

ISSUE 9 - DATE 28 JULY 2015

TOPIC 9 - Relative Valuation Analysis

INTRODUCTION AND OBJECTIVE

This article attempts to discuss some considerations that need to be taken into account when evaluating using the Relative Valuation Analysis also commonly known as RVA. This article will make reference to issue 8, in certain sections. Please refer to issue 8 for a better appreciation of the concepts discussed.

I personally favoured the RVA approach in most types of equity valuation **but as for independent power plant evaluation, I would recommend the use of discounted cash flow as a primary technique, if information is available to conduct this technique and **supplemented** by some RVA technique as a basis for equity valuation:-**

- (i) due to the nature that the **finite period**, contractual terms in the revenue calculation are stated in the Power Purchase Agreement (PPA) which could span from 21 years to 30 years, it reduces significant level of subjectivity on the part of the analyst when using discounted cash flow.
- (ii) **as the life of the power plant is finite and governed by the remaining life of the PPA, assessment of terminal value, no longer** becomes a key source of input and hence again reduces the level of subjectivity on the part of analyst.
- (iii) If discounted cash flow is used, most of the inputs could be determined objectively, and the only **subjective element is the determination of the equity discount rate or weighted average cost of capital** to be used as source of input depending on the method chosen by an analyst. (Discussed in issue 2). With adequate analysis, the level of **subjectivity could be reduced** if adequate analysis is made in determination in the level of risk perceived by investors in a particular country and adjusted according to the level of financial leverage for a particular project under evaluation.
- (iv) Next, the use of **price to earnings ratio** as a standalone, may give rise to misleading conclusion. See explanation below.

- In *Issue 8*, it was mentioned that for a company that operates only one power plant, the earnings shall typically **increase** over the different phases of the remaining life of a power plant. This has the effect to result in the **decreasing** price to earnings ratio during the different phases of the remaining life of a power plant. Hence, it would be **a mistake to conclude that a lower price to earnings ratio means an undervalued power plant. (Please refer to Issue 8 published on 27 July 2015.**

The different phases of the life of a power plant	Effects on	
	Price to Book Ratio	Price to Earnings Ratio
<p>Commencement of operation right after construction phase For an independent power plant that has just commenced operation, it would have to service the debt interest cost in the early years and hence earnings are low during this period.</p>	Highest, and decreasing	Highest, and decreasing
<p>Completion of repayment of debt financing phase Thereafter, upon complete repayment / redemption of the loan, there are no longer any interest charges and earnings would be higher relative to the initial years.</p>	<p>I</p> <p>Intermediate and decreasing. Approaches to one time multiple, as the power plant expiry of the power plant approaches the expiry of the Power Purchase Agreement.</p>	Intermediate and decreasing
<p><u>Commentary:-</u> If we were to refer back to <u>Issue 8, Case Study 2, point 3</u>, I have commented as follows:-</p>		

".....It is likely that the power plant is in the post-repayment of the loan period and shall therefore report higher earnings than during its earlier years. This is evident from the estimated PE multiple based on FY2011's results, is approximately 10 times. ($2,300 / 231.3 = 10$). However as explained under point 4, Case 1 above, measurement using price earning multiple would not be suitable due to the volatile earnings reported during the different stages of independent power plants and it does not take into consideration other specific factors of valuing independent power plants such as remaining useful life amongst others....."

It would be a mistake to conclude in this instance that the low PE multiple means that the power plant is undervalued. Conversely, without undertaking further study such as discounted cash flow, we may arrive at a wrong conclusion, when in fact, the market price set might be on high side. The reason being that the measurement of the price to earnings multiples vary with the remaining age of life of a power plant. In this case, the power plant has four years life remaining, while based on PE multiple, even the figure seems low at 10 times, it also mean that it takes approximately ten years of future earnings to recoup the investment cost, of which this is way longer than the remaining life of the power plant which is approximately four years.

- (v) Lastly, we should expect **price to book ratio** to be **above one time multiple** in the **early years** and **as the remaining age of the power plant approaches its end of life, its price to book value should approach to one time multiple.**

Why is this so?

In the **early years**, the investors are bidding a higher price than its book value, as the market pricing reflects the book value and the Present Value of future Growth Opportunities (**PVGO**). This means that the "fair" price to book ratio should be **above 1 time multiple.**

Mathematically, this can be stated as follows:-

$$P/B \text{ justified (in times)} = 1 + \frac{(ROE\% - r)}{(r - g)}$$



A measurement of present value
of future growth opportunities

In early years, PVGO is a positive figure for an independent power plant with a return exceeding its cost of equity, as the power plants has many years leading to the expiry of the Power Purchase Agreement (PPA), while in **later years**, we should expect that the **PVGO is approaching zero**, when it is close to expiry of the PPA. Hence, the price to book in later years, when nearing the expiring of the PPA **should approach to one time multiple.**

LEARNING POINTS:-

1. Discounted cash flow is a more favoured approach than RVA in valuation of an independent power plant as most inputs are possible to be obtained objectively, rather than relying on subjective assessments. (point (i), (ii) and (iii) above)
2. On assumption that a company only operates a power plant and do not declare dividends, the typical profile of the price to earnings and price to book ratios are that **the ratios are higher** in early years prior to repayments of loans and **lower** in later years upon completion of repayment of debt financing. (point (iv) above)
3. When using RVA in valuation of power plant, an analyst has to be aware that the use of RVA alone without considering other specific factors such as the life profile of the power plant under evaluation **may result incorrect conclusion**. If possible, use discounted cash flow to evaluate the fair values of a power plant if information is available. (point (iv) above)
4. Appreciate the concept of the changing trend of an independent power plant's **price to book profile** by **having a higher than one multiple times when it has more years to its expiry of PPA** and **approaching onetime multiple when it is near / reaching the end of the expiry of its PPA**. (point (v) above)

This article was written while I'm in a flight. THANKS FOR READING -

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