Chapter 11

Valuation of Complex Investment Instruments – An emerging opportunity for Business Valuers in India

IND-AS has opened up new opportunities for Business Valuers in India as IND-AS requires fair valuation of complex investment/ financial instruments such as Compulsorily/ Optionally Convertible Preference Shares, Compulsorily/ Optionally Convertible Debentures etc.

Earlier, under I-GAAP, in the books of an issuer, these instruments were recorded at a book value, on the liability side of a balance sheet, as a share capital or debt depending on the nature of the instrument. For ex: Compulsorily/ Optionally Convertible Preference Shares were recorded at book value as share capital and Compulsorily/ Optionally Convertible Debentures were recorded as debt. However, under IND-AS, these instruments are required to be recorded at a fair value on each reporting date and the fair value are also required to be further bifurcated under equity/ liability/ derivative component depending upon the nature and terms of the instrument.

In conventional valuation, we assume that all equity claims/ shares are identical and divide the value of equity by the number of shares to get the value per share. In practice, though, claims on equity can vary on a number of dimensions. For Ex: some equity investors have preferential claims on the cash flows– dividends in some cases and cash flows in liquidation in other cases. This situation is common in case of investment by private equity players which usually invests in form of Compulsorily Convertible Preference Shares/ Debentures and also has preferred liquidation rights in case of liquidation over the other equity shareholders of the company. Thus, any company which has raised equity funds from private equity investor by issuing Compulsorily Convertible Preference Shares/ Debentures and is implementing IND-AS requires to record the Compulsorily Convertible Preference Shares/ Debentures at fair value and not a book value.

Valuation of complex investment/ financial instruments:

The fair value of such instruments is determined by allocating equity value over the common shares and such convertible/ preferred instruments.

The AICPA Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, describes three methods of allocating value between preferred and common equity, which include:

- Current Value Method ("CVM")

- Probability Weighted Expected Return Method ("PWERM")

- Option-Pricing Method ("OPM")

OPM, which is based on the Black-Scholes model, is a common method for allocating equity value between common and preferred shares. This methodology models the value of various components of an entity's capital structure as a succession of call options on the proceeds expected from the sale of the business or the pending liquidation of a company's assets at some future date.

Overview of Key Steps for the Option Pricing Method:

Below, we have summarized the steps and general processes in applying the option-pricing method.

Step 1: Determine Business Value and Black-Scholes Assumptions

- **Business Value**: As the OPM values invested capital as a call option on a company's value, we need to first determine which value to use. Conceptually, this value should be the amount stakeholders would receive in a liquidity event. Accordingly, it is reasonable to estimate this value by using the implied enterprise value derived from the market-based and income-based analyses as of the valuation date. Since the fair value of interest-bearing debt (net of excess cash) is typically known, it can be subtracted from enterprise value.

- **Time to Liquidity Event:** This is one of many assumptions that can be difficult to pin down, but the question that it raises is a significant one:

How much time exists until there is a planned or likely liquidity event, such as a sale, public offering or other exit event? Of course, no company has a crystal ball and many professionals are often frustrated trying to defend the assumption. Interaction at the board level is often warranted.

- **Risk-Free Rate**: The risk-free rate is the most obvious assumption. Typically, it is the rate available on a government security whose term matches the assumed time to liquidity.

- **Volatility:** This measure should be based on the standard deviation of quoted market prices. In the case of a public company, volatility can be derived easily from the company's historical stock prices. For private companies, volatility can be estimated by analyzing comparable public companies' historical stock performances. It should be noted that the range of the stock returns sampled should cover the same period as the estimated time to liquidity. The OPM is highly sensitive to volatility and great care should be taken in estimating the volatility factor.

Step 2: Understanding the Capital Structure

Convertible debt and preferred stock come in many flavors, shapes, and sizes. It is critical to invest the time to properly understand any conversion features. For example, some private equity firms structure preferred rounds that are effectively debt but labeled as preferred stock for tax purposes (the preferred never converts, instead it simply accrues a dividend). Whereas, other more common preferred rounds may have a choice of both realizing their preferences and then participating with common shareholders. Other preferred stock may be structured to either convert to common or be paid its preference, but not both. It is important to understand the subtle differences of preferred stock.

Step 3: Determine the different levels of equity value (breakpoints)

This step consists of determining different levels of equity value, called breakpoints (also known as "waterfall" distribution). Each consecutive breakpoint represents an incremental claim on company's equity value by a certain class of shareholders/option holders triggered by their respective liquidation, participation, and/or conversion rights.

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Step 4: Determine the proportion of incremental equity value to be distributed

After calculating the breakpoints, the proportion in which incremental Equity Value would be distributed between consecutive breakpoints is determined.

Step 5: Determine the incremental equity value of each option

Each consecutive breakpoint is considered a strike price in the call options on the company's equity value. Using the Black-Scholes Option Pricing model, with other inputs as discussed above, the incremental value of each option is calculated.

Step 6: Distribute the incremental equity value

The incremental value of each call option is distributed among different classes of shareholders based on their respective distribution proportion as calculated in Step 4.

Computation of breakpoints

In OPM, one of the critical steps is to determine the breakpoints. Using the OPM, the common stock is modeled as a call option that gives its owner the right, but not the obligation, to buy the underlying equity value at a predetermined price. The considered "price" of these common-stock "call options" is based on the value of the entire enterprise at specific equity values ('breakpoints'). The point at which each class of equity becomes "in-the-money" is viewed as a call option. It is therefore, necessary to determine the underlying value where each class would receive value, known as the strike price.

The OPM is a widely accepted valuation methodology for determining the fair value of complex instruments/ different classes of shares in developed countries such as the US. We believe the application of OPM will increase in India also with the adoption of IND-AS and requirement of the fair value of complex instruments for financial reporting purpose.