but exclude unhelpful, prejudicial data. In this way, we can begin to eliminate unintentional human bias and replace it with objectivity.

Conclusions

Not much empirical research has been conducted investigating the influence of biases on business valuations. This lacuna is surprising considering (1) the vast amount of research conducted on biases in other areas of financial decision making, and (2) the central role that the concept of economic value plays in corporate disputes, mergers and acquisitions, other investment decisions, and in insolvency proceedings

Bias in valuations cannot be eliminated as there will always be inherent estimation uncertainty from the forward-looking nature and many assumptions used. However, building better valuation models that effectively use available objective and independent information is an effective way of addressing the bias and the uncertainty arising from macroeconomic, industry and company specific conditions.

A biased valuation analysis is worse than useless

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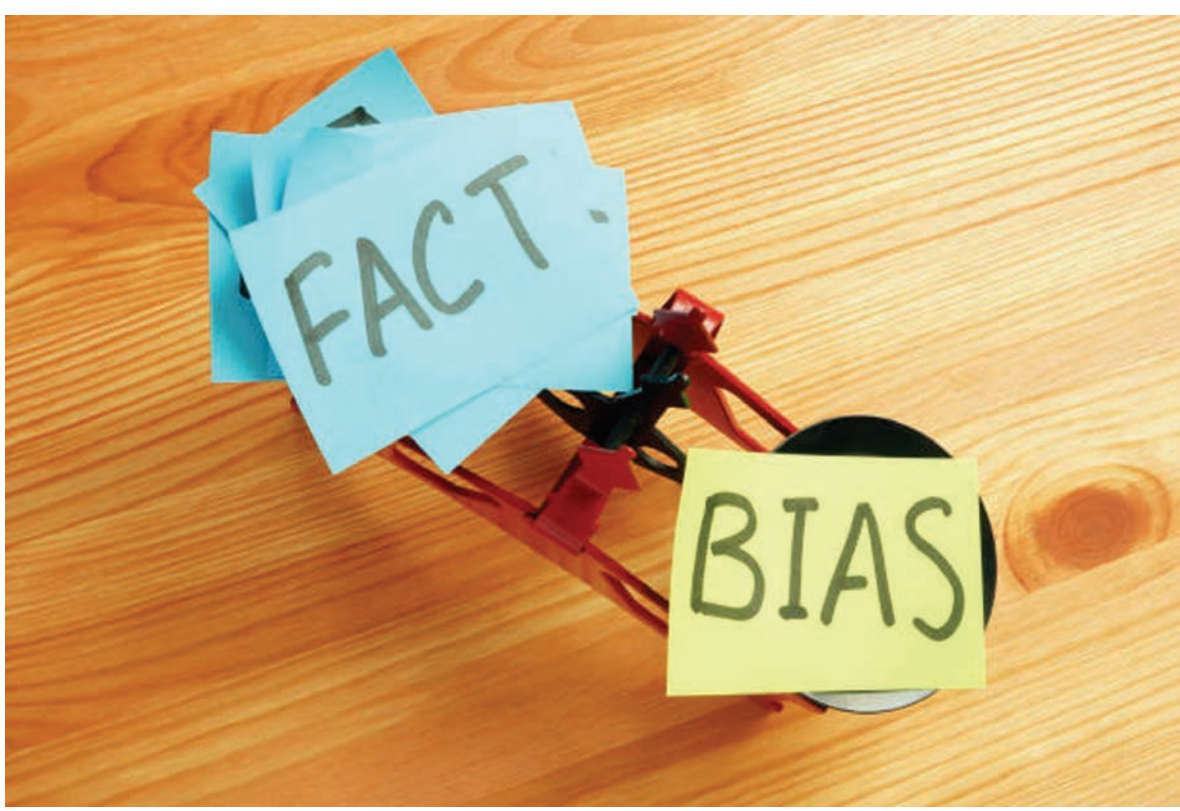


SPECIAL PURPOSE ACQUISITION COMPANY (SPAC)

Vaidyanathan Ramachandran

Registered Valuer

A special purpose acquisition company (SPAC) is a company with no commercial operations that is formed strictly to raise capital through an initial public offering (IPO) for the purpose of acquiring an existing company. Also known as "blank check companies," SPACs have been around for decades in advanced economies like USA. In recent years, they've become more popular, attracting big-name underwriters and investors and raising a record amount of IPO money in 2019. In 2020, as of the beginning of August, more than 50 SPACs have been formed in the U.S. which have raised some $21.5 billion.

How a SPAC Works:

SPACs are generally formed by investors, or sponsors, with expertise in a particular industry or business sector, with the intention of pursuing deals in that area. In creating a SPAC, the founders sometimes have at least one acquisition target in mind, but they don't identify that target to avoid extensive disclosures during the IPO process. (This is why they are called "blank check companies." IPO investors have no idea what company they ultimately will be investing in.) SPACs seek underwriters and institutional investors before offering shares to the public.

The money SPACs raise in an IPO is placed in an interest-bearing trust account. These funds cannot be disbursed except to complete an acquisition or to return the money to investors if the SPAC is liquidated. A SPAC generally has two years to complete a deal or face liquidation. In some cases, some of the interest earned from the trust can be used as the SPAC's working capital. After an acquisition, a SPAC is usually listed on one of the major stock exchanges.

Advantages of a SPAC:

Selling to a SPAC can be an attractive option for the owners of a smaller company, which are often private equity funds. First, selling to a SPAC can add up to 20% to the sale price compared to a typical private equity deal. Being acquired by a SPAC can also offer business owners what is essentially a faster IPO process under the guidance of an experienced partner, with less worry about the swings in broader market sentiment.

Recent Trends:

SPACs have become more common in recent years, with their IPO fundraising hitting a record $13.6 billion in 2019—more than four times the $3.2 billion they raised in 2016. They have also attracted big-name underwriters such as Goldman Sachs, Credit Suisse, and Deutsche Bank, as well as retired or semi-retired senior executives looking for a shorter-term opportunity.

Examples of some recent SPAC Deals (in USA)

One of the most high-profile recent deals involving special purpose acquisition companies involved Richard Branson's Virgin Galactic. Venture capitalist Chamath Palihapitiya's SPAC Social Capital Hedosophia Holdings bought a 49% stake in Virgin Galactic for $800 million before listing the company in 2019.1

In 2020, Bill Ackman, founder of Pershing Square Capital Management, sponsored his own SPAC, Pershing Square Tontine Holdings, the largest-ever SPAC, raising $4 billion in its offering.

SPAC in Indian Context:

Special Purpose Acquisition Vehicles (SPACs) have emerged as a promising option to raise public funding from offshore markets. They are especially suited for start-ups, who otherwise find it difficult to excite the conservative Indian retail investors. This has become all the more critical as there is evidence that private funding may be drying up and it may be a while before it returns as a substantial source of capital for start-ups. With SPACs, the start-up gets listed through a reverse merger with a listed shell company, i.e., the SPAC, which acquires the start-up. Indian laws also need to be suitable amended to facilitate overseas fundraising by startups.

SPACs regulatory evolution - globally:

Globally, SPAC regulations have evolved over the past many years. SPAC structures are more shareholder friendly and have ample fail-safe measures to prevent fraud. Lock-in periods ensure that founders have some "skin in the game" and minimize agency costs. Successful SPAC listings over the years have reduced risk perceptions and, consequently, the associated upfront costs, such as underwriter's fee, has also come down. India has seen a reasonable number of acquisitions by SPAC recently:

- Yatra was acquired by Terrapin 3 Acquisition Corp (TRTL), a

NASDAQ-listed SPAC. TRTL was listed on NASDAQ in 2014 and Deutsche Bank was their underwriter.

- Videocon DTH was listed on the NASDAQ through a reverse merger with Silver Eagle Acquisition Corp, a SPAC. Silver Eagle was listed in 2014 and Deutsche Bank was their underwriter.
- Constellation Alpha Capital Corp., a SPAC, was listed on the NASDAQ in 2017. It is focussed on acquiring a target in healthcare services and manufacturing industry in India. Cowen acted as the underwriter for the offering.

In addition to the above, there have been multiple SPAC acquisitions in India in the past, including:

- Trans-India Acquisition Corp.'s acquisition of Solar Semiconductor in 2008; however, the position was liquidated in 2009. Trans-India was an AMEX-listed SPAC whose offering was underwritten by Joseph Gunner and Co.
- Presently delisted, Phoenix India Acquisition Corp. was listed as a SPAC on the NASDAQ in an offering underwritten by Gersten Savage. They acquired Citius Power in 2008.

Two inferences can be drawn from the above information. Major investment banks, who are active in the IPO market, have actively underwritten recent SPACs. Compared to this, SPAC underwriters in the early 2000s were more specialized. This goes back to the argument that underwriter fees have come down as competition has increased and, as a result, only the larger mainstream investment banks find it profitable to underwrite SPAC listings. Another important point to note is that the recent India-focussed SPACs were more successful and were listed on more prominent exchanges such as the NASDAQ. All this points to the increasing acceptance of SPACs as an additional avenue to raise capital in India.

Regulatory framework in India:

In India, the major regulatory drawback is the lack of targeted laws concerning SPACs. Below is the summary of the relevant regulations:

Company's Act:

Since November 2016, when the government announced demonetization, it has been cracking the whip on suspicious shell companies and there has been an urgency to define them because they are not presently defined under the Companies Act. In March 2018, a Parliamentary committee asked the government to define the term "shell company" in the Company's Act in order to "avoid legal ambiguity and pre-empt avoidable litigations".

A paper by Garg et al. (2011) identified the "Objects" clause in the Companies Act 1956 as a major impediment in the implementation of SPACs. The clause requires applicants to mention their business objective. Unfortunately, SPACs have no business objectives of their own and their sole objective is to acquire a target. Company's Act 2013 has done away with the "Other Objects" clause, thus taking away any flexibility in defining the Objects. The Companies (Amendment) Ordinance introduced in the Parliament in 2017 proposed the removal of the "Objects" clause all-together. However, this proposal was removed before the Act was signed.

As per Section 248 of the Company's Act 2013, the registrar can remove a company's name from the register of companies if it has "failed to commence its business within one year of its incorporation". The typical acquisition timeline of a SPAC is 18 to 24 months. The sponsors need this time to identify the best target in order to maximize shareholders' wealth. Thus, this clause presents a major hurdle to SPAC implementation.

SEBI Regulations:

In 2017, SEBI suspended trading in 331 suspected shell companies; However, it later gave a clean chit to most of them. In 2018, in an advisory capacity to the government, SEBI based its definition of shell companies on the U.S. SEC regulations.

SEBI (Issue of Capital and Disclosure Requirements) Regulations, 2009 (amended Aug 2017), clause 26 sets minimum eligibility conditions for a public offer. These require the issuer to have:

- Net tangible asset of at least INR 3 crore in each of the preceding three years (earlier requirement of maximum of 50% to be held in monetary assets has been done away with in case the entire public offer is through sale).
- Minimum average consolidated pre-tax operating profit of INR 15 crore during any three of the last five years.
- Net worth of at least INR 1 crore in each of the last three years.

It is easy to see that SPACs cannot meet some of these conditions, if not all. They do not have any operational profits or non-monetary tangible assets. Furthermore, even if the founders infuse monetary assets, most SPACs cannot wait for three years before getting listed.

Exchange requirement:

All major SPAC exchanges across the globe have their own SPAC-related regulations. Some of them have been highlighted below:

- In January 2018, in a bid to encourage SPACs and reduce price distortion, the NASDAQ proposed that the number of round-lot holders be reduced and the SPACs should maintain net tangible assets of $5 million to remain listed.
- In the case of a reverse merger with a listed entity, the London Stock Exchange (LSE) requires

the listed entity to delist and then reapply.

- The Australian Securities Exchange and HongKong Exchange allow reverse merger on a case-by-case basis.
- Canada's Toronto Stock Exchange (TSX) has separate guidelines for SPACs and is actively promoting it.
- The National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE) are the two most prominent stock exchanges in India. Both exchanges require compliance with SEBI regulations. In addition, the NSE requires the companies to have positive operational cash accruals (Earnings before Depreciation and Tax) for the last two years, making SPACs ineligible for listing.
- Recent India-focussed SPACs were more successful and were listed on more prominent exchanges such as the NASDAQ.
- In addition to above the Acts and laws, Garg et al. (2011) identified SEBI (Substantial Acquisition of Shares and Takeovers) Regulations, 2011 (amended Mar 2017) and Foreign Exchange Management (Acquisition and Transfer of Immovable Property in India) Regulations, 2018 (FEMR) as having significant impact on SPAC mergers in India. The Takeover code is applicable only if the target company is listed, in which case it puts severe limitations on the extent of control that can be acquired and further increases the time period for the transaction. FEMR is applicable in case either one of the SPAC or target is listed outside India, or if an Indian SPAC receives investment from offshore investors. FEMR guidelines allow overseas investment only upon the acceptance of the application by the Reserve Bank of India (RBI). FEMR Cross Border regulation 2018 allows both inbound and outbound mergers, subject to adherence to all relevant laws and regulations.

Source: www.investopedia.com; https://mnacritique.mergersindia.com;

Indian Capital market regulator SEBI has formed a group of experts to examine the feasibility of introducing Special Purpose Acquisition Companies (SPACs) like structures. The group, formed under SEBI's Primary Market Advisory Committee (PMAC), has been asked to submit its report at the earliest. "SEBI wants to explore the potential of SPACs while at the same time building adequate checks and balances in regulatory framework to take care of the associated risks" (source: https://www.business-standard.com).

VALUATION OF COMPULSORILY CONVERTIBLE PREFERENCE SHARES IN THE CONTEXT OF INVESTMENTS UNDER FEMA – A NOTE ON ANTI-DILUTION

Abraham Mathews
ACMA

This note seeks to capture the approach a valuer needs to take when valuing investments made by foreign investors in unlisted Indian companies, specifically in the context of down round protection clauses, or conversion at lower valuations as compared to valuation at the time of entry.

FEMA directions:

RBI's Master Direction on Foreign Investment in India refers to Foreign Direct Investment (FDI) in India through **capital instruments** by a person resident outside India in (a) an unlisted Indian company or (b) 10% or more of the post issue paid-up equity capital on a fully diluted basis of a listed Indian company. These **capital instruments** include equity shares, debentures, preference shares and warrants issued by the Indian company. Preferences shares are fully, compulsorily and mandatorily convertible preference shares.

Pricing guidelines mandate that the price of capital instruments of an Indian company issued by it to a person resident outside India should not be less than (a) the price worked out in accordance with the relevant SEBI guidelines or (b) the valuation of capital instruments done as per any internationally accepted pricing methodology for valuation on an arm's length basis duly certified by a Chartered Accountant or a SEBI registered Merchant Banker or a Cost Accountant, in case of an unlisted company.

In case of convertible capital instruments, the price / conversion formula of the instrument is required to be determined upfront at the time of issue of the instrument. **The price at the time of conversion should not in any case be lower than the fair value worked out, at the time of issuance of such instruments**, in accordance with the extant FEMA regulations.

Anti – Dilution clauses in share purchase agreements:

Share purchase agreements typically have anti-dilution / down-round protection clauses embedded, e.g.,

In the event the Company proposes to issue any equity securities to any third party entitling such third party to receive, subscribe to, convert into and/or exchange for equity securities at a price lower than the Investor's average subscription price (Dilution Instrument), then such issuance shall not be made, unless prior to or simultaneously with such issuance, the Investor shall be entitled to a broad-based weighted average anti-dilution protection in accordance with the terms and procedure described (Broad Based Anti-Dilution Protection). The anti-dilution protection shall be effected by an adjustment to the **conversion price** of the CCPS or if such conversion price adjustment is not permitted by Applicable Law, or the CCPS have been converted into equity shares, in any other manner permitted under Applicable Law as would have the same substantive effect in a manner acceptable to the Investor.

Broad Based Anti-Dilution Protection

$$NCP = (P1) \times \frac{\{(Q1) + (Q2)\}}{\{(Q1) + (R)\}}$$

For the purposes of this Schedule, "**NCP**" is the new conversion price for CCPS;

"P1" is the conversion price of the CCPS in effect immediately prior to the new issue;

"**Q1**" means the number of Equity Shares Outstanding immediately prior to the new issue;

"**Q2**" means such number of Equity Shares that the aggregate consideration received by the Company for such issuance would purchase at the Conversion Price (P1);

"**R**" means the number of Equity Shares issuable/issued upon conversion of the Dilution Instruments being issued.

For purposes of this Clause, the term "**Equity Shares Outstanding**" shall mean the aggregate number of Equity Shares of the Company then outstanding (assuming for this purpose the exercise and/or conversion of all then-outstanding securities exercisable for and/or convertible into Equity Shares (including without limitation the conversion of CCPS)).

The effect of this broad based anti-dilution protection clause is to reduce the conversion price to a price that is lower than the fair value worked out at the time of issuance of the instrument, which goes against the direction issued under FEMA.

Full ratchet adjustment

As an alternative to broad based anti-dilution protection, it is possible that the investors have negotiated fall ratchet adjustment to the conversion price, which gives even more protection to investors in a down round. Full ratchet protection resets the conversion price of the convertible securities to the price per security issued in the down round and maintains the investor's percentage in the expanded share capital post the down round. Typically, this clause would not be found in well-negotiated agreements since they cause larger damage to the founders' stake.

The effect of this full ratchet protection clause is also to reduce the conversion price to a price that is lower than the fair value worked out at the time of issuance of the instrument, which again, is against the directions issued under FEMA.

This is a well-recognized challenge, with a great deal of difficulty in actual implementation of the anti-dilution provisions. Hence, for the purpose of determination of the Fair Value of the instrument at the time of issue, the probability of occurrence of a down-round and consequent anti-dilution needs to be estimated, and built into the valuation price.

This challenge may not arise in case the foreign investor is a registered entity under the Foreign Venture Capital Investors (FVCI) guidelines with SEBI, since they would be exempt from the regulatory aspects of entry and exit pricing. Hence, FVCIs will be able to exercise their anti-dilution rights without FEMA related constraints on pricing. The investments need to be made in Venture Capital Undertakings (VCU) as defined in the SEBI guidelines, i.e., in unlisted equity shares or equity linked instruments of the VCU or an SPV set up to make such an investment.

Where the FVCI guidelines do not apply, however,

a. the instruments need to be issued at an entry price where the valuation enables conversion at the lowest end of the range of outcomes.
b. Actual conversion may then happen at a price higher than the entry price, based on the actual valuation at the time of conversion.
c. In case where conversion happens at a price lower than the entry price, it can be done only with a prior RBI approval.

Given the challenge listed above, a valuer would have to carefully consider the anti-dilution provisions in the investment agreement with incoming foreign investor, the status of the foreign investor, the likelihood of down-rounds and the consequent anti-dilution protection that kicks in, and then build the anti-dilution protection rights into the enterprise value by way of a downward adjustment in the enterprise value.

Non achievement of performance targets

The situation may also arise where the founders commit to achieving certain performance targets based on which the enterprise valuation is done. To protect against non-performance, the foreign investor may build in conversion at a lower valuation in case the targets are not achieved. Typically, the investment agreement will outline a floor price at which the conversion will take place, in case the targets are not achieved. However, in this case as well, FEMA regulations may prevent conversion at a lower price than the entry price. Here again, the valuer needs to consider the likelihood of achievement of the performance targets outlined in the investment agreement, and value the company at an enterprise valuation that factors in the likelihood of non-achievement of the targets outlined.

Non-compliance with regulations and implications:

Prior approval of RBI is required for foreign investors exercising their anti-dilution rights, if the downward revision to the conversion price makes the conversion price lower than the entry price, as discussed above. If the downward revision in the conversion price has not been reported to the RBI by filing a fresh form FC-GPR by the company, the foreign investor will not be able to liquidate a sizeable portion of their convertible securities or additional equity securities, issued consequent to the anti-dilution adjustment. If a valuer comes across such securities, an assessment has to be made whether these securities can be liquidated at all, and a consequent adjustment made to the number of securities outstanding in any subsequent valuation, if liquidation of securities is in doubt.

VALUATION OF REIT ASSETS

Shubhendu Saha, MRICS

Registered Valuer (SFA & LB)

1. Real Estate Investment Trusts (REITs)

A Real Estate Investment Trust or REIT is a collective investment vehicle that owns or invests in income generating real estate assets. Principally REITs can be private, unlisted or publicly listed, however, publicly listed REIT are most referred to while analysing them. It allows investors to receive income from real estate assets without purchasing it directly, just like mutual funds. As in mutual funds, investors of a REIT own units which entitle them to earnings in form of dividend generated from the income of the underlying real estate assets that the REIT owns. The way NAV of Mutual Funds are derived from the market prices of stocks/financial instruments held by them, the NAV of REIT units depend on the market value of the real estate assets (comprising land and building and allied infrastructure/services), thereby making valuation of real estate assets a critical aspect of defining the performance of a REIT not only for financial reporting but also for investment analysis by investors and research analysts.

2. REIT Regulations in India

In India, REITs are regulated by the Securities and Exchange Board of India (SEBI) through SEBI (Real Estate Investment Trust) Regulations, 2014 (SEBI (REIT) Regulations), which has put lot of emphasis on valuation of real estate assets forming part of the portfolio of a REIT, identifying the Valuer as an important party involved in a REIT. According to the SEBI (REIT) Regulations, Valuer is defined as *"any person who is a 'registered valuer' under section 247 of the Companies Act, 2013…"*, making the valuation of REIT assets an exclusive domain of Registered Valuers (RVs). There are numerous rights and responsibilities bestowed upon the Valuer under the SEBI Regulations with schedule V of the SEBI (REIT) Regulations detailing out the content of valuation reports, wherein the methods adopted for valuation is highlighted prominently, something which the Companies (Registered Valuers and Valuation) Rules, 2017 also makes mandatory for the RVs to include in their valuation reports.

Apart from the regulatory requirement, the adoption of an appropriate and objective valuation methodology is also necessitated by the purpose of the valuation exercise and use of the report. The valuer has fiduciary responsibilities similar to an auditor, requiring them to present an objective opinion of the underlying value of the real estate assets held by the REIT. Thus, the investors – retail as well as professional real estate investors, need to rely on the judgement of the valuer to assess the performance of their investments. Moreover, the REITs attract global financial institutions as anchor investors for whom adoption of internationally accepted and understood valuation standards are mandatory for management of their respective investment portfolios.

Given these considerations, it becomes incumbent upon the Valuer to adopt a valuation methodology in accordance with the internationally acceptable valuation standards, namely International Valuation Standards (IVS) issued by IVSC or RICS Valuation Standards ("Red Book"), which is compliant with the IVS.

3. Valuation Approaches

The IVS defines three principal approaches of Valuation, based on the principles of price equilibrium, benefit anticipation or substitution (IVS 105 Paragraph 10.1) –

- Market Approach – provides an indication of value comparing the asset with identical or comparable assets for which price information is available, wherein the subject property/asset is adjusted for premia and discounts based on property specific attributes to reflect the underlying value of the property
- Income Approach – provides an indication of value by converting future cash flow to a single current value as the value of an income - producing asset is a function of future benefits derived from that asset
- Cost Approach – provides an indication of value by estimating the current replacement or reproduction cost of the asset and making deductions for physical deterioration and other factors of obsolescence, following the economic principle of substitution

As discussed above, the entire proposition of a REIT is to collectively own properties/ real estate

assets which generate income for the benefit of its investors and thus from the perspective of its investors, the value driver of any asset owned by REIT is its income generating capacity. Given that IVS 105 Paragraph 40.2, prescribes applying income approach for valuation and affording it significant weight when the income producing ability of the asset is the critical element affecting value, the most suitable approach for undertaking valuation of REIT assets tends to be the ***Income Approach***.

4. Income Approach to Valuation

Given that the income approach is based on the premise that the value of an income - producing asset is a function of future benefits and income derived from that asset, there are two commonly used methods of the income approach in real estate valuation namely, Direct Capitalization and Discounted Cash Flow (DCF).

Income Approach - Direct Capitalization Method

Direct capitalization involves capitalizing a 'normalized' single - year net income using an appropriate yield. This approach is best utilized with stable revenue producing assets, whereby there is little volatility in the net annual income.

Income Approach - Discounted Cash Flow Method

In this valuation method, future cash flows from the property are forecast using precisely stated assumptions. This method allows for the explicit modelling of income and cost associated with the underlying property/real estate asset. These future financial benefits are then discounted to a present-day value (valuation date) at an appropriate discount rate.

Generally, REITs own large campuses/office complexes with trans-national corporates, IT majors and financial institutions being major tenants/occupiers. In such developments, market practice generally involves contracting tenants in the form of pre-commitments at sub-market rentals to increase the attractiveness of the property to prospective tenants. Such benefits are typically extended to anchor tenants. Additionally, there are instances of tenants paying above-market rentals for certain properties as well (primarily owing to market conditions at the time of contracting the lease). In order to arrive at market rent, typically the impact of such sub/above market leases on the valuation of the underlying properties/real estate assets are normalised by estimating the market rent achievable at the end of the lease term, based on the expected rents in the market. This is known as ***Rental Reversion*** and the cash flow projections in the standard DCF method is refined accordingly.

5. Valuation Methodology

In order to compute the Market Value of the underlying properties/real estate assets, it is prudent to understand the market dynamics and the location where they are located in context of the existing and future supply, demand from occupiers, average office space take up by an occupier in a particular segment, existing vacancy numbers and the rentals, likely growth of the office space etc. Understanding of the micro market or neighbourhood positioning, where the underlying property/real estate asset is located is also very important. The next step then is to understand the situation of the underlying property/ real estate asset in terms of current achievable rentals, vacancy level, competing supply in the micro market etc., with respect to the micro market.

Given the criticality of understanding the commercial and physical aspects of the market, it becomes necessary to have access to comprehensive research on commercial real estate market with historical information to develop objective insights on the performance of the market and the relevant property/real estate assets. Typically, REITs and their managers engage specialised real estate research agencies, most likely an International Property Consulting firm who have extensive database and market reach to provide necessary market inputs and the Valuer should ensure that results of such market research is contractually available through the REIT manager for the purpose of valuation

5.1 Market and Location Assessment:

Market information from specialised research agencies, needs to be relied upon and reviewed by the Valuer to develop the understanding and assess the relevant micro-markets of the underlying properties/real estate assets, supplemented by own understanding of these markets and location The said review, are carried out in the following manner:

- Market dynamics influencing the rents along with rents of the properties are studied in detail. Further, the location setting of the properties in the respective micro-markets are assessed. Analysis of the micro-market are undertaken primarily based on the findings of the market research and readily available information in public domain to ascertain the transaction activity of commercial office space. The analysis entails review of comparable properties in terms of potential competition (both completed and under-construction/future developments), comparable recent lease transactions witnessed in the micro-market along with the trends in leasing within the properties in recent past, wherever available. This analysis enables the Valuer to have an informed opinion on the

market rent (applicable rental for the micro-market where the respective properties are located) and achievable market rent (Valuer's view on achievable rent for the respective properties for leasing vacant spaces, potential leasable area under development or planned as well as upon re-leasing of the existing let out area).

- For tenants occupying relatively large space within the properties, where there may be some instances of areas being let out at lower than market rent, basic assumption of the leases reverting to market rent following the expiry of the lease, factoring appropriate re-leasing time, are made.

5.2 Portfolio Assessment:

- As the first step, the rent rolls of the properties as received from REIT and its manager, (which includes review of corresponding leases deeds) on a reasonable sample basis are reviewed to identify tenancy characteristics for the properties. As part of the rent roll review, major tenancy agreements are reviewed from commercial perspective.
- For anchor/large tenants, adjustments on achievable market rent or additional lease-up timeframe are to be considered upon lease reversion wherever relevant.
- Title Report, Architect's certificates and other related documents, which are mandatorily required under the SEBI (REIT) Regulations, also need to be reviewed for validation of area details, ownership interests of the properties.
- Physical site inspections are also necessary not only because of regulatory requirements, but also to assess the physical state of the underlying properties/real estate assets in terms of their maintenance and utility.

5.3 Preparation of Future Cash Flows:

- The first step is the estimation of Net Operating Income (NOI) by deducting operating expenses from operating revenues of the properties. The benchmark for classifying anything as operating revenues or expenses is whether they are directly related to the physical existence/operations of the property, like base rents (excluding any fit out rents earned from the interior fit-outs provided to tenants), revenue and expenses of Common Area Maintenance (CAM) services, property tax, insurance etc. The accounting/ financial reporting policy of REIT also define the NOI and it is prudent to align the estimation of NOI with their definition.
- Apart from the NOI, the cash flows for the operational, under construction and future development area are projected separately for the purpose of estimating and reporting valuation in accordance with the SEBI (REIT) Regulations, as they require reporting their values separately.
- The projected future cash flows from the property are based on existing lease terms for the operational area till the expiry of the leases or re-negotiation, whichever is earlier, following which, the lease terms are aligned with market rents achievable by the properties. For vacant area, under-construction area and future development area, the achievable market rent-led cash flows are projected factoring appropriate lease-up time frame for vacant/ under-construction/future development area. These cash flows are projected for a specific duration from the date of valuation capturing the growth in rental in the intervening period till it reaches a stabilised level. Thereafter. one year forward NOI (i.e., NOI of the 11th year if projections are for 10 years) is capitalized for estimation of the terminal value, to be included in the projected cash flows. These future cash flows are then discounted to present-day value (valuation date) at an appropriate discount rate.

  Each of the lease are typically assessed in the following manner:

Step 1	Rental income from existing tenants up to the period of lease expiry, lock-in expiry, escalation milestones, etc. is projected whichever is applicable. In the event of any vacant spaces, achievable market-rent is assumed for future income for such spaces with suitable time for leasing up the space. This data is then used to generate market aligned revenue stream from existing and potential tenants for the desired time period.
Step 2	In the event the escalated contracted rent is higher than the achievable market rent beyond any acceptable threshold[1], the contracted terms are ignored, and the terms are reverted to market. In the event the escalated contracted rent is below the acceptable threshold of the achievable market rent, the contracted terms are adopted going forward until the next lease review/ renewal. Intent of this step is to project the rental income for respective leases until lease expiry as well as post expiry.

Step 3	Computing the monthly rental income projected as part of Step 2 and translating the same to a quarterly income for the period projections are made, with NOI of one more year considered for estimation of terminal value.

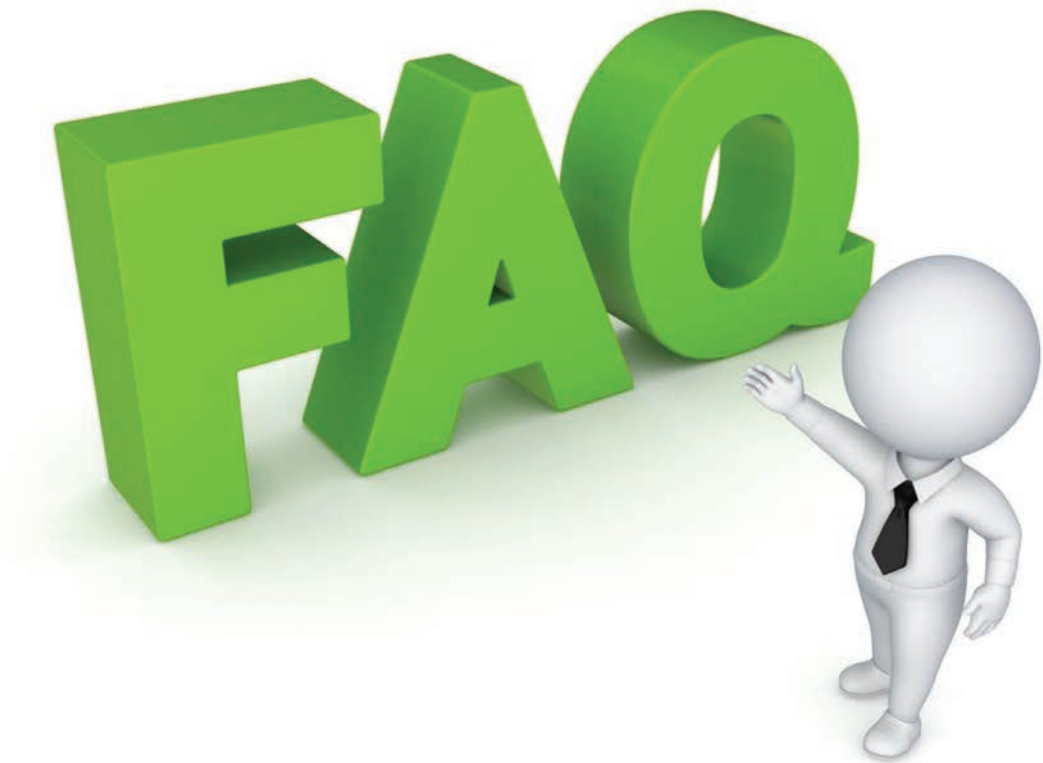
Recurring operational expenses, fit-out income, wherever applicable, (however, the same are not included in the NOI for the purpose of arriving at the terminal value by capitalisation) and vacancy provision are adopted in-line with prevalent market practices and conditions. In addition, appropriate rent-free periods are adopted during lease roll-overs to consider potential rent-free terms as well as outflows towards brokerage. Operational revenues and expenses of the respective properties are reviewed to understand the recurring, non-recurring, recoverable and non-recoverable expenses and accordingly estimate the margins on the CAM revenue, which accrues as cash inflows to the properties and normalised for the purpose of cash flow projections.

6. Conclusion

As evident above, beyond the techniques and arithmetic of deriving the value from the expected cash flows to be generated by the properties, it is the commercial judgement of the Valuer, which is the cornerstone of the reliability and objectivity of the valuation estimation. Since, it is a matter of judgement, it is prudent for the valuer to document the information relied upon to arrive at the critical assumptions made and consider carefully the risks associated with them. These assumptions along with any limitations should also be consistent with the objective of the valuation exercise given the fiduciary responsibility the valuer has while undertaking the valuation for publicly listed real estate assets.

[1] *And this threshold needs to be based on the prevailing market dynamics and general commercial considerations of market participants*

FREQUENTLY ASKED QUESTIONS ON VALUATION



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FREQUENTLY ASKED QUESTIONS ON VALUATION

1. Explain treatment of non-operating assets and inter-company investments. ?

Apart from operating assets, entities hold non-operating assets. Such assets should be valued based on their realisable values net of costs and outgoes and added to the value arrived under the various approaches to derive the value for ownership interest. Inter-company adjustments or substantial cross holdings between companies in the business valuations should be considered at fair value.

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3. Whether an intangible asset grants any right to its owner?

An intangible asset grants economic rights or benefits to its owner andcan be identified and differentiated primarily on the basis of its ownership and utility. Intangible assets lack physical properties and represent legal rights developed or acquired by an owner.

4.Give some examples of Intangible Assets.

Common examples of items of intangible assets are computer software, patents, copyrights, trademark, brands, motion picture films, customer lists/contracts, mortgage servicing rights, franchises, marketing rights, non-competition agreements, internet domain names, distribution network, literary works/ musical works, telecom licenses, gaming platforms, trade design, licensing arrangements,royalty agreements, employment contracts, trade secrets, processes, designs, formulae, etc. Intangible assets may be transferable, i.e.intangible assets can be bought, sold, rented, etc.

5. In what circumstances an intangible asset is identifiable?

An intangible asset is identifiable if it either:

(a) is separable, i.e. is capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable asset or liability, regardless of whether the entity intends to do so; or

(b) arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

6. Give some examples of the areas where intangible assets are required to be valued.

Certain areas where intangible assets are required to be valued are as follows:

(b) purchase price allocation for accounting and financial reporting under Ind AS 103 *Business Combination;*

(c) impairment testing under Ind AS 36 *Impairment of Assets;*

d) transfer pricing when an intangible asset is being transferred/ licensed in/out between geographies/ companies;

(e) taxation by way of a purchase price allocation for claiming tax deductions when a business is transferred by a slump sale;

(f) transaction (merger & acquisition) when the subject is the intangible itself, such as a brand/ telecom license or for carrying out a pre-deal purchase price allocation to assess the impact of the deal on financials;

(g) financing, when an intangible is used as collateral;

(h) litigation, when there has been a breach of contract/right and the compensation has to be determined;

(i) bankruptcy / restructuring, etc;

(j) insurance, such as determining the personal worth of a celebrity/ football franchise/cricket franchise; or

(k) issuance of sweat equity shares which are generally issued against technical knowhow/ technical expertise/intellectual property.

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(k) issuance of sweat equity shares which are generally issued against technical knowhow/ technical expertise/intellectual property.

8. Define Goodwill.

Goodwill is defined as an asset representing the future economic benefits arising from a business, business interest or a group of assets, which has not been separately recognised in another asset. Goodwill is the difference between the cost of the business combination and the acquirer's interest in the net fair value of theidentifiable assets, liabilities and provisions for contingent liabilities. In other words, goodwill is the residual amount after ascribing values to identified intangible assets, other assets and liabilities. Goodwill can be transferable or non-transferable.

9. What are the broad categories in which Intangible Assets can be classified?

Intangible assets can generally be classified under the following broad categories (not intended to be exhaustive):

(a) Customer-based intangible assets;

(b) Marketing-based intangible assets;

(c) Contract-based intangible assets;

(d) Technology-based intangible assets; or

(e) Artistic-based intangible assets.

10.Define Customer-based intangible assets and give some examples.

Customer-based intangible assets are created with an entity establishing relationships with its customers in the due course of its business. Such intangibles may be contractual or non-contractual. The examples of customer-based intangible assets are:

(a) customer contracts;

(b) customer relationships;

(c) order backlog; or

(d) customer lists.

11.Define Marketing-based intangible assets and give some examples.

Marketing-based intangible assets are created with the evolvement of a business and such intangibles are also used for further growth of the business through marketing. The examples of marketing-based intangible assets are:

(a) trademark;

(b) brand;

(c) trade name;

(d) internet domain name; or

(e) trade design.

12. Define Contract-based intangible assets and give some examples.

Contract-based intangible assets are created from rights arising from contracts in a business. The examples of contract-based intangible assets are:

(a) lease agreements;

(b) non-compete agreements;

(c) licensing agreements;

(d) royalty agreements; or

(e) employment contracts.

13.Define Technology-based intangible assets and give some examples.

Technology-based intangibles are those intangible assets that create propriety knowledge. The examples of contract-based intangible assets are:

(a) patents;

(b) know-how;

(c) trade secrets;

(d) copyrights;

(e) processes;

(f) software;

(g) designs; or

(h) formulae.

14. Define Artistic-based intangible assets and give some examples.

Artistic-based intangible assets are created from the benefit arising from artistic works. The examples of contract-based intangible assets are:

(a) films and music;

(b) books;

(c) plays; or

(d) copyright (non-contractual).

15.What are the significant considerations that shall be made while valuing an intangible asset?

The following other significant considerations shall be made for the valuation of intangible assets:

(a) to determine the purpose and objective of the overall valuation assignment;

(b) to consider the legal rights of the intangible asset to be valued, for example, a registered trademark may have a higher value as compared to an unregistered trademark. However, an unpatented technology (as not in public domain) may have a higher value than a patented technology;

(c) to evaluate the highest and best use considerations;

(d) to assess the history and development of the intangible asset; or

(e) to consider any specific laws or regulations guiding the intangible asset valuation in the country, for example, royalty payments in India are regulated.

16. What are the discount rates used under the Valuation of the

FREQUENTLY ASKED QUESTIONS ON VALUATION

Intangible assets?

The following discount rates are most commonly used:

• weighted average cost of capital (WACC) of the company or market participants;

• cost of equity for the company using the intangible assets or the participants;

• cost of debt having maturity similar to the economic life of the intangible asset to be valued;

• risk-free interest rates which have a maturity similar to the economic life of the intangible asset to be valued; or

• internal rate of return of the transaction for the particular intangible asset.

17. Define Price/Valuation multiples/Capitalisation rates method under market approach for valuation of intangible assets.

This method considers certain multiples/ capitalisation rates to arrive at the valuation of a comparable intangible asset. The multiples shall be adjusted appropriately to factor in any differences between the intangible asset to be valued and comparable intangible asset.

18. Define Guideline Pricing method under market approach for valuation of intangible assets.

This method determines the value of an intangible asset by considering the price paid in an orderly transaction for a comparable intangible asset (called as the guideline intangible asset which is similar to the intangible asset to be valued). However, in most instances, it may be difficult to obtain reliable data in the form of a public transaction, valuation multiple or a guideline intangible asset.

19.What are contributory Assets?

Contributory assets are assets that assist/support the intangible asset to be valued to generate cash flows and are used in combination with the intangible asset to be valued. Contributory asset charge (CAC) is widely used by the valuers and refers to the return on assets supporting the cash flow generation of the intangible asset to be valued. Contributory assets could be in the form of working capital, fixed assets, assembled workforce and any other intangible asset so considered and valued. An appropriate rate of return on each asset needs to be determined and shall be applied to the revenues to arrive at the CAC. The rate of return will depend on the nature of asset and is considered on post-tax basis.

20.What is Greenfield method?

The basic assumption for valuation using the Greenfield method is that the intangible asset to be valued is the only asset with all other tangible or intangible assets being created, leased or acquired.

Instead of the contributory asset charge generally deducted from the cash flows, a valuer is required to subtract replacement cost of the asset that is required to be built or bought.

The Greenfield method is usually used to value franchise agreements and certain licenses.

21.What is Distributor Method?

This is a variation of MEEM and is adopted for valuation of customerbased intangible assets when MEEM is applied to value another intangible asset (considered to be more significant). The fundamental assumption used in this method is that cash flows of each segment of a particular business are expected to generate profits.

22.What is adjusted present value?

It is the net present value of a project if financed solely by ownership equity and other financial instruments plus the present value of all the benefits of financing.

23.What is the method for calculating the APV?

The first step in calculating an APV is to calculate a base NPV using the cost of equity as the discount rate. This may be the same as the company's cost of equity. In some cases, it may be necessary to recalculate it by estimating a Beta and using CAPM.

After the calculation of base NPV, the NPV of each set of cash flows is calculated that results from financing. These can be discounted either at the cost of debt or at a higher rate that reflects uncertainties about the tax effects.

Then, the NPV of the tax effects is then added to the base NPV. Along with it, if there are other effects of financing, then these are also added or subtracted, and the end result is the APV.

24.What is present value?

Present value is an integral tool used in the income approach to link future amounts (e.g., cash flows or values) to a present amount using a discount rate.

25.What are the types of financial ratios most commonly used in the financial analysis and valuation of business?

There are mainly four types of common ratios that are used to analyse a business such as:

• **Liquidity Ratios –** It measures the ability of a business to meet the short term obligations.

• **Activity Ratios –** It helps in the assessment of efficiency of manager's actions.

• **Valuation & Growth Ratios –** These two measure the growth of a business and check its sustainability.

INTERNATIONAL VALUATION STANDARDS (IVS)

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INTERNATIONAL VALUATION STANDARDS (IVS)

IVS 400 REAL PROPERTY INTERESTS

10. Overview

10.1. The principles contained in the General Standards apply to *valuation*s of real property interests. This standard contains additional requirements for *valuations* of real property interests.

20. Introduction

20.1. Property interests are normally defined by state or the law of individual *jurisdictions* and are often regulated by national or local legislation. Before undertaking a *valuation* of a real property interest, a *valuer must* understand the relevant legal framework that affects the interest being valued.

20.2. A real property interest is a right of ownership, control, use or occupation of land and buildings. There are three main types of interest:

(a) the superior interest in any defined area of land. The owner of this interest has an absolute right of possession and control of the land and any buildings upon it in perpetuity, subject only to any subordinate interests and any statutory or other legally enforceable constraints,

(b) a subordinate interest that normally gives the holder rights of exclusive possession and control of a defined area of land or buildings for a defined period, eg, under the terms of a lease contract, and/or

(c) a right to use land or buildings but without a right of exclusive possession or control, eg, a right to pass over land or to use it only for a specified activity.

20.3. Intangible *assets* fall outside the classification of real property *assets*. However, an intangible *asset may* be associated with, and have a material impact on, the *value* of real property *assets*. It is therefore essential to be clear in the scope of work precisely what the valuation assignment is to include or exclude. For example, the *valuation* of a hotel can be inextricably linked to the hotel brand. In such cases, the valuation process will involve consideration of the inclusion of intangible *assets* and their impact on the *valuation* of the real property and plant and equipment *assets*. When there is an intangible *asset* component, the *valuer should* also follow IVS 210 *Intangible Assets*.

20.4. Although different words and terms are used to describe these types of real property interest in different *jurisdictions*, the concepts of an unlimited absolute right of ownership, an exclusive interest for a limited period or a non-exclusive right for a specified *purpose* are common to most. The immovability of land and buildings means that it is the right that a party holds that is transferred in an exchange, not the physical land and buildings. The *value*, therefore, attaches to the legal interest rather than to the physical land and buildings.

20.5. To comply with the requirement to identify the *asset* to be valued in IVS 101*Scope of Work*, para 20.3.(d) the following matters *must* be included:

(a) a description of the real property interest to be valued, and

(b) identification of any superior or subordinate interests that affect the interest to be valued.

20.6. To comply with the requirements to state the extent of the investigation and the nature and source of the information to be relied upon in IVS 101 *Scope of Work*, para 20.3.(j) and IVS 102 *Investigations and Compliance*, the following matters *must* be considered:

(a) the evidence required to verify the real property interest and any relevant related interests,

(b) the extent of any inspection,

(c) responsibility for information on the site area and any building floor areas,

(d) responsibility for confirming the specification and condition of any building,

(e) the extent of investigation into the nature, specification and adequacy of services,

(f) the existence of any information on ground and foundation conditions,

(g) responsibility for the identification of actual or potential environmental risks,

(h) legal permissions or restrictions on the use of the property and any buildings, as well as any expected or potential changes to legal permissions and restrictions.

20.7. Typical examples of special assumptions that *may* need to be agreed and confirmed in order to comply with IVS 101 *Scope of Work*, para 20.3. (k) include:

(a) that a defined physical change had occurred, eg, a proposed building is valued as if complete at the valuation date,

(b) that there had been a change in the status of the property, eg, a vacant building had been leased or a leased building had become vacant at the valuation date,

(c) that the interest is being valued without taking into account other existing interests, and

(d) that the property is free from contamination or other environmental risks.

20.8. *Valuation*s of real property interests are often required for different *purposes* including secured lending, sales and purchases, taxation, litigation, compensation, insolvency proceedings and financial reporting.

30. Bases of Value

30.1. In accordance with IVS 104 *Bases of Value*, a *valuer must* select the appropriate basis(es) of value when valuing real property interests.

30.2. Under most bases of value, a *valuer must* consider the highest and

best use of the real property, which *may* differ from its current use (see IVS 104. *Bases of Value*, para 30.3). This assessment is particularly important to real property interests which can be changed from one use to another or that have development potential.

40. Valuation Approaches and Methods

40.1. The three valuation approaches described in the IVS 105 *Valuation Approaches and Methods* can all be applicable for the *valuation* of a real property interest.

40.2. When selecting an approach and method, in addition to the requirements of this standard, a *valuer must* follow the requirements of IVS 105 *Valuation Approaches and Methods*, including para 10.3 and 10.4.

50. Market Approach

50.1. Property interests are generally heterogeneous (ie, with different characteristics). Even if the land and buildings have identical physical characteristics to others being exchanged in the market, the location will be different. Notwithstanding these dissimilarities, the market approach is commonly applied for the *valuation* of real property interests.

50.2. In order to compare the subject of the *valuation* with the price of other real property interests, *valuers should* adopt generally accepted and appropriate units of comparison that are considered by *participants*, dependent upon the type of *asset* being valued. Units of comparison that are commonly used include:

(a) price per square metre (or per square foot) of a building or per hectare for land,

(b) price per room, and

(c) price per unit of output, eg, crop yields.

50.3. A unit of comparison is only useful when it is consistently selected and applied to the subject property and the comparable properties in each analysis. To the extent possible, any unit of comparison used *should* be one commonly used by *participants* in the relevant market.

50.4. The reliance that can be applied to any comparable price data in the valuation process is determined by comparing various characteristics of the property and transaction from which the data was derived with the property being valued. Differences between the following *should* be considered in accordance with IVS 105 *Valuation Approaches and Methods*, para 30.8. Specific differences that *should* be considered in *valuing* real property interests include, but are not limited to:

(a) the type of interest providing the price evidence and the type of interest being valued,

(b) the respective locations,

(c) the respective quality of the land or the age and specification of the buildings,

(d) the permitted use or zoning at each property,

(e) the circumstances under which the price was determined and the basis of value required,

(f) the effective date of the price evidence and the valuation date, and

(g) market conditions at the time of the relevant transactions and how they differ from conditions at the valuation date.

60. Income Approach

60.1. Various methods are used to indicate *value* under the general heading of the income approach, all of which share the common characteristic that the *value* is based upon an actual or estimated income that either is, or could be, generated by an owner of the interest. In the case of an investment property, that income could be in the form of rent (see paras 90.1-90.3); in an owner-occupied building, it could be an assumed rent (or rent saved) based on what it would cost the owner to lease equivalent space.

60.2. For some real property interests, the income-generating ability of the property is closely tied to a particular use or business/trading activity (for example, hotels, golf courses, etc). Where a building is suitable for only a particular type of trading activity, the income is often related to the actual or potential cash flows that would accrue to the owner of that building from the trading activity. The use of a property's trading potential to indicate its *value* is often referred to as the "profits method".

60.3. When the income used in the income approach represents cash flow from a business/trading activity (rather than cash flow related to rent, maintenance and other real property-specific costs), the *valuer should* also comply as appropriate with the requirements of IVS 200 *Business and Business Interests* and, where applicable, IVS 210 *Intangible Assets*.

60.4. For real property interests, various forms of discounted cash flow models *may* be used. These vary in detail but share the basic characteristic that the cash flow for a defined future period is adjusted to a present value using a discount rate. The sum of the present day values for the individual periods represents an estimate of the capital value. The discount rate in a discounted cash flow model will be based on the time cost of money and the risks and rewards of the income stream in question.

60.5. Further information on the derivation of discount rates is included in IVS 105 *Valuation Approaches and Methods*, paras 50.29-50.31. The development of a yield or discount rate *should* be influenced by the objective of the *valuation*. For example:

(a) if the objective of the *valuation* is to establish the *value* to a particular owner or potential owner based on their own investment criteria, the rate

used *may* reflect their required rate of return or their *weighted* average cost of capital, and

(b) if the objective of the *valuation* is to establish the market value, the discount rate *may* be derived from observation of the returns implicit in the price paid for real property interests traded in the market between *participants* or from hypothetical *participants'* required rates or return. When a discount rate is based on an analysis of market transactions, *valuers should* also follow the guidance contained in IVS 105 *Valuation Approaches and Methods*, paras 30.7 and 30.8.

60.6. An appropriate discount rate *may* also be built up from a typical "risk-free" return adjusted for the additional risks and opportunities specific to the particular real property interest.

70. Cost Approach

70.1. In applying the cost approach, *valuers must* follow the guidance contained in IVS 105 *Valuation Approaches and Methods*, paras 70.1-70.14.

70.2. This approach is generally applied to the *valuation* of real property interests through the depreciated replacement cost method.

70.3. It *may* be used as the primary approach when there is either no evidence of transaction prices for similar property or no identifiable actual or notional income stream that would accrue to the owner of the relevant interest.

70.4. In some cases, even when evidence of market transaction prices or an identifiable income stream is available, the cost approach *may* be used as a secondary or corroborating approach.

70.5. The first step requires a replacement cost to be calculated. This is normally the cost of replacing the property with a modern equivalent at the relevant *valuation* date. An exception is where an equivalent property would need to be a replica of the subject property in order to provide a *participant* with the same utility, in which case the replacement cost would be that of reproducing or replicating the subject building rather than replacing it with a modern equivalent. The replacement cost *must* reflect all incidental costs, as appropriate, such as the *value* of the land, infrastructure, design fees, finance costs and developer profit that would be incurred by a *participant* in creating an equivalent *asset.*

70.6. The cost of the modern equivalent *must* then, as appropriate, be subject to adjustment for physical, functional, technological and economic obsolescence (see IVS 105 *Valuation Approaches and Methods*, section 80). The objective of an adjustment for obsolescence is to estimate how much less valuable the subject property might, or would be, to a potential buyer than the modern equivalent. Obsolescence considers the physical condition, functionality and economic utility of the subject property compared to the modern equivalent.

80. Special Considerations for Real Property Interests

80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of real property interests.

(a) Hierarchy of Interests (section 90).

(b) Rent (section 100).

90. Hierarchy of Interests

90.1. The different types of real property interests are not mutually exclusive. For example, a superior interest *may* be subject to one or more subordinate interests. The owner of the absolute interest *may* grant a lease interest in respect of part or all of his interest. Lease interests granted directly by the owner of the absolute interest are "head lease" interests. Unless prohibited by the terms of the lease contract, the holder of a head lease interest can grant a lease of part or all of that interest to a third party, which is known as a sub-lease interest. A sub-lease interest will always be shorter than, or coterminous with, the head lease out of which it is created.

90.2. These property interests will have their own characteristics, as illustrated in the following examples:

(a) Although an absolute interest provides outright ownership in perpetuity, it *may* be subject to the effect of subordinate interests. These subordinate interests could include leases, restrictions imposed by a previous owner or restrictions imposed by statute.

(b) A lease interest will be for a defined period, at the end of which the property reverts to the holder of the superior interest out of which it was created. The lease contract will normally impose obligations on the lessee, eg, the payment of rent and other expenses. It *may* also impose conditions or restrictions, such as in the way the property *may* be used or on any transfer of the interest to a third party.

(c) A right of use *may* be held in perpetuity or *may* be for a defined period. The right *may* be dependent on the holder making payments or complying with certain other conditions.

90.3. When valuing a real property interest it is therefore necessary to identify the nature of the rights accruing to the holder of that interest and reflect any constraints or encumbrances imposed by the existence of other interests in the same property. The sum of the individual *values* of various different interests in the same property will frequently differ from the *value* of the unencumbered superior interest.

INTERNATIONAL VALUATION STANDARDS (IVS)

100. Rent

100.1. Market rent is addressed as a basis of value in IVS 104 *Bases of Value.*

100.2. When *valuing* either a superior interest that is subject to a lease or an interest created by a lease, *valuers must* consider the contract rent and, in cases where it is different, the market rent.

100.3. The contract rent is the rent payable under the terms of an actual lease. It *may* be fixed for the duration of the lease or variable. The frequency and basis of calculating variations in the rent will be set out in the lease and *must* be identified and understood in order to establish the total benefits accruing to the lessor and the liability of the lessee.

IVS 410 DEVELOPMENT PROPERTY

10. Overview

10.1. The principles contained in the General Standards IVS 101 to IVS 105 apply to *valuations* of development property. This standard only includes modifications, additional requirements or specific examples of how the General Standards apply for *valuations* to which this standard applies. *Valuations* of development property *must* also follow IVS 400 *Real Property Interests*.

20. Introduction

20.1. In the context of this standard, development properties are defined as interests where redevelopment is required to achieve the highest and best use, or where improvements are either being contemplated or are in progress at the valuation date and include:

(a) the construction of buildings,

(b) previously undeveloped land which is being provided with infrastructure,

(c) the redevelopment of previously developed land,

(d) the improvement or alteration of existing buildings or structures,

(e) land allocated for development in a statutory plan, and

(f) land allocated for a higher *value* uses or higher density in a statutory plan.

20.2. *Valuations* of development property *may* be required for different *purposes*. It is the *valuer's* responsibility to understand the *purpose* of a *valuation*. A non-exhaustive list of examples of circumstances that *may* require a development valuation is provided below:

(a) when establishing whether proposed projects are financially feasible,

(b) as part of general consulting and transactional support engagements for acquisition and loan security,

(c) for tax reporting *purposes*, development valuations are frequently needed for ad valorem taxation analyses,

(d) for litigation requiring valuation analysis in circumstances such as shareholder disputes and damage calculations,

(e) for financial reporting *purposes*, *valuation* of a development property is often required in connection with accounting for business combinations, *asset* acquisitions and sales, and impairment analysis, and

(f) for other statutory or legal events that *may* require the *valuation* of development property such as compulsory purchases.

20.3. When *valuing* development property, *valuers must* follow the applicable standard for that type of *asset* or liability (for example, IVS 400 *Real Property Interests*).

20.4. The residual *value* or land *value* of a development property can be very sensitive to changes in assumptions or projections concerning the income or revenue to be derived from the completed project or any of the development costs that will be incurred. This remains the case regardless of the method or methods used or however diligently the various inputs are researched in relation to the valuation date.

20.5. This sensitivity also applies to the impact of *significant* changes in either the costs of the project or the *value* on completion. If the *valuation* is required for a *purpose* where *significant* changes in *value* over the duration of a construction project *may* be of concern to the user (eg, where the *valuation* is for loan security or to establish a project's viability), the *valuer must* highlight the potentially disproportionate effect of possible changes in either the construction costs or end value on the profitability of the project and the *value* of the partially completed property. A sensitivity analysis *may* be useful for this *purpose* provided it is accompanied by a suitable explanation.

30. Bases of Value

30.1. In accordance with IVS 104 *Bases of Value*, a *valuer must* select the appropriate basis(es) of value when *valuing* development property.

30.2. The *valuation* of development property often includes a *significant* number of assumptions and special assumptions regarding the condition or status of the project when complete. For example, special assumptions *may* be made that the development has been completed or that the property is fully leased. As required by IVS 101 *Scope of Work*, *significant* assumptions and special assumptions used in a *valuation must* be communicated to all parties

to the valuation engagement and *must* be agreed and confirmed in the scope of work. Particular care *may* also be required where reliance *may* be placed by third parties on the valuation outcome.

30.3. Frequently it will be either impracticable or impossible to verify every feature of a development property which could have an impact on potential future development, such as where ground conditions have yet to be investigated. When this is the case, it *may* be appropriate to make assumptions (eg, that there are no abnormal ground conditions that would result in *significant*ly increased costs). If this was an assumption that a *participant* would not make, it would need to be presented as a special assumption.

30.4. In situations where there has been a change in the market since a project was originally conceived, a project under construction *may* no longer represent the highest and best use of the land. In such cases, the costs to complete the project originally proposed *may* be irrelevant as a buyer in the market would either demolish any partially completed structures or adapt them for an alternative project. The *value* of the development property under construction would need to reflect the current value of the alternative project and the costs and risks associated with completing that project.

30.5. For some development properties, the property is closely tied to a particular use or business/ trading activity or a special assumption is made that the completed property will trade at specified and sustainable levels. In such cases, the *valuer must*, as appropriate, also comply with the requirements of IVS 200 *Business and Business Interests* and, where applicable, IVS 210 *Intangible Assets*.

40. Valuation Approaches and Methods

40.1. The three principal valuation approaches described in IVS 105 *Valuation Approaches and Methods* *may* all be applicable for the *valuation* of a real property interest. There are two main approaches in relation to the *valuation* of the development property. These are:

(a) the market approach (see section 50), and

(b) the residual method, which is a hybrid of the market approach, the income approach and the cost approach (see sections 40-70). This is based on the completed "gross development value" and the deduction of development costs and the developer's return to arrive at the residual *value* of the development property (see section 90).

40.2. When selecting an approach and method, in addition to the requirements of this standard, a *valuer must* follow the requirements of IVS 105 *Valuation Approaches and Methods*, including para 10.3.

40.3. The valuation approach to be used will depend on the required basis of value as well as specific facts and circumstances, eg, the level of recent transactions, the stage of development of the project and movements in property markets since the project started, and *should* always be that which is most appropriate to those circumstances. Therefore, the exercise of judgement in the selection of the most suitable approach is critical.

50. Market Approach

50.1. Some types of development property can be sufficiently homogenous and frequently exchanged in a market for there to be sufficient data from recent sales to use as a direct comparison where a *valuation* is required.

50.2. In most markets, the market approach *may* have limitations for larger or more complex development property, or smaller properties where the proposed improvements are heterogeneous. This is because the number and extent of the variables between different properties make direct comparisons of all variables inapplicable though correctly adjusted market evidence (See IVS 105 *Valuation Approaches and Methods*, section 20.5) *may* be used as the basis for a number of variables within the *valuation.*

50.3. For development property where work on the improvements has commenced but is incomplete, the application of the market approach is even more problematic. Such properties are rarely transferred between *participants* in their partially-completed state, except as either part of a transfer of the owning entity or where the seller is either insolvent or facing insolvency and therefore unable to complete the project. Even in the unlikely event of there being evidence of a transfer of another partially-completed development property close to the *valuation* date, the degree to which work has been completed would almost certainly differ, even if the properties were otherwise similar.

50.4. The market approach *may* also be appropriate for establishing the *value* of a completed property as one of the inputs required under the residual method, which is explained more fully in the section on the residual method (section 90).

60. Income Approach

60.1. Establishing the residual value of a development property *may* involve the use of a cash flow model in some markets.

60.2. The income approach *may* also be appropriate for establishing the *value* of a completed property as one of the inputs required under the residual method, which is explained more fully in the section on the residual method (see section 90).

70. Cost Approach

70.1. Establishing the development costs is a key component of the residual approach (see para 90.5).

70.2. The cost approach *may* also exclusively be used as a means of indicating the *value* of development property such as a proposed development of a building or other structure for which there is no active market on completion.

70.3. The cost approach is based on the economic principle that a buyer will pay no more for an *asset* than the amount to create an *asset* of equal utility. To apply this principle to development property, the *valuer must* consider the cost that a prospective buyer would incur in acquiring a similar *asset* with the potential to earn a similar profit from development as could be obtained from development of the subject property. However, unless there are unusual circumstances affecting the subject development property, the process of analysing a proposed development and determining the anticipated costs for a hypothetical alternative would effectively replicate either the market approach or the residual method as described above, which can be applied directly to the subject property.

70.4. Another difficulty in applying the cost approach to development property is in determining the profit level, which is its "utility" to a prospective buyer. Although a developer *may* have a target profit at the commencement of a project, the actual profit is normally determined by the *value* of the property at completion. Moreover, as the property approaches completion, some of the risks associated with development are likely to reduce, which *may* impact on the required return of a buyer. Unless a fixed price has been agreed, profit is not determined by the costs incurred in acquiring the land and undertaking the improvements.

80. Special Considerations for a Development Property

80.1. The following sections address a non-exhaustive list of topics relevant to the *valuation* of development property:

(a) Residual Method (section 90)

(b) Existing *Asset* (section 100).

(c) Special Considerations for Financial Reporting (section 110).

(d) Special Considerations for Secured Lending (section 120).

90. Residual Method

90.1. The residual method is so called because it indicates the residual amount after deducting all known or anticipated costs required to complete the development from the anticipated value of the project when completed after consideration of the risks associated with completion of the project. This is known as the residual value.

90.2. The residual value can be highly sensitive to relatively small changes in the forecast cash flows and the practitioner *should* provide separate sensitivity analyses for each *significant* factor.

90.3. Caution is required in the use of this method because of the sensitivity of the result to changes in many of the inputs, which *may* not be precisely known on the valuation date, and therefore have to be estimated with the use of assumptions.

90.4. The models used to apply the residual method vary considerably in complexity and sophistication, with the more complex models allowing for greater granularity of inputs, multiple development phases and sophisticated analytical tools. The most suitable model will depend on the size, duration and complexity of the proposed development.

90.5. In applying the residual method, a *valuer should* consider and evaluate the reasonableness and reliability of the following:

(a) the source of information on any proposed building or structure, eg, any plans and specification that are to be relied on in the *valuation*, and

(b) any source of information on the construction and other costs that will be incurred in completing the project and which will be used in the *valuation.*

90.6. The following basic elements require consideration in any application of the method to estimate the market value of development property and if another basis is required, alternative inputs *may* be required.

(a) Completed property value,

(b) Construction costs,

(c) Consultants fees,

(d) Marketing costs,

(e) Timetable,

(f) Finance costs,

(g) Development profit,

(h) Discount rate.

Value of Completed Property

90.7. The first step requires an estimate of the *value* of the relevant interest in the real property following notional completion of the development project, which *should* be developed in accordance with IVS 105 *Valuation Methods and Approaches.*

90.8. Regardless of the methods adopted under either the market or income approach, the *valuer must* adopt one of the two basic underlying assumptions:

(a) the estimated market value on completion is based on *values* that are current on the valuation date on the special assumption the project had already been completed in accordance with the defined plans and specification, or

(b) the estimated value on completion is based on the special assumption that the project is completed in accordance

with the defined plans and specification on the anticipated date of completion.

90.9.Market practice and availability of relevant data *should* determine which of these assumptions is more appropriate. However, it is important that there is clarity as to whether current or projected values are being used.

90.10. If estimated gross development *value* is used, it *should* be made clear that these are based on special assumptions that a *participant* would make based on information available on the valuation date.

90.11. It is also important that care is taken to ensure that consistent assumptions are used throughout the residual value calculation, ie, if current *values* are used then the costs *should* also be current and discount rates derived from analysis of current prices.

90.12. If there is a pre-sale or pre-lease agreement in place that is conditional on the project, or a relevant part, being completed, this will be reflected in the *valuation* of the completed property. Care *should* be taken to establish whether the price in a pre-sale agreement or the rent and other terms in a pre-lease agreement reflect those that would be agreed between *participants* on the valuation date.

90.13. If the terms are not reflective of the market, adjustments *may* need to be made to the *valuation.*

90.14. It would also be appropriate to establish if these agreements would be assignable to a purchaser of the relevant interest in the development property prior to the completion of the project.

Construction Costs

90.15. The costs of all work required at the valuation date to complete the project to the defined specification need to be identified. Where no work has started, this will include any preparatory work required prior to the main building contract, such as the costs of obtaining statutory permissions, demolition or off-site enabling work.

90.16. Where work has commenced, or is about to commence, there will normally be a contract or contracts in place that can provide the independent confirmation of cost. However, if there are no contracts in place, or if the actual contract costs are not typical of those that would be agreed in the market on the valuation date, then it *may* be necessary to estimate these costs reflecting the reasonable expectation of *participants* on the valuation date of the probable costs.

90.17. The benefit of any work carried out prior to the valuation date will be reflected in the *value,* but will not determine that *value.* Similarly, previous payments under the actual building contract for work completed prior to the valuation date are not relevant to current value.

90.18. In contrast, if payments under a building contract are geared to the work completed, the sums remaining to be paid for work not yet undertaken at the valuation date *may* be the best evidence of the construction costs required to complete the work.

90.19. However, contractual costs *may* include special requirements of a specific end user and therefore *may* not reflect the general requirements of *participants.*

90.20. Moreover, if there is a material risk that the contract *may* not be fulfilled, (eg, due to a dispute or insolvency of one of the parties), it *may* be more appropriate to reflect the cost of engaging a new contractor to complete the outstanding work.

90.21. When valuing a partly completed development property, it is not appropriate to rely solely on projected costs and income contained in any project plan or feasibility study produced at the commencement of the project.

90.22. Once the project has commenced, this is not a reliable tool for measuring *value* as the inputs will be historic. Likewise, an approach based on estimating the percentage of the project that has been completed prior to the valuation date is unlikely to be relevant in determining the current market value.

Consultants' Fees

90.23. These include legal and professional costs that would be reasonably incurred by a *participant* at various stages through the completion of the project.

Marketing Costs

90.24. If there is no identified buyer or lessee for the completed project, it will normally be appropriate to allow for the costs associated with appropriate marketing, and for any leasing commissions and consultants' fees incurred for marketing not included under para 90.23.

Timetable

90.25. The duration of the project from the valuation date to the expected date of physical completion of the project needs to be considered, together with the phasing of all cash outflows for construction costs, consultants' fees, etc

90.26. If there is no sale agreement in place for the relevant interest in the development property following practical completion, an estimate *should* be made of the marketing period that might typically be required following completion of construction until a sale is achieved.

90.27. If the property is to be held for investment after completion and if there are no pre-leasing agreements, the time required to reach stabilised occupancy needs to be considered (ie, the period required to reach a realistic long-term occupancy level). For a project where there will be individual letting units, the

stabilised occupancy levels *may* be less than 100 percent if market experience indicates that a number of units *may* be expected to always be vacant, and allowance *should* be considered for costs incurred by the owner during this period such as additional marketing costs, incentives, maintenance and/or unrecoverable service charges.

Finance Costs

90.28. These represent the cost of finance for the project from the valuation date through to the completion of the project, including any period required after physical completion to either sell the interest or achieve stabilised occupancy. As a lender *may* perceive the risks during construction to differ substantially from the risks following completion of construction, the finance cost during each period *may* also need to be considered separately. Even if an entity is intending to self-fund the project, an allowance *should* be made for interest at a rate which would be obtainable by a *participant* for borrowing to fund the completion of the project on the *valuation* date.

Development Profit

90.29. Allowance *should* be made for development profit, or the return that would be required by a buyer of the development property in the market place for taking on the risks associated with completion of the project on the valuation date. This will include the risks involved in achieving the anticipated income or capital value following physical completion of the project.

90.30. This target profit can be expressed as a lump sum, a percentage return on the costs incurred or a percentage of the anticipated value of the project on completion or a rate of return. Market practice for the type of property in question will normally indicate the most appropriate option. The amount of profit that would be required will reflect the level of risk that would be perceived by a prospective buyer on the valuation date and will vary according to factors such as:

(a) the stage which the project has reached on the valuation date. A project which is nearing completion will normally be viewed as being less risky than one at an early stage, with the exception of situations where a party to the development is insolvent,

(b) whether a buyer or lessee has been secured for the completed project, and

(c) the size and anticipated remaining duration of the project. The longer the project, the greater the risk caused by exposure to fluctuations in future costs and receipts and changing economic conditions generally.

90.31. The following are examples of factors that *may* typically need to be considered in an assessment of the relative risks associated with the completion of a development project:

(a) unforeseen complications that increase construction costs,

(b) potential for contract delays caused by adverse weather or other matters outside of developer's control,

(c) delays in obtaining statutory consents, (d) supplier failures,

(e) entitlement risk and changes in entitlements over the development period,

(f) regulatory changes, and

(g) delays in finding a buyer or lessee for the completed project.

90.32. Whilst all of the above factors will impact the perceived risk of a project and the profit that a buyer or the development property would require, care *must* be taken to avoid double counting, either where contingencies are already reflected in the residual valuation model or risks in the discount rate used to bring future cash flows to present value.

90.33. The risk of the estimated value of the completed development project changing due to changed market conditions over the duration of the project will normally be reflected in the discount rate or capitalisation rate used to value the completed project.

90.34. The profit anticipated by the owner of an interest in development property at the commencement of a development project will vary according to the *valuation* of its interest in the project once construction has commenced. The *valuation should* reflect those risks remaining at the valuation date and the discount or return that a buyer of the partially completed project would require for bringing it to a successful conclusion.

Discount Rate

90.35. In order to arrive at an indication of the *value* of the development property on the valuation date, the residual method requires the application of a discount rate to all future cash flows in order to arrive at a net present value. This discount rate *may* be derived using a variety of methods (see IVS 105

Valuation Approaches and Methods, paras 50.30-50.39.

90.36. If the cash flows are based on *values* and costs that are current on the valuation date, the risk of these changing between the valuation date and the anticipated completion date *should* be considered and reflected in the discount rate used to determine the present value. If the cash flows are based on prospective values and costs, the risk of those projections proving to be inaccurate *should* be considered and reflected in the discount rate.

100. Existing *Asset*

100.1. In the *valuation* of development property, it is necessary to establish the suitability of the real property in question for the proposed development. Some matters *may* be within the *valuer's* knowledge and experience but some *may* require information or reports from other specialists. Matters that typically

need to be considered for specific investigation when undertaking a *valuation* of a development property before a project commences include:

(a) whether or not there is a market for the proposed development,

(b) is the proposed development the highest and best use of the property in the current market,

(c) whether there are other non-financial obligations that need to be considered (political or social criteria),

(d) legal permissions or zoning, including any conditions or constraints on permitted development,

(e) limitations, encumbrances or conditions imposed on the relevant interest by private contract,

(f) rights of access to public highways or other public areas,

(g) geotechnical conditions, including potential for contamination or other environmental risks,

(h) the availability of, and requirements to, provide or improve necessary services, eg, water, drainage and power,

(i) the need for any off-site infrastructure improvements and the rights required to undertake this work,

(j) any archaeological constraints or the need for archaeological investigations,

(k) sustainability and any *client* requirements in relation to green buildings,

(l) economic conditions and trends and their potential impact on costs and receipts during the development period,

(m) current and projected supply and demand for the proposed future uses,

(n) the availability and cost of funding,

(o) the expected time required to deal with preparatory matters prior to starting work, for the completion of the work and, if appropriate, to rent or sell the completed property, and

(p) any other risks associated with the proposed development.

100.2. Where a project is in progress, additional enquires or investigations will typically be needed into the contracts in place for the design of the project, for its construction and for supervision of the construction.

110. Special Considerations for Financial Reporting

110.1. The accounting treatment of development property can vary depending on how it is classified by the reporting entity (eg, whether it is being held for sale, for owner occupation or as investment property). This *may* affect the valuation requirements and therefore the classification and the relevant accounting requirements need to be determined before selecting an appropriate valuation method.

110.2. Financial statements are normally produced on the assumption that the entity is a going concern. It is therefore normally appropriate to assume that any contracts (eg, for the construction of a development property or for its sale or leasing on completion), would pass to the buyer in the hypothetical exchange, even if those contracts *may* not be assignable in an actual exchange. An exception would be if there was evidence of an abnormal risk of default by a contracted party on the valuation date.

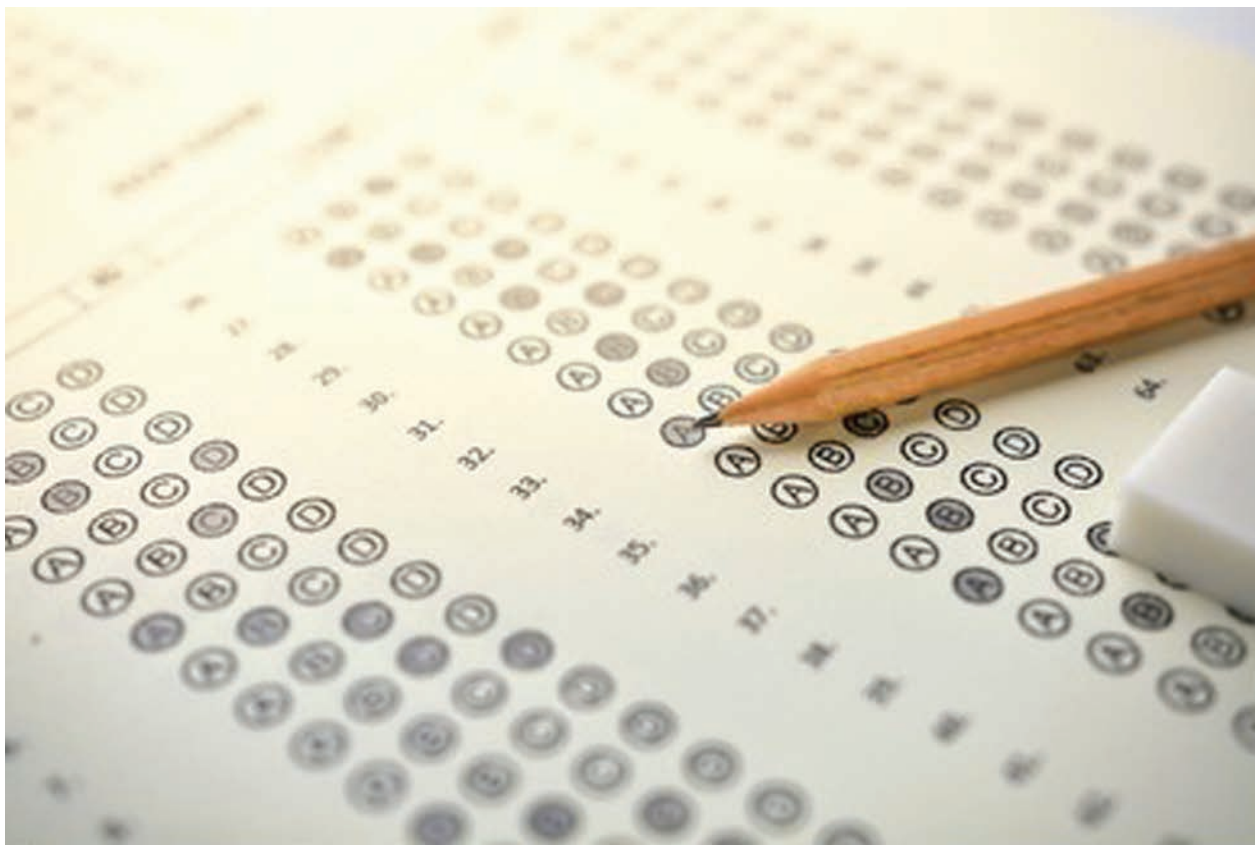
120. Special Considerations for Secured Lending

120.1. The appropriate basis of valuation for secured lending is normally market *value*. However, in considering the *value* of a development property, regard *should* be given to the probability that any contracts in place, eg, for construction or for the sale or leasing of the completed project *may*, become void or voidable in the event of one of the parties being the subject of formal insolvency proceedings. Further regard *should* be given to any contractual obligations that *may* have a material impact on market *value*. Therefore, it *may* be appropriate to highlight the risk to a lender caused by a prospective buyer of the property not having the benefit of existing building contracts and/or pre-leases, and pre-sales and any associated warrantees and guarantees in the event of a default by the borrower.

120.2. To demonstrate an appreciation of the risks involved in valuing development property for secured lending or other *purpose*s, the *valuer should* apply a minimum of two appropriate and recognised methods to valuing development property for each valuation project, as this is an area where there is often "insufficient factual or observable inputs for a single method to produce a reliable conclusion" (see IVS 105 *Valuation Approaches and Methods*, para 10.4).

120.3. The *valuer must* be able to justify the selection of the valuation approach(es) reported and *should* provide an "As Is" (existing stage of development) and an "As Proposed" (completed development) value for the development property and record the process undertaken and a rationale for the reported value (see IVS 103 *Reporting*, paras 30.1-30.2).

MULTIPLE CHOICE QUESTIONS



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MULTIPLE CHOICE QUESTIONS

1. When the stock price increases with all else remaining the same, which of the following is true?

A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Answer: C

Stock price increases cause the values of calls to increase and the values of puts to decline.

2. When the strike price increases with all else remaining the same, which of the following is true?

A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Answer: D

Strike price increases cause the values of puts to increase and the values of calls to decline.

3. When volatility increases with all else remaining the same, which of the following is true?

A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Answer: A

Volatility increases the likelihood of a high payoff from either a call or a put option. The payoff can never be negative. It follows that as volatility increases the value of all options increase.

4. When dividends increase with all else remaining the same, which of the following is true?

A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Answer: D

Dividends during the life of an option reduce the final stock price. As a result dividend increases cause puts to increase in value and calls to decrease in value.

5. When interest rates increase with all else remaining the same, which of the following is true?

A. Both calls and puts increase in value
B. Both calls and puts decrease in value
C. Calls increase in value while puts decrease in value
D. Puts increase in value while calls decrease in value

Answer: C

Calls increase and puts decrease in value. As explained in the text an increase in interest rates causes the growth rate of the stock price to increase and the discount rate to increase. An increase in interest rates therefore reduces the value of puts because puts are hurt by both a discount rate increase and a growth rate increase. For calls it turns out that the growth rate increase is more important than the discount rate increase so that their values increase when interest rates increase. (Note that we are assuming all else equal and so the asset price does not change.)

6. When the time to maturity increases with all else remaining the same, which of the following is true?

A. European options always increase in value
B. The value of European options either stays the same or increases
C. There is no effect on European option values
D. European options are liable to increase or decrease in value

Answer: D

When the time to maturity increases from X to Y, European options usually increase in value. But this is not always the case. For example, European call options can decrease in value if a big dividend is expected between X and Y.

7. The price of a stock, which pays no dividends, is $30 and the strike price of a one year European call option on the stock is $25. The risk-free rate is 4% (continuously compounded). Which of the following is a lower bound for the option such that there are arbitrage opportunities if the price is below the lower bound and no arbitrage opportunities if it is above the lower bound?

A. $5.00
B. $5.98
C. $4.98
D. $3.98

Answer: B

MULTIPLE CHOICE QUESTIONS

The lower bound in $S_0 - Ke^{-rT}$. In this case it is $30 - 25e^{-0.04\times1} = \$5.98$.

8. A stock price (which pays no dividends) is $50 and the strike price of a two year European put option is $54. The risk-free rate is 3% (continuously compounded). Which of the following is a lower bound for the option such that there are arbitrage opportunities if the price is below the lower bound and no arbitrage opportunities if it is above the lower bound?

A. $4.00
B. $3.86
C. $2.86
D. $0.86

Answer: D

The lower bound in $Ke^{-rT} - S_0$ In this case it is $54e^{-0.03\times2} - 50 = \$0.86$.

9. Which of the following is NOT true? (Present values are calculated from the end of the life of the option to the beginning.)

A. An American put option is always worth less than the present value of the strike price
B. A European put option is always worth less than the present value of the strike price
C. A European call option is always worth less than the stock price
D. An American call option is always worth less than the stock price

Answer: A

If it is optimal to exercise an American option today and the stock price is very low the option will be worth more than the present value of the strike price

10. Which of the following best describes the intrinsic value of an option?

A. The value it would have if the owner had to exercise it immediately or not at all
B. The Black-Scholes-Merton price of the option
C. The lower bound for the option's price
D. The amount paid for the option

Answer: A

The intrinsic value of an option is the value it would have if it were about the expire which is the same as the value in A.

11. Which of the following describes a situation where an American put option on a stock becomes more likely to be exercised early?

A. Expected dividends increase
B. Interest rates decrease
C. The stock price volatility decreases
D. All of the above

Answer: C

As the volatility of the option decreases the time value declines and the option becomes more likely to be exercised early. In the case of A and B, time value increases and the option is less likely to be exercised early.

12. Which of the following is true?

A. An American call option on a stock should never be exercised early
B. An American call option on a stock should never be exercised early when no dividends are expected
C. There is always some chance that an American call option on a stock will be exercised early
D. There is always some chance that an American call option on a stock will be exercised early when no dividends are expected

Answer: B

An American call option should never be exercised early when the underlying stock does not pay dividends. There are two reasons. First, it is best to delay paying the strike price. Second the insurance provided by the option (that the stock price will fall below the strike price) is lost.

13. Which of the following is the put-call parity result for a non-dividend-paying stock?

A. The European put price plus the European call price must equal the stock price plus the present value of the strike price
B. The European put price plus the present value of the strike price must equal the European call price plus the stock price
C. The European put price plus the stock price must equal the European call price plus the strike price
D. The European put price plus the stock price must equal the European call price plus the present value of the strike price

Answer: D

The put-call parity result is $c+Ke^{-rT}=p+S_0$.

14. Which of the following is true when dividends are expected?

A. Put-call parity does not hold
B. The basic put-call parity formula can be adjusted by subtracting the present value of expected dividends from the stock price
C. The basic put-call parity formula can be adjusted by adding the present value of expected dividends to the stock

MULTIPLE CHOICE QUESTIONS

price

D. The basic put-call parity formula can be adjusted by subtracting the dividend yield from the interest rate

Answer: B

Put call parity still holds for European options providing the present value of the dividends is subtracted from the stock price.

15. The price of a European call option on a non-dividend-paying stock with a strike price of $50 is $6. The stock price is $51, the continuously compounded risk-free rate (all maturities) is 6% and the time to maturity is one year. What is the price of a one-year European put option on the stock with a strike price of $50?

A. $9.91
B. $7.00
C. $6.00
D. $2.09

Answer: D

Put-call parity is $c+Ke^{-rT}=p+S_0$. In this case K=50, S_0=51, r=0.06, T=1, and c=6. It follows that

$p=6+50e^{-0.06\times1}-51 = 2.09$.

16. The price of a European call option on a stock with a strike price of $50 is $6. The stock price is $51, the continuously compounded risk-free rate (all maturities) is 6% and the time to maturity is one year. A dividend of $1 is expected in six months. What is the price of a one-year European put option on the stock with a strike price of $50?

A. $8.97
B. $6.97
C. $3.06
D. $1.12

Answer: C

Put-call parity is $c+Ke^{-rT}=p+S_0-D$. In this case K=50, S_0=51, r=0.06, T=1, and c=6. The present value of the dividend, D, is $1\times e^{-0.06\times0.5} = 0.97$. It follows that

$p=6+50e^{-0.06\times1}-(51-0.97) = 3.06$.

17. A European call and a European put on a stock have the same strike price and time to maturity. At 10:00am on a certain day, the price of the call is $3 and the price of the put is $4. At 10:01am news reaches the market that has no effect on the stock price or interest rates, but increases volatilities. As a result the price of the call changes to $4.50. Which of the following is correct?

A. The put price increases to $6.00
B. The put price decreases to $2.00
C. The put price increases to $5.50
D. It is possible that there is no effect on the put price

Answer: C

The price of the call has increased by $1.50. From put-call parity the price of the put must increase by the same amount. Hence the put price will become 4.00 +1.50 = $5.50.

18. Interest rates are zero. A European call with a strike price of $50 and a maturity of one year is worth $6. A European put with a strike price of $50 and a maturity of one year is worth $7. The current stock price is $49. Which of the following is true?

A. The call price is high relative to the put price
B. The put price is high relative to the call price
C. Both the call and put must be mispriced
D. None of the above

Answer: D

In this case because interest rates are zero $c+K=p+S_0$. The left side of this equation is 50+6=56. The right side is 49+7=56. There is no mispricing.

19. Which of the following is true for American options?

A. Put-call parity provides an upper and a lower bound for the difference between call and put prices
B. Put call parity provides an upper bound but no lower bound for the difference between call and put prices
C. Put call parity provides a lower bound but no upper bound for the difference between call and put prices
D. There are no put-call parity results

Answer: A

Put call parity provides both an upper and a lower bound for the difference between call and put prices. See equation (11.11).

20. Which of the following can be used to create a long position in a European put option on a stock?

A. Buy a call option on the stock and buy the stock
B. Buy a call on the stock and short the stock
C. Sell a call option on the stock and buy the stock
D. Sell a call option on the stock and sell the stock

Answer: B

As payoff diagrams show a call on a stock combined with a short position in the stock gives a payoff similar to a put option. Alternatively we can use put-call parity, which shows that a call minus the stock equals the put minus

MULTIPLE CHOICE QUESTIONS

the present value of the strike price.

21. The current price of a non-dividend-paying stock is $30. Over the next six months it is expected to rise to $36 or fall to $26. Assume the risk-free rate is zero. An investor sells six-month call options with a strike price of $32. Which of the following hedges the position?

A. Buy 0.6 shares for each call option sold
B. Buy 0.4 shares for each call option sold
C. Short 0.6 shares for each call option sold
D. Short 0.4 shares for each call option sold

Answer: B

The value of the option will be either $4 or zero. If Δ is the position in the stock we require 36Δ−4=26D

so that Δ=0.4. it follows that 0.4 shares should be purchased for each option sold.

22. The current price of a non-dividend-paying stock is $30. Over the next six months it is expected to rise to $36 or fall to $26. Assume the risk-free rate is zero. What is the risk-neutral probability of that the stock price will be $36?

A. 0.6
B. 0.5
C. 0.4
D. 0.3

Answer: C

The formula for the risk-neutral probability of an up movement is

$$p = \frac{e^{rT} - d}{u - d}$$

In this case u=36/30 or 1.2 and d=26/30 =0.8667. Also r=0 and T=0.5. The formula gives

p=(1-0.8667/(1.2-0.8667) =0.4.

23. The current price of a non-dividend-paying stock is $30. Over the next six months it is expected to rise to $36 or fall to $26. Assume the risk-free rate is zero. An investor sells call options with a strike price of $32. What is the value of each call option?

A. $1.6
B. $2.0
C. $2.4
D. $3.0

Answer: A

The formula for the risk-neutral probability of an up movement is

$$p = \frac{e^{rT} - d}{u - d}$$

In this case u=36/30 or 1.2 and d=26/30 =0.8667. Also r=0 and T=0.5. The formula gives

p=(1-0.8667/(1.2-0.8667) =0.4.

The payoff from the call option is $4 if there is an up movement and $0 if there is a down movement. The value of the option is therefore 0.4×4 +0.6×0 = $1.6. (We do not do any discounting because the interest rate is zero.)

24. The current price of a non-dividend-paying stock is $40. Over the next year it is expected to rise to $42 or fall to $37. An investor buys one-year put options with a strike price of $41. Which of the following is necessary to hedge the position?

A. Buy 0.2 shares for each option purchased
B. Sell 0.2 shares for each option purchased
C. Buy 0.8 shares for each option purchased
D. Sell 0.8 shares for each option purchased

Answer: C

The payoff from the put option is zero if there is an up movement and 4 if there is a down movement. Suppose that the investor buys one put option and buys Δ shares. If there is an up movement the value of the portfolio is D×42. If there is a down movement it is worth D×37+4. These are equal when 37Δ+4=42Δ or Δ=0.8. The investor should therefore buy 0.8 shares for each option purchased.

25. The current price of a non-dividend-paying stock is $40. Over the next year it is expected to rise to $42 or fall to $37. An investor buys put options with a strike price of $41. What is the value of each option? The risk-free interest rate is 2% per annum with continuous compounding.

A. $3.93
B. $2.93
C. $1.93
D. $0.93

Answer: D

The formula for the risk-neutral probability of an up movement is

$$p = \frac{e^{rT} - d}{u - d}$$

In this case r=0.02, T= 1, u=42/40=1.05 and d=37/40=0.925 so that p=0.76 and the value of the option is $(0.76\times0+0.24\times4)e^{-0.02\times1}$=0.93

26. Which of the following describes how American options can be valued using a binomial tree?

A. Check whether early exercise is optimal at all nodes where the option is in-the-money
B. Check whether early exercise is optimal at the final nodes
C. Check whether early exercise is optimal at the penultimate nodes and the final nodes
D. None of the above

MULTIPLE CHOICE QUESTIONS

Answer: A

For an American option we must check whether exercising is better than not exercising at each node where the option is in the money. (It is clearly not worth exercising when the option is out of the money)

27. In a binomial tree created to value an option on a stock, the expected return on stock is

A. Zero
B. The return required by the market
C. The risk-free rate
D. It is impossible to know without more information

Answer: C

The expected return on the stock on the tree is the risk-free rate. This is an application of risk-neutral valuation.

28. In a binomial tree created to value an option on a stock, what is the expected return on the option?

A. Zero
B. The return required by the market
C. The risk-free rate
D. It is impossible to know without more information

Answer: C

The expected return on the option on the tree is the risk-free rate. This is an application of risk-neutral valuation. The expected return on all assets in a risk-neutral world is the risk-free rate.

29. A stock is expected to return 10% when the risk-free rate is 4%. What is the correct discount rate to use for the expected payoff on an option in the real world?

A. 4%
B. 10%
C. More than 10%
D. It could be more or less than 10%

Answer: D

The correct answer is D. There is no easy way of determining the correct discount rate for an option's expected payoff in the real world. For a call option the correct discount rate in the real world is often quite high and for a put option it is often quite low (even negative). The example in the text illustrates this.

30. Which of the following is true for a call option on a stock worth $50

A. As a stock's expected return increases the price of the option increases
B. As a stock's expected return increases the price of the option decreases
C. As a stock's expected return increases the price of the option might increase or decrease
D. As a stock's expected return increases the price of the option on the stock stays the same

Answer: D

The option price when expressed in terms of the underlying stock price is independent of the return on the stock. To put this another way, everything relevant about the expected return is incorporated in the stock price.

31. Which of the following are NOT true

A. Risk-neutral valuation and no-arbitrage arguments give the same option prices
B. Risk-neutral valuation involves assuming that the expected return is the risk-free rate and then discounting expected payoffs at the risk-free rate
C. A hedge set up to value an option does not need to be changed
D. All of the above

Answer: C

The hedge set up to value an option needs to be changed as time passes. A and B are true.

The current price of a non-dividend paying stock is $30. Use a two-step tree to value a European call option on the stock with a strike price of $32 that expires in 6 months. Each step is 3 months, the risk free rate is 8% per annum with continuous compounding. What is the option price when u = 1.1 and d = 0.9?

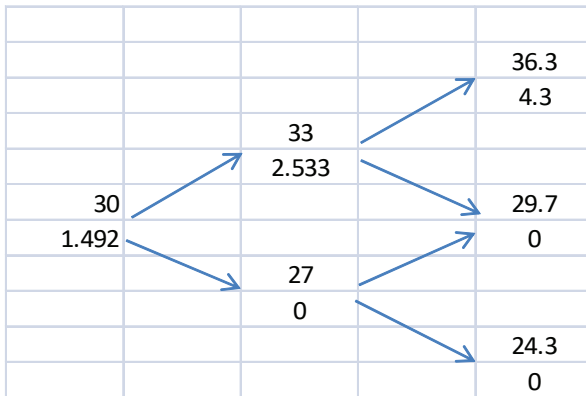
A. $1.29
B. $1.49
C. $1.69
D. $1.89

Answer: B

The pr $p = \frac{e^{r\Delta t} - d}{u - d} = \frac{e^{0.08\times 0.25} - 0.9}{1.1 - 0.9} = 0.6010$

The tree is

MULTIPLE CHOICE QUESTIONS



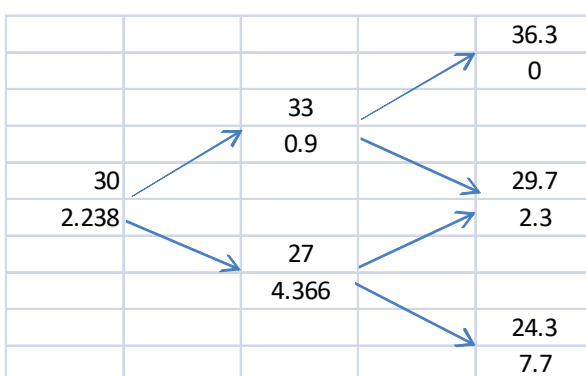
33. The current price of a non-dividend paying stock is $30. Use a two-step tree to value a European put option on the stock with a strike price of $32 that expires in 6 months with u = 1.1 and d = 0.9. Each step is 3 months, the risk free rate is 8%.

A. $2.24
B. $2.44
C. $2.64
D. $2.84

Answer: A

The $p = \frac{e^{r\Delta t} - d}{u - d} = \frac{e^{0.08\times 0.25} - 0.9}{1.1 - 0.9} = 0.6010$

The tree is



34. Which of the following is NOT true in a risk-neutral world?

A. The expected return on a call option is independent of its strike price
B. Investors expect higher returns to compensate for higher risk
C. The expected return on a stock is the risk-free rate
D. The discount rate used for the expected payoff on an option is the risk-free rate

Answer: B

In a risk-neutral world investors require an expected return equal to the risk-free rate and the discount rate that should be used for all expected payoffs is the risk-free rate.

35. If the volatility of a non-dividend paying stock is 20% per annum and a risk-free rate is 5% per annum, which of the following is closest to the Cox, Ross, Rubinstein parameter u for a tree with a three-month time step?

A. 1.05
B. 1.07
C. 1.09
D. 1.11

Answer: D

The formula for u is

$$u = e^{\sigma\sqrt{\Delta t}} = e^{0.2\times\sqrt{0.25}} = 1.1052$$

36. If the volatility of a non-dividend-paying stock is 20% per annum and a risk-free rate is 5% per annum, which of the following is closest to the Cox, Ross, Rubinstein parameter p for a tree with a three-month time step?

A. 0.50
B. 0.54
C. 0.58
D. 0.62

Answer: B

The formula for p is

$$p = \frac{e^{r\Delta t} - d}{u - d} = \frac{e^{0.05\times 0.25} - 0.9048}{1.1052 - 0.9048} = 0.538$$

37. The current price of a non-dividend paying stock is $50. Use a two-step tree to value an American put option on the stock with a strike price of $48 that expires in 12 months. Each step is 6 months, the risk free rate is 5% per annum, and the volatility is 20%. Which of the following is the option price?

A. $1.95

MULTIPLE CHOICE QUESTIONS

B. $2.00
C. $2.05
D. $2.10

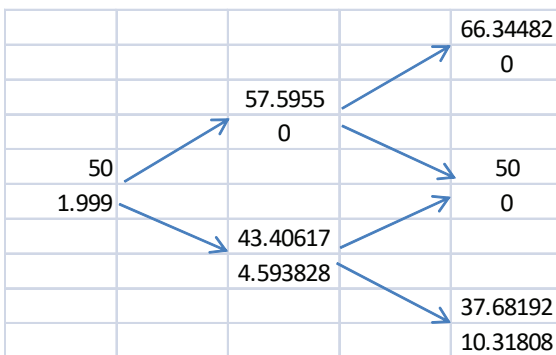
Answer: B

In this case

$$u = e^{\sigma\sqrt{\Delta t}} = e^{0.2\times\sqrt{0.5}} = 1.152 \qquad d = 1/u = 0.868$$

$$p = \frac{e^{r\Delta t} - d}{u - d} = \frac{e^{0.6\times 0.5} - 0.868}{1.152 - 0.868} = 0.5539$$

The tree is



38. Which of the following describes delta?

A. The ratio of the option price to the stock price
B. The ratio of the stock price to the option price
C. The ratio of a change in the option price to the corresponding change in the stock price
D. The ratio of a change in the stock price to the corresponding change in the option price

Answer: C

Delta is D*f*/D*S* where D*S* is a small change in the stock price (with nothing else changing) and D*f* is the corresponding change in the option price.

39. When moving from valuing an option on a non-dividend paying stock to an option on a currency which of the following is true?

A. The risk-free rate is replaced by the excess of the domestic risk-free rate over the foreign risk-free rate in all calculations
B. The formula for u changes
C. The risk-free rate is replaced by the excess of the domestic risk-free rate over the foreign risk-free rate for discounting
D. The risk-free rate is replaced by the excess of the domestic risk-free rate over the foreign risk-free rate when p is calculated

Answer: D

The formula for *u* does not change. The discount rate does not change. The formula for *p* becomes

$$p = \frac{e^{(r-r_f)\Delta t} - d}{u - d}$$

showing that D is correct.

40. A tree is constructed to value an option on an index which is currently worth 100 and has a volatility of 25%. The index provides a dividend yield of 2%. Another tree is constructed to value an option on a non-dividend-paying stock which is currently worth 100 and has a volatility of 25%. Which of the following are true?

A. The parameters p and u are the same for both trees
B. The parameter p is the same for both trees but u is not
C. The parameter u is the same for both trees but p is not
D. None of the above

Answer: C

The formula for *u* is the same in the two cases so that the values of the index on its tree are the same as the values of the stock on its tree. However, in the formula for *p*, *r* is replaced by *r*−*q*.

QUESTIONS AND ANSWERS ON BLACK AND SCHOLES MODEL

1. Which of the following is assumed by the Black-Scholes-Merton model?

A. The return from the stock in a short period of time is lognormal
B. The stock price at a future time is lognormal
C. The stock price at a future time is normal
D. None of the above

Answer: B

Black-Scholes-Merton assumes that the return from a stock in a short period of time is normally distributed. This means that the stock price at a future time is lognormally distributed.

2. The original Black-Scholes and Merton papers

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on stock option pricing were published in which year?

A. 1983
B. 1984
C. 1974
D. 1973

Answer: D

The correct answer is 1973. By coincidence this is also the year that organized trading in call options started. Put option trading started a few years later.

3. Which of the following is a definition of volatility

A. The standard deviation of the return, measured with continuous compounding, in one year
B. The variance of the return, measured with continuous compounding, in one year
C. The standard deviation of the stock price in one year
D. The variance of the stock price in one year

Answer: A

Volatility when multiplied by the square root of Dt is the standard deviation of the return in a short period of time of length Dt. It is also the standard deviation of the continuously compounded return in one year.

4. A stock price is $100. Volatility is estimated to be 20% per year. What is an estimate of the standard deviation of the change in the stock price in one week?

A. $0.38
B. $2.77
C. $3.02
D. $0.76

Answer: B

The estimate is $100 \times 0.2 \times \sqrt{1/52} = \$2.77$

5. What does N(x) denote?

A. The area under a normal distribution from zero to *x*
B. The area under a normal distribution up to x
C. The area under a normal distribution beyond x
D. The area under the normal distribution between -*x* and x

Answer: B

The normal distribution runs from minus infinity to plus infinity. N(x) is the area under the distribution between minus infinity and x.

6. Which of the following is true for a one-year call option on a stock that pays dividends every three months?

A. It is never optimal to exercise the option early
B. It can be optimal to exercise the option at any time
C. It is only ever optimal to exercise the option immediately after an ex-dividend date
D. None of the above

Answer: D

When there are dividends it is sometimes optimal to exercise immediately before an ex-dividend date, but it is never optimal to exercise at other times. None of the first three answers are therefore correct.

7. What is the number of trading days in a year usually assumed for equities?

A. 365
B. 252
C. 262
D. 272

Answer: B

Analysts usually assume that there are 252 trading days in a year for equities.

8. The risk-free rate is 5% and the expected return on a non-dividend-paying stock is 12%. Which of the following is a way of valuing a derivative?

A. Assume that the expected growth rate for the stock price is 17% and discount the expected payoff at 12%
B. Assuming that the expected growth rate for the stock price is 5% and discounting the expected payoff at 12%
C. Assuming that the expected growth rate for the stock price is 5% and discounting the expected payoff at 5%
D. Assuming that the expected growth rate for the stock price is 12% and discounting the expected payoff at 5%

Answer: C

Risk-neutral valuation shows that a derivative can be correctly valued by assuming that the stock grows at the risk-free rate and discounting the expected payoff at the risk-free rate. It follows that C is the correct answer.

9. When there are two dividends on a stock, Black's approximation sets the value of an American call option equal to which of the following

A. The value of a European option maturing just before

MULTIPLE CHOICE QUESTIONS

the first dividend
B. The value of a European option maturing just before the second (final) dividend
C. The greater of the values in A and B
D. The greater of the value in B and the value assuming no early exercise

Answer: D

For Black's approximation we calculate a) the value of the option assuming no early exercise and b) the value of the option assuming that the exercise decision is made immediately before the final ex-dividend date. The value of the option is set equal to the greater of these two values.

10. Which of the following is measured by the VIX index

A. Implied volatilities for stock options trading on the CBOE
B. Historical volatilities for stock options trading on CBOE
C. Implied volatilities for options trading on the S&P 500 index
D. Historical volatilities for options trading on the S&P 500 index

Answer: C

The VIX index measures the implied volatilities of one-month options trading on the S&P 500 index.

11. What was the original Black-Scholes-Merton model designed to value?

A. A European option on a stock providing no dividends
B. A European or American option on a stock providing no dividends
C. A European option on any stock
D. A European or American option on any stock

Answer: A

The original Black-Scholes-Merton model was designed to value a European option on a stock paying no dividends .

12. A stock provides an expected return of 10% per year and has a volatility of 20% per year. What is the expected value of the continuously compounded return in one year?

A. 6%
B. 8%
C. 10%
D. 12%

Answer: B

The expected value of the continuously compounded return per year is $\mu - \sigma^2/2$. In this case it is $0.1 - 0.2^2/2 = 0.08$ or 8%.

13. An investor has earned 2%, 12% and -10% on equity investments in successive years (annually compounded). This is equivalent to earning which of the following annually compounded rates for the three year period.

A. 1.33%
B. 1.23%
C. 1.13%
D. 0.93%

Answer: D

Over the three year period \$100 grows to $100\times1.02\times1.12\times0.9 = \$102.816$. This corresponds to an annually compounded return per year of $\sqrt[3]{1.02816} - 1 = 0.0093$ or 0.93%. One plus the return is the geometric average of 1.02, 1.12, and 0.90.

14. Which of the following is NOT true?

A. Risk-neutral valuation provides prices that are only correct in a world where investors are risk-neutral
B. Options can be valued based on the assumption that investors are risk neutral
C. In risk-neutral valuation the expected return on all investment assets is set equal to the risk-free rate
D. In risk-neutral valuation the risk-free rate is used to discount expected cash flows

Answer: A

Risk-neutral valuation produces a valuation that is correct in all situations not just those where investors are risk-neutral. The expected return on all investments is assumed to be the risk-free rate and the risk-free rate is used to discount expected payoffs.

15. Which of the following is a way of extending the Black-Scholes-Merton formula to value a European call option on a stock paying a single dividend?

A. Reduce the maturity of the option so that it equals the time of the dividend
B. Subtract the dividend from the stock price
C. Add the dividend to the stock price
D. Subtract the present value of the dividend from the stock price

MULTIPLE CHOICE QUESTIONS

Answer: D

To value a European option we replace the stock price by the stock price minus the present value of all dividends that have ex-dividend dates during the life of the option.

16. When the Black-Scholes-Merton and binomial tree models are used to value an option on a non-dividend-paying stock, which of the following is true?

A. The binomial tree price converges to a price slightly above the Black-Scholes-Merton price as the number of time steps is increased
B. The binomial tree price converges to a price slightly below the Black-Scholes-Merton price as the number of time steps is increased
C. Either A or B can be true
D. The binomial tree price converges to the Black-Scholes-Merton price as the number of time steps is increased

Answer: D

The binomial tree valuation method and the Black-Scholes-Merton formula are based on the same set of assumptions. As the number of time steps is increased the answer given by the binomial tree approach converges to the answer given by the Black-Scholes-Merton formula.

17. When the non-dividend paying stock price is $20, the strike price is $20, the risk-free rate is 6%, the volatility is 20% and the time to maturity is 3 months which of the following is the price of a European call option on the stock

A. 20N(0.1)-19.7N(0.2)
B. 20N(0.2)-19.7N(0.1)
C. 19.7N(0.2)-20N(0.1)
D. 19.7N(0.1)-20N(0.2)

Answer: B

$$S_0 N(d_1) - Ke^{-rT} N(d_2)$$

T $$d_1 = \frac{\ln(S_0 / K) + (r + \sigma^2 / 2)T}{\sigma\sqrt{T}} \quad \text{and} \quad d_2 = d_1 - \sigma\sqrt{T}$$

In this case $S_0 = K = 20$, $r = 0.06$, $\sigma = 0.2$, and $T = 0.25$ so that $Ke^{-rT} = 20e^{-0.06\times0.25} = 19.7$. Also

$d_1 = [\ln(1) + (0.06 + 0.04/2)\times0.25]/(0.2\times0.5) = 0.2$ and $d_2 = 0.2 - 0.2\times0.5 = 0.1$.

B is therefore the correct answer.

18. When the non-dividend paying stock price is $20, the strike price is $20, the risk-free rate is 6%, the volatility is 20% and the time to maturity is 3 months which of the following is the price of a European put option on the stock

A. 19.7N(-0.1)-20N(-0.2)
B. 20N(-0.1)-20N(-0.2)
C. 19.7N(-0.2)-20N(-0.1)
D. 20N(-0.2)-20N(-0.1)

Answer: A

The formula for the option price is

$$Ke^{-rT} N(-d_2) - S_0 N(-d_1)$$

$$d_1 = \frac{\ln(S_0 / K) + (r + \sigma^2 / 2)T}{\sigma\sqrt{T}} \quad \text{and} \quad d_2 = d_1 - \sigma\sqrt{T}$$

In this case $S_0 = K = 20$, $r = 0.06$, $\sigma = 0.2$, and $T = 0.25$ so that $Ke^{-rT} = 20e^{-0.06\times0.25} = 19.7$. Also

$d_1 = [\ln(1) + (0.06 + 0.04/2)\times0.25]/(0.2\times0.5) = 0.2$ and $d_2 = 0.2 - 0.2\times0.5 = 0.1$.

A is therefore the correct answer.

19. A stock price is 20, 22, 19, 21, 24, and 24 on six successive Fridays. Which of the following is closest to the volatility per annum estimated from this data?

A. 50%
B. 60%
C. 70%
D. 80%

Answer: D

The price relative for the first week is 22/20 or 1.1. The natural log of the price relative is ln(1.1) or 0.09531. Similarly the ln of the price relatives for the other weeks are -0.1466, 0.1001, 0.1335, and 0. The standard deviation of 0.09531, -0.1466, 0.1001, 0.1335, and 0 is 0.1138. The volatility per week is therefore 11.38%. This corresponds to a volatility per year of 0.1138 multiplied by the square root of 52 or about 82%. The answer is therefore D.

20. The volatility of a stock is 18% per year. Which is closest to the volatility per month?

1.5%
3.0%
5.2%
6.3%

Answer: C

The volatility per month is the volatility per year multiplied by the square root of 1/12 . The square root of 1/12 is 0.2887 and 18% multiplied by this is 5.2%.

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SUCCESS STORY OF REGISTERED VALUER

Mr. Debasish Ghosh
Registered Valuer (P & M)

Assignment: Valuation of a vehicle sales and service industry (under CIRP)

Purpose and Scope of the work: to estimate the fair and liquidation value of the plant and machinery and other non-productive assets of the corporate debtor

Mandate: The resolution professional of the CIRP of the corporate debtor issued the mandate to me

Basis of valuation: fair value

Premise of value: Highest and best use

CIRP Commencement date: 2nd week of March 2020

Valuation mandate date: 3rd week of September 2020

Physical inspection date: 4th week of November 2020

Time stipulation of the assignment: Two weeks w.e.f. the mandate date

Reason for the delay in physical inspection: Total non-cooperation from the suspended directors of the corporate debtor and site non-readiness

Team of physical inspectors and others: Two valuers each from land and building and plant and machinery, state bank of India representative, Resolution Professional (total 6 persons

Brief description about inspection at site no 1

- We reached at the industrial town which is approx 180 km from kolkata at around 11 am. We found that the site was under the control of security staff.
- The plant gate was found locked, though the staff was sitting at the gate inside. After several request from the RP and the bank representative, he did not open the gate.
- So, we could not enter the premises. The security in charge was called on by the bank representative after some time.
- He came at the site after 30 minutes, but he told that he had no permission from the director to open the gate.
- It was a highest degree of audacity and indiscipline on the part of the corporate debtor, while the CIRP was already ordered by NCLT a few months back and the financial creditor and resolution professional and we the valuers travelled 180 km and arrived at the site for physical verification of the assets, but we were not even allowed to enter the premises.
- We then took a few photo snaps from outside the gate only and from the other portions of the boundary walls. Few furniture and air conditioners were visible from outside. Two nos vehicles were visible on the outside premises in broken condition.
- We asked the gatekeeper, he told that those two vehicles were not the property of the company.
- He also told that there are practically no asset inside the service station and that almost all the assets including spares and tools were shifted to site no 2 a few months back.
- With this information, we left the site and proceeded to site no 2 which was 30 km away from site no 1

Brief description about inspection at site no 2

- We reached the site no 2 at around 2 pm. the sales and service station were found in running condition.
- It appeared that a few employees of the corporate debtor were running the operation unauthorisedly.
- They were not fully aware about the facts and regulations of the CIRP. they first thought that we might be some new customers.
- The RP and the bank-representative started talking with the - then operation in charge inside the station-office.
- In the meantime, I had a quick round on the ground floor operations where three luxury vehicles were

under servicing on the service platforms.

- I took the photo snaps rapidly. I then went upstairs to the 1st floor and took the snaps of furniture and office equipment and air conditioners and came downstairs.
- By this time the employees group came to understand that we went there to inspect the site and that the RP is willing to take charge of the site.
- So, they became agitated and ferocious. The operation in charge challenged me why I took the photo snaps and he urged to me to delete the snaps immediately. His attitude was very rough and unlawful also.
- Within a few minutes all of us were virtually compelled to come out from the service station even though the RP and bank-representative were with us.
- However, that 25 minutes quick view of the station equipment and assets and the photo snaps enabled me to make a consolidated list of assets based on which I did the valuation of the plant and machinery assets of the Corporate Debtor.
- I could not see the inventory and I was not allowed to see.
- It was clear that the group of people i.e. The old and existing group of staffs were Continuing the business at site no 2 and for doing business some inventory stock is required. However, the employees' group did not allow me to check the inventory.

Visit to the Corporate office of the CD

- On 7th December 2020, at around 11 am, I visited the corporate office of the Corporate Debtor at kolkata and found that there was
- No nameplate on the entry door of the office in name of the Corporate Debtor. However, a nameplate was seen in name of abcdefgh.
- I entered the office and asked few staff whether that is the office of the Corporate Debtor. One staff replied that it is no more the Office of the Corporate Debtor.
- And that the office of the CD Is at site no 2 now. I came out and took two photo snaps of the entry gate.

Approach of valuation followed for the assignment and the reason

The cost approach was adopted for this valuation.

- As the inspection was incomplete, the technical specification of the assets could not be taken during inspection. Also, the client did not cooperate and did not provide any detailed fixed asset list before or after inspection**.** So, the valuation could not be done as per market approach.
- Also, the industry was virtually a closed industry and the operation was stopped for last 3 years. Because a running industry will surely have an audited balance sheet. This industry had its last balance sheet in 2017. Therefore, the future income stream could not also be known. So, the income approach valuation was also not possible.
- Therefore, the only option left was the cost approach based on estimated current replacement cost and then applying depreciation on it.

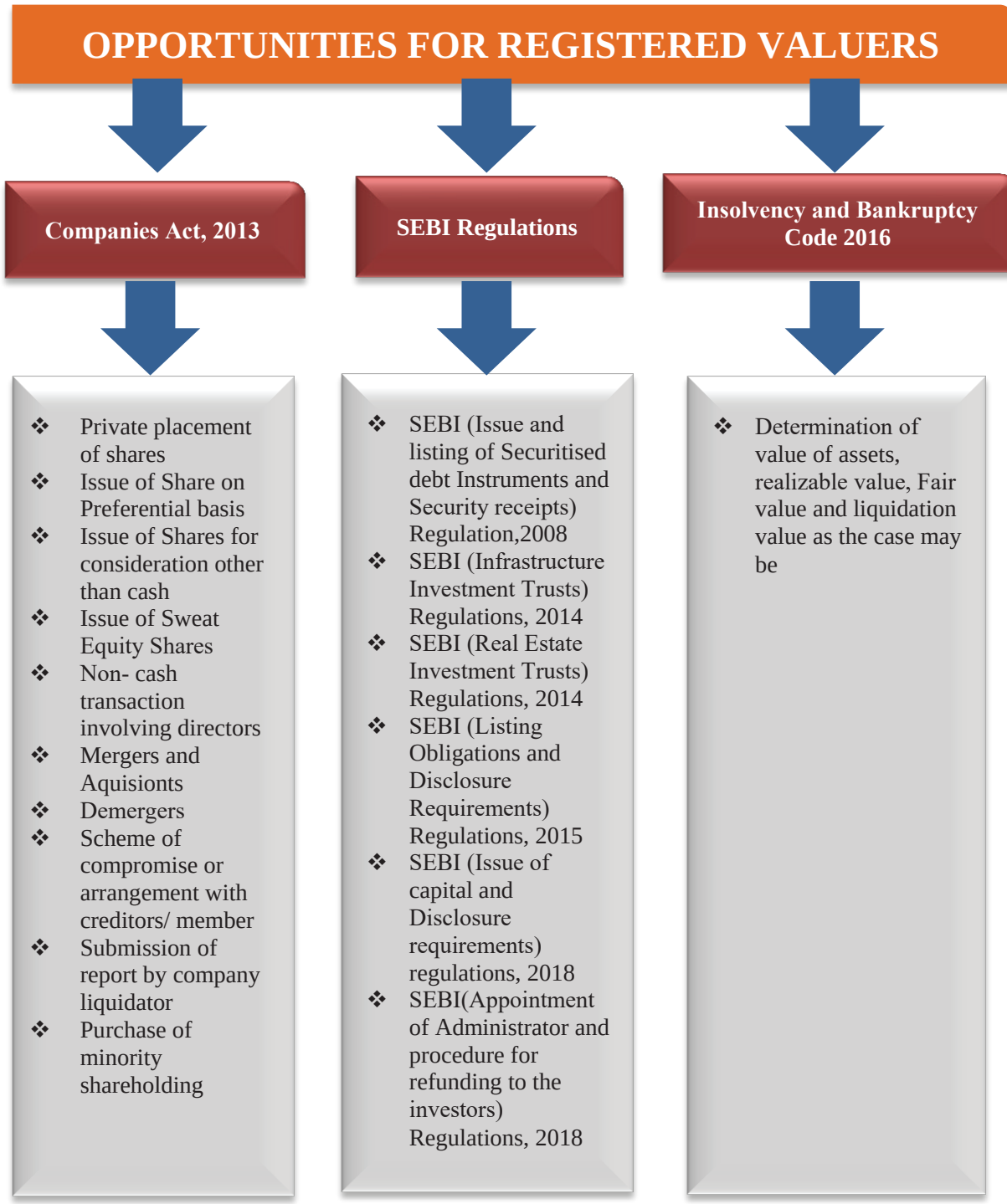
The valuation report was submitted to the Resolution Professional in next one week time.

Following were the key challenges in this assignment :

1. No fixed asset list was provided / made available from / by the client.
2. The client that means the suspended directors were neither cooperating with the Resolution Professional and the valuers to do the physical inspection at site nor allowing to enter and remain in the premises.
3. No provisional balance sheet was available as on CIRP date.
4. Valuation was to be done based on last audited balance sheet of 2017 and the quick visual inspection which was also hindered.
5. The Resolution Professional himself was in trouble and could not take over the control of the sites due to non co - operation from the suspended directors.
6. However, in spite of the above challenges, I could complete my valuation report and submit to RP.
7. The Resolution Professional made use of this report and circulated the report to the financial creditors and the NCLT.

Final Outcome of the assignment

- However, because of the non co - operation of the corporate debtor and non-submission of any resolution plan in next 2 months' time, the NCLT passed an order for liquidation of the corporate debtor.
- Therefore, the valuation report of CIRP, though prepared in a very challenging atmosphere, was of use to the honorable NCLT who then was able to pass order for liquidation of the corporate debtor
- As it is an IBC case under NCLT due to confidentiality clause imposed on me during accepting the assignment, I cannot divulge the name of the Corporate Debtor


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 Registered 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 requite 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

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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.".*		

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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.

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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
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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.

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