
Enterprise Value of firms in Insolvency

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Introduction

“The only certainty in life is uncertainty”

The above maxim is as applicable to businesses as to life. Businesses, as life, are full of uncertainties. Dealing with unfavorable macro-economic events, strong industry headwinds and hostile competition can be challenging at the best of times, and well-nigh impossible when some or all of these conditions become adverse at the same time.

Distress can be broadly categorized as Economic or Financial Distress

Economic Distress

Economic distress is broad-based and afflicts most companies operating in the industry or economy at one point or another. Economic distress factors are normally outside the control of a company. Examples of factors causing economic distress are – technological or cultural shifts, recessions, and sometimes wars or other geo-political confrontations. Some of the economic distress factors are temporary, while other factors may leave behind a permanent change in the business landscape.

For example, war affects all businesses (suppliers of arms and ammunitions excepted); however, businesses recover after normalcy returns. But, a technological shift such as innovation in mobile phones has rendered the aim-and-shoot camera industry redundant forever. It is critical to identify whether factors causing distress are temporary or long-term to be able to chart the future course of action for a distress company.

Financial Distress

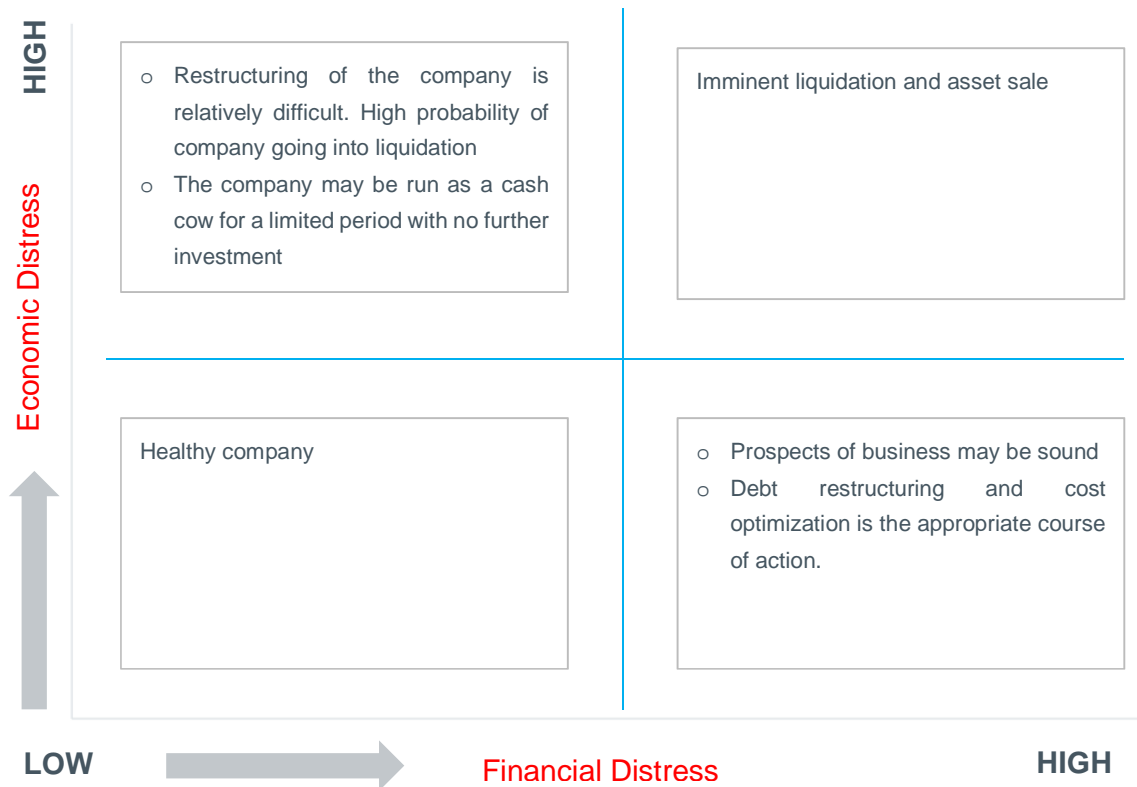
Firms in financial distress cannot meet, or have difficulty paying off their financial obligations to their creditors, typically due to high fixed costs, illiquid assets or revenues that are sensitive to economic downturns, etc. Some of the characteristics of financially distressed companies – Stagnant or declining revenue, shrinking margin, high leverage, ballooning interest costs, working capital blockage, high customer and employee attrition etc.

Economic distress at times overlaps with micro (i.e., firm specific) factors resulting in financial distress. Some of the key micro factors contributing to financial distress are:

- **Management:** Management sometimes veers away from its mandate to enhance stakeholders' value through optimum use of resources at its disposal, which can be attributed to either incompetency or the 'Agency Problem.'¹
- **Debt:** Debt is a double-edged sword. For disciplined companies with predictable cash flows, it increases return on equity due to leverage and tax benefit. However, for distressed companies, debt can hasten insolvency.
- **Force Majeure:** Force majeure or Act of God is unforeseen circumstances that can have deleterious impact on a business and result in distress.

In a world with unlimited capital and resources, distressed companies will never face insolvency. Unfortunately, since capital is limited and chases businesses with the best prospects, distressed companies become insolvent. The following is a decision matrix for companies facing financial and economic distress.

¹ In corporate finance, the agency problem usually refers to a conflict of interest between a company's management (the agent) and the company's stockholders (principals).



Regulatory Recognition of Distress

There is no regulatory guidance in terms of recognition of distress and most laws come into effect once an act of default occurs. In India, under Insolvency and Bankruptcy Act, 2016, (“IBC”) when a corporate debtor² commits a default, a financial creditor³, an operational creditor³ or the corporate debtor itself may initiate corporate insolvency resolution provided the minimum amount of the default is one lakh rupees. Under the UK Insolvency Act, 1986, a company is deemed unable to pay its debts, if a creditor (by assignment or otherwise) to whom the company is indebted in a sum exceeding £750⁴.

Though there is no formal definition, there can be telltale signs of distress prior to the default event. These signs should be observed or monitored carefully and incorporated into valuation of such enterprise.

² Corporate debtor means a corporate person who owes a debt to any person

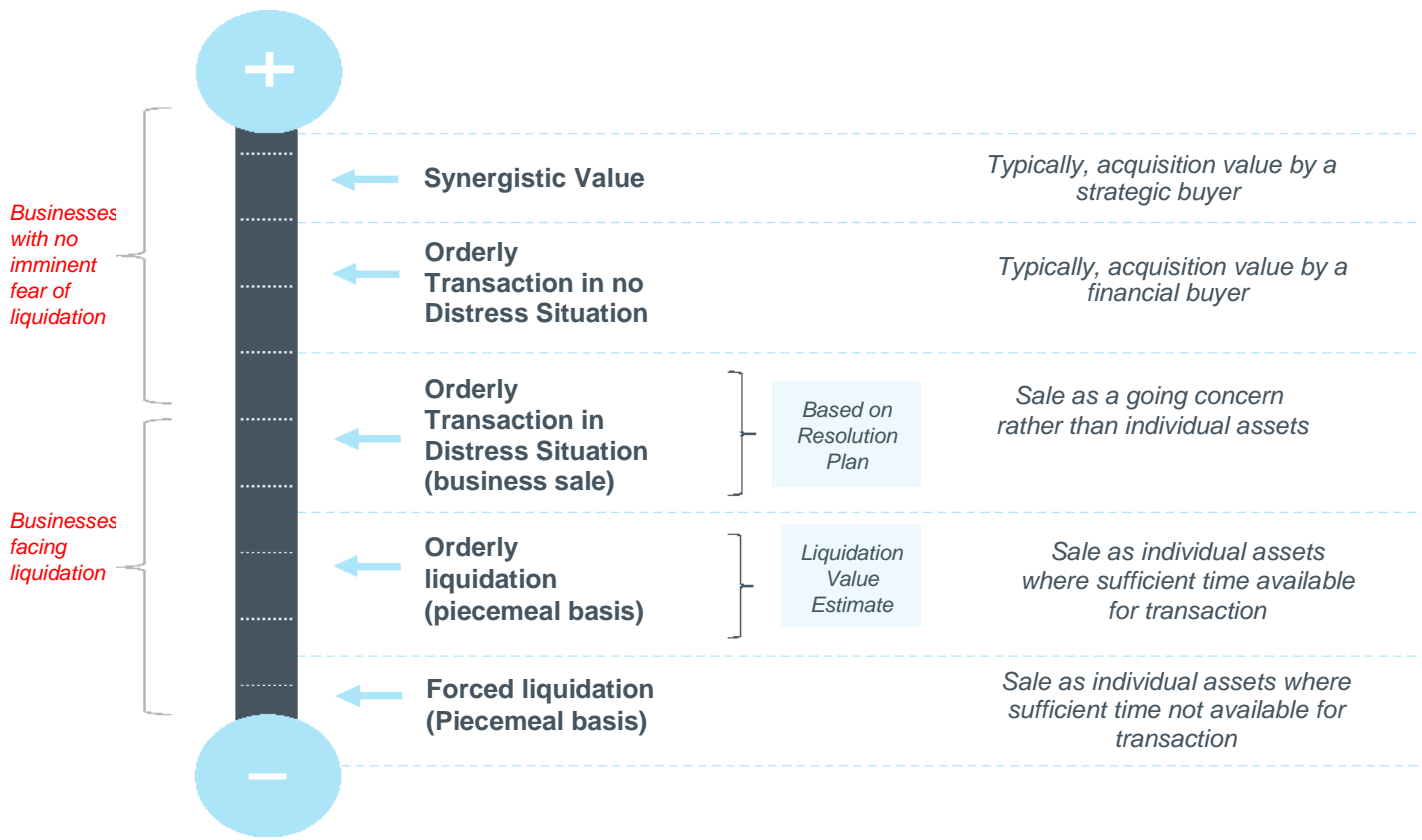
³ "Creditor" means any person to whom a debt is owed and includes a financial creditor, an operational creditor, a secured creditor, an unsecured creditor and a decree holder

⁴ <http://www.legislation.gov.uk/ukpga/1986/45/section/123>

Levels of Value

It is critical to identify the nature of distress. The optimal course of action for companies facing irreversible economic distress is liquidation of assets. However, for companies with good prospects but suffering due to high debt burden, financial restructuring is advisable. Estimating enterprise value is a critical step in financial restructuring.

The following represents a quick overview of the levels of Value for a company under distress:



Enterprise Value v/s Liquidation Value

The two routes available to a company under insolvency are

- to liquidate the business, selling off business or physical assets piecemeal, and returning the proceeds to creditors, or
- to restructure its debts to manageable levels and continue as a going concern.

Accordingly, there are two premises under which an insolvent company can be valued:

Liquidation Value

Liquidation Value has been defined under various acts as listed below:

As per section 35 (1) of the Insolvency and Bankruptcy Code, 2016 (“IBC”), “Liquidation Value is the estimated realizable value of the assets of the corporate debtor if the corporate debtor were to be liquidated on the insolvency commencement date”. Further, section 35 (2) of IBC requires the valuer to determine liquidation value using internationally accepted valuation standards.

According to the International Valuation Standards (“IVS”) 104, “Liquidation Value is the amount that would be realized when an asset or group of assets are sold on a piecemeal basis, that is without consideration of benefits (or detriments) associated with a going-concern business”.

According to the Indian Banks’ Association (IBA),” Liquidation Value describes the situation where a group of assets employed together in a business are offered for sale separately, usually following a closure of the business”. Therefore, Liquidation value is essentially, the estimated value of assets when sold on piecemeal basis on the insolvency commencement date.

Enterprise Value

Enterprise Value (“EV”) is a measure of total value of company’s operating assets. It is a going concern value and takes into account best use of assets. A business which is merely financially distressed (i.e. one whose assets are more valuable if kept together as a functioning unit than they would be if sold off piecemeal) is said to have a ‘going concern surplus’⁵.

Estimation of Enterprise Value of a firm under distress & insolvency

There are three basic approaches to valuation – Income, Market and Cost. The Cost approach estimates the cost of recreating or replacing the assets of an enterprise. Since, for an operating business, the whole is greater than the sum of its parts in general, cost approach is not the most preferred method for estimating enterprise value of going concerns.

On the other hand, traditional methods are more suited for healthy companies and can’t be used, as is, for valuation of distressed companies. There are several ways to incorporate the risk of bankruptcy while estimating the enterprise value of the firm under different valuation approaches.

Market Approach

Market approach is a relative benchmarking. It uses a comparison between the subject enterprise and a company with a discovered price either through publicly traded shares or a private transaction using operating/ financial metrics for comparison. The applicability of market approach is limited in case of distressed companies as nature of distress can vary from firm to firm.

While valuing a company under distress, it is essential to select the right set of companies as there might be very few companies under similar situation operating in the same industry. Moreover, the distressed company’s recent historical

⁵ Value over and above the liquidation value of assets of the company

revenue and earnings might not be meaningful. Hence, a sustainable or normalized metric has to be ascertained on which the multiple should be applied.

Income Approach

Under income approach, Discounted Cash Flow (DCF) method is a commonly used methodology, wherein present value of future expected economic benefits of an enterprise over life of the enterprise is estimated by using a discount rate based on their riskiness. For a going concern, life of the enterprise is typically assumed to be till perpetuity. Hence, cash flows beyond a discreet period are captured using a terminal value. Traditional DCF method are not suitable for distressed companies for the following reasons:

- Uncertainty over future cash flows
- Uncertainty around life of the enterprise
- Challenges around estimating the appropriate discount rate

The following discussion encapsulates how to modify traditional DCF to overcome the above challenges.

Uncertainty over future cash flows

Distressed companies typically have a very volatile past; hence, projecting future cash flows is quite challenging. There are normally too many moving pieces to capture in a traditional framework. Hence, Scenario Analysis is commonly used for valuing such companies.

In Scenario Analysis, possible future courses are identified for the enterprise. A thorough understanding of the cause of distress is helpful in identifying possible scenarios.

For example, a gas-based power plant without a Power Purchase Agreement (PPA) and a dedicated gas linkage is currently not producing as current spot prices are unviable. It is therefore not able to service its debt. Possible scenarios for this power plant could be:

- Future gas prices remain at high level. In such a scenario, it will never be viable for the plant to produce power. Hence, it faces liquidations and the plant & equipment need to be sold on a piecemeal basis.
- Spot prices come down and demand improves. In this scenario, it is viable for the plant to operate and gradually increase production to operate at a peak plant load factor (PLF) of say, 75%.
- Spot gas prices based on future estimates are expected to be lower than current spot prices but there is not much improvement in demand. In such a scenario, the plant is able to operate as a peak load plant during those hours of the day when demand is high and shut down during periods of low demand, overall achieving a PLF of 25%.

Based on a macro view of future gas prices, demand for electricity and analysis of the plant's fixed costs, it will be possible to assign a probability to the above three scenarios to arrive at a concluded value.

Alternatively, a simulation analysis of the key variables of the business such as revenue growth, profitability, etc can be carried out. This will also take into account the possibility of negative outcomes or cause the firm into liquidation. Simulation can be performed using Monte Carlo simulation technique or probability simulation. It provides for a range of possible outcomes and the probabilities for each course of action including extreme possibilities (liquidation of the company) and for the most conservative decision (firm will continue as a going concern entity with reasonable

profitability and optimal capital structure) - along with all possible consequences for middle-of-the-road decisions. Following steps need to be performed for the simulation process:

- Choose the variables in the DCF valuation for which you want to estimate probability distributions, such as revenue, profitability, capital structure, etc.
- Define the distributions (type and parameters) for each of these variables.
- Run a simulation, where you draw one outcome from each distribution and compute the value of the firm. If the firm hits the “distress conditions”, value it as a distressed firm.
- Repeat the previous step as many times as you can
- Estimate the expected value across repeated simulations and then an average of the expected values is taken into consideration for the estimation of the enterprise value of the distressed firm.

Life of the Enterprise

Life of the enterprise can be concluded based on nature of distress, resources required for turnaround and appetite for such assets in market.

- If nature of distress is permanent rather than temporary (more often economic), it is advisable to shut the business down. Hence, a limited period life is more likely
- Sometimes, though the nature of distress is temporary and the business is likely to be revived, the cost of maintaining the asset or turnaround cost could be higher. For example, maintenance cost of non-producing mine could be significantly high. Similarly, the upfront cost for turning around a business can also be significant. In these cases, liquidation is the most likely scenario and accordingly, a limited life should be considered in DCF.
- Appetite for distressed assets in market also matters. In an industry with surplus capacity, assets capable of revival, also are shut down.

While calculating terminal value using a Gordon Growth Model, terminal growth rate should be considered similar to any healthy company. A lower terminal growth rate is not appropriate, since terminal value ascribes ‘a going concern nature’ to the business. Any trial or tribulation should be considered in the transition period.

Discount Rate

In traditional DCF model, riskiness of cashflows are captured in discount rate. However, it is difficult to capture risk of liquidation in cashflows only. As discussed earlier, probability of liquidation can be captured separately. Also, scenarios or simulation can be considered to capture risk in the cash flows. Life of the enterprise can be considered based on the likely outcomes for each scenario.

Capital asset pricing model (CAPM) is commonly used to estimate cost of capital. The following points should be considered while estimating discount rate to arrive at EV:

- Typically, distressed companies suffer from lack of working capital funding due to high debt positions. However, while estimating EV, a sustainable leverage should be considered based on Company’s cash generating potential. Sufficient working capital funding should be considered going forward.
- Any economic distress factors will be captured in Beta as comparable companies will be exposed to similar risk factors.

Beta

Using a historically regressed beta for the distressed company can lead to underestimation of the cost of equity as regression betas lag distress as they are calculating over a long historical period hence, a using a bottom-up beta approach is suitable. This approach uses beta based on the peer group operating in the same industry. These betas are then unlevered and then re-levered based on the financial and operating risks suitably. This method is useful for companies which are listed as well privately held.

Cost of Debt

For a distressed firm, the current market rate of borrowings is significantly higher due to current capital structure or bad economic conditions. For our purpose of estimating the cost of debt, the rate of borrowing should be taken into consideration based on the future profitability and capital structure emerging from the restructuring plan. For this purpose, the cost of debt can be estimated based on a synthetic rating, which in turn can be estimated based on the financial characteristics of the firms within each class of ratings (for example, interest coverage ratio, capital structure, etc.)

Tax Rate

The current effective tax rate for a distressed company might be the minimum alternative. The tax rate is low in the beginning for the company as tax carry forwards might exist. It increases as the company starts generating profits and its situation improves. Considering that, for a distress firm, the tax rate would gradually increase, it is suggested that the effect of this be included while estimating post tax cost of debt by using different post tax cost of debt at different points of time during the projected period.

Capital Structure / Leverage

A distressed company is generally faced with financial distress and hence, considering a constant target capital structure for the company for calculating the discount rate may not be appropriate as the improvement of capital structure towards the industry average, although dependent on the restructuring plan, is mostly likely to be gradual over time. Hence, a separate discount rate needs to be estimated for each year till the industry average as per the restructuring plan is achieved. This can be done by varying the debt equity ratio and various other inputs used in the discount rate calculation for which the forecasts are available.

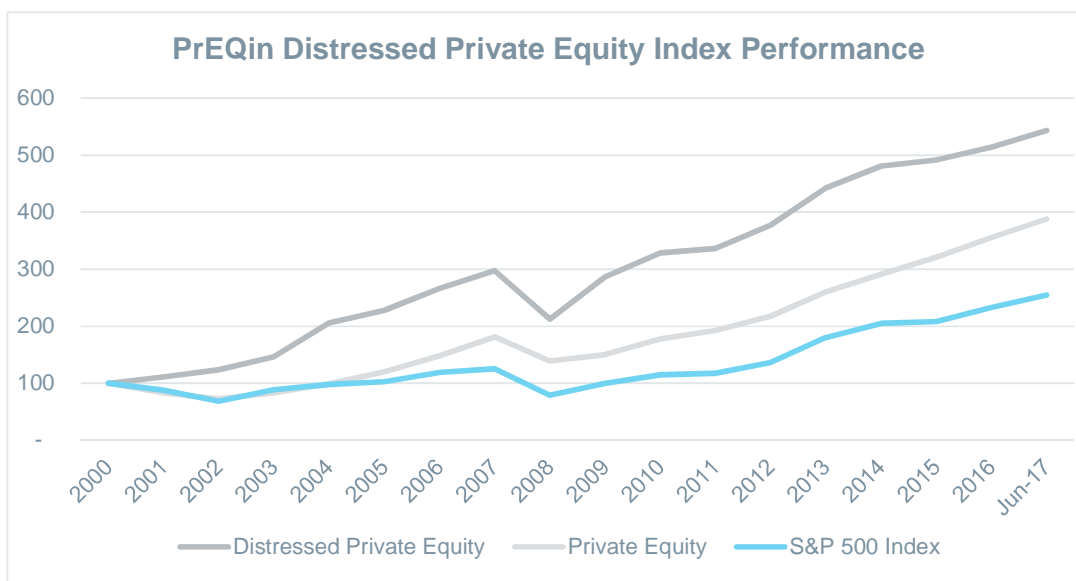
Benchmarking with Historical Returns of ARCs and Distressed Equity Funds

Discount rate can also be benchmarked with empirical historical returns of Asset Reconstruction Companies (ARCs). There is a lack of sufficient publicly available data related to historical returns of ARC operating in India. Traditionally, 20.0 percent has been a thumb rule return for ARCs. However, implementation of the 15/85 scheme (earlier 5/95) for the new capital requirements in August 2014 has resulted in upfront cash component increased to 15.0 percent, the ARCs would require more capital to acquire the stressed assets in India along with funding of working capital needs for the stressed assets. This has significantly increased the cost of acquisition of stressed assets for ARCs. This scheme has also decreased the propensity of the ARCs to rely just on the management fee based on the net asset value of the security receipts issued to the investors (earlier estimated based on the outstanding security receipts). This has reduced the overall IRR for the ARC in India.

To offset this, ARCs have been seeking higher discounts to buy NPAs; however, banks are unwilling to reduce price, resulting in an expectation mismatch. This has led to a sharp decline in the transaction closure rate. The main reason for this gap appears to be the vastly different discounting rates being used by banks and ARCs. While banks use

discount rates in the range of 10% to 15%, given their access to cheap capital in the form of public deposits, ARCs use much higher discount rates of 20% to 25% as their cost of funds is relatively higher than that of banks. Without realistic valuation guidelines, there is no incentive for private investors to participate in auctions as the reserve price tends to be high, given the low discount rate used by banks vis-à-vis ARCs and private investors.

As risk and return go hand in hand, historical returns of ARCs can be considered as benchmark expected return from investment in distressed equity. The following graph represents the PrEQin Distressed Private Equity Index⁶ over the last 16 years which has consistently outperformed the private equity asset class and S&P 500 Index as a whole and has been one of the best performing strategies within the industry.



Source: Prequin

Reorganization costs

Reorganization costs are one-time costs incurred to extend the life of a company facing bankruptcy through special arrangements and restructuring in order to keep the business alive. This cost relates to the objective of getting the debt levels down and closer to their optimal capital structure. This can be achieved through either persuading the creditors to write down their claims, sell assets or issue new securities. The impact of reorganization costs in estimating the valuation of the distressed firm can be considered while estimating the discount rate where instead of using a single discount rate for all the years, different discount rates can be considered based on the varying capital structure for each period of cash flow. Higher discount rate in the first year would reflect higher leverage and then moving towards the optimal capital structure in the outer years thereby reducing the discount rate.

Valuing distress separately from the going concern value of the firm⁷

An alternate way of incorporating probability of distress while estimating the value of the distressed firm is accounting for the distress separately from the going concern value. This is because the traditional methods of valuation do not

⁶ PrEQin Index is a money-weighted index that uses fund level cash flow transactions and net asset values for over 3,900 private equity funds

⁷ Sebastian Afflerbach, Master Thesis on Valuation of distressed firms, August 2014

work well for companies in declining stage and also facing financial distress. Hence, there is a need of a new framework which addresses the issue of bankruptcy or distress risk into the value of the distressed firm. Hence, the below adapts the identified issues and deals specifically with the risk of default in a separate variable, tailored to the firm's characteristics.

The model is based around the following equation:

Value = Value of Going Concern * (1 – probability of liquidation) + Liquidation Value * probability of liquidation,
where probability of liquidation represents the cumulative probability of liquidation over the valuation period.

Probability of default based on credit rating can be considered a proxy for probability of liquidation. For example, if a CCC rated 10-year bond yield is 14.5%, while the risk-free rate based on 10-year Govt. bond yield is 7.0%, the probability of liquidation can be calculated as follows:

$$1 - \left\{ \frac{1 + \text{risk-free rate}}{1 + \text{risky bond YTM}} \right\}^{\text{maturity period}}$$
$$= 1 - \left\{ \frac{1 + 7.0\%}{1 + 14.5\%} \right\}^{10} = 49.2\%$$

Accordingly, 10-year cumulative liquidation probability as signified by the CCC-rating of the bond is 49.2%. Please note, probability of liquidation tends to be lower than the default probability of bonds.

Conclusion

Valuation in general is a combination of science and art, more so in case of distressed companies. Hence, it is paramount that the right framework, methodology and assumption mix is considered to arrive at the right valuation, which balances the theoretical and practical aspects. Arriving at the right enterprise value is critical to arrive at the appropriate pay-offs to secured, unsecured, operational creditors and equity holders, which in turn is critical to ensure the best resolution for the subject business.