
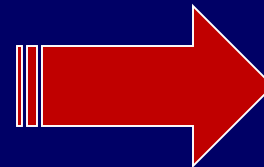




Revisiting Valuation: In the Context of Firms



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Valuation ...

- Dividend Discount Model: Computation of today's share price which states that share value equals the present value of all expected future dividends

Case of Loss making firms / cyclical firms?

Suppose, a Co-operative Sugar Unit in Uttar Pradesh is up for sale/divestment ... how do you value it?

- Book Value Model: Net worth of a firm according to the balance sheet
- Liquidation Model: Net proceeds that would be realized by selling the firm's assets and paying off its creditors

Valuation ...

- Market Value Balance Sheet: Financial statement that uses market value of assets and liabilities
- Price Earnings Ratio Model ■

But, firms are more valuable as going concerns (??) and their ability to generate future cash flows. Market values are more relevant for finance.

- Discounted Cash Flow Model ■

Valuation ...

- Return Measures
- Dividend Yield = Div_1/P_0
- Return on Equity (ROE) = EPS/BV [a.k.a Return on Net Worth (RONW)]
- What happens if Eicher Motors decides to pay a lower dividend, and reinvest the funds, the stock price may increase because the future dividends may be higher.

Stock price and EPS link

- Payout ratio: Fraction of earnings paid out as dividends
- Ploughback ratio: Fraction of earnings retained by the firm
- Growth can be derived from applying the return on equity to the percentage of earnings ploughed back into operations.
- $P_0 = E_1(1 - b)/(k_e - ROE \times b)$

Stock price and EPS link

- So, justified price-earnings ratio becomes $P_0/E_1 = (1 - b)/(k_e - ROE \times b)$
- P/E Ratio and Ploughback Ratio
 - If, $ROE > k_e$ then \uparrow in b leads to \uparrow in P/E
 - If, $ROE < k_e$ then \uparrow in b leads to \downarrow in P/E
- P/E Ratio and Interest Rate
- P/E Ratio and Risk
- P/E Ratio and Liquidity



Example

- Garware Marine Ltd. forecasts to pay a Rs. 5 dividend next year, which represent 100% of its earnings.
- This will provide investors with a 12% expected return. Instead, Rahim suggests to plough back 40% of the earnings at the firm's current return on equity of 20%. What is the value of the stock before and after the ploughback decision.




Example ... Continued

- Answer: If the company did not ploughback some earnings, the stock price would remain at Rs. 41.67. With the ploughback, the price rose to Rs. 75.00
- The difference between these two numbers ($75.00 - 41.67 = 33.33$) is called the Net Present Value of Growth Opportunities (NPVGO)






Share Price ...

- In other words, NPVGO is Net Present Value (NPV) of a firm's future investments
 - Sustainable Growth Rate: Steady rate at which a firm can grow ($= \text{ROE} \times \text{ploughback ratio}$)
 - Share price = present value of level stream of earnings + present value of growth opportunities
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Capitalization Rate

- Can be estimated using the perpetuity formula, given minor algebraic manipulation 
 - Difference between growth stock and income stock 
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FCF and PV

- Free Cash Flows (FCF) should be the theoretical basis for all PV calculations
- FCF is a more accurate measurement of PV than either Div or EPS
- The market price does not always reflect the PV of FCF
- When valuing a business for purchase, always prefer using FCF



Valuing a business


- The value of a business is usually computed as the discounted value of FCF out to a *valuation horizon* (H) 
- The *valuation horizon* is sometimes called the terminal value and is calculated like PVGO. 



Book Value

- An accounting measure and can be established easily

But,



- Accounting conventions and policies are subject to a lot of subjectivity and arbitrariness
 - Also, historical figures are quite divergent from current economic value/earnings power
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Liquidation Value

- 
- Though it is more realistic than book value

But,

- It is difficult to estimate the amounts to be realized from the liquidation of various assets
 - It also does not reflect earnings capacity of the business
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List of Sugar Mills in U.P.

| | |
|----------------------------|--------------------------------------|
| Bajaj Hindustan | New Swadeshi Sugar Mills |
| Balrampur Chini Mills | Oswal Overseas |
| Basti Sugar Mills | Oudh Sugar Mills |
| Birla Sugar Mills | Pratappur Sugar & Ind.. |
| Chilwaria Sugars | Ramalal Sahakari Chini Mills |
| Daya Sugar | Rosa Sugar Works. |
| Dwarikesh Sugar Industry | Saraya Sugar Mills |
| Govind Nagar Sugar Mills | Seksaria Biswan Sugar Factory |
| H.M.P.Sugar Ltd | Shravasti Kisan Sahakari Chini Mills |
| ISGEC | Simbhaoli Sugar Mills |
| J.K.Sugar | The Bharat Sugar Mills |
| K.M.Sugar Mills | The Saraswati Sugar Mills |
| Kasturi Sugar Mills | The United Provinces Sugar Chemicals |
| Kisan Sahakari Chini Mills | Titawi Sugar Complex. |
| Mahalakshmi Sugar Mills | Tulsipur Sugar Co. |
| Mawana Sugar Mills | U.P.State Sugar Corporation |
| Motilal Padampat Udyog | Upper Doab Sugar Mills |
| New India Sugar Mills | Upper Ganges Sugar Ind. |

Available Data of Similar Sugar Mills

| From Y'days Newspaper | Price | BV | P/BV | EPS | P/EPS |
|-----------------------|-------|-----|------|------|-------|
| Upper Ganges Sugar | 78 | 144 | 0.5 | 41.0 | 1.9 |
| Dwarikesh Sugar | 58 | 97 | 0.6 | 13.4 | 4.3 |
| Riga Sugar | 25 | 51 | 0.5 | 15.0 | 1.7 |
| K M Sugar | 21 | 36 | 0.6 | 6.7 | 3.1 |
| Rana Sugar | 17 | 26 | 0.6 | 3.8 | 4.3 |
| Mawana Sugar | 28 | 57 | 0.5 | 2.5 | 11.2 |
| | | | 0.56 | | 4.43 |

DCF Technique using FCF

| Valuation of Sugar Mill | | | | | | | | | | |
|-------------------------|-----|----|---|---|---|----|----|----|----|----|
| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Capex | 10 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Depreciat | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| PAT | 4 | -2 | 2 | 4 | 8 | 10 | 11 | 12 | 13 | 14 |
| FCF | -12 | -5 | 3 | 5 | 9 | 11 | 12 | 13 | 14 | 15 |
| Terminal Value | | | | | | | | | | 70 |
| FCF incl. | -12 | -5 | 3 | 5 | 9 | 11 | 12 | 13 | 14 | 85 |