CHAPTER - 1

Introduction

“Knows the price of everything, but the value of nothing” - Oscar Wilde

1.1 Background

Valuation is considered as the dimension of measurement in the world of financial market. It is a systematic quantitative technique of determining the value of a firm in the associated industry. Evaluating firm value and determining various value drivers for both public and private sector firms are the crucial key stones in corporate restructuring strategy. Value of firm represents the past, present and future performance of firm as well as the long term interest of investors (shareholders and stakeholders). Investors invest in a particular firm with expectations that they will get high return on their investment at the end of the holding period of the asset (stocks, bonds, derivates, saving accounts, fixed deposits and other investments assets). High return on investment will compensate their investment risk they took. Investors try to minimize their opportunity cost by earning high rate of return. No investor wants to pay more for the stock than it is worth.

David Laro and Shannon P. Pratt (2005)\(^1\) narrates VALUE explicity...

“Like beauty, value is in the eye of the beholder. What is value to one may be inconsequential to another. In this regard, value is mere subjective perception. Unlike beauty, the economic value of a business interest involves more than mere subjective perception. Valuation of business interest involves a multitude of factors ranging from financial matters to historical perspectives. There are different standards of value ranging from intrinsic value to contractual value. Similarly, business valuation is also subject to varying standards of valuation. To value a business, standard definition of value must be used. Same business interest may have different values if more than one standard of value is used. Business value must be measured by a value that is relevant, predictable and reliable.”

Investors want to invest in those companies which add economic value to their investment. Companies create values for investors by generating cash more than cost of acquiring capital. There is no value creation for investors if company is not able to
generate profit for investors. Adding economic value to the wealth of investors enhances the value of company. If one company invests Rs 2, 00,000 and second company invests Rs 3, 00,000 but both companies generate same earnings then the first company generates more value for the investors at same level of earnings.

\[
\text{Investment Rate} = \frac{\text{Growth Rate}}{\text{Return on Invested Capital}}
\]

Investment rate is that portion of NOPLAT (Net Operating Profit Less Taxes) invested back into business. High ROIC (Return on Invested Capital) companies should focus on growth whereas low ROIC companies should focus on improving return.

From valuation perspective, stiff calculations and industry wide assumptions are required. Domestic and global economic conditions affect the value of firm. In a gloomy economic outlook when growth in market has been turned into twilight, sentiments of investors have been widespread negatively across the market and economy is on the verge of becoming sick then investors became wary about investments in firms across the sectors. Forecasting of earning becomes difficult task in such gloomy scenario.

### 1.2 Importance of Valuation

According to Aswath Damodaran (2011) valuations play a crucial role at every stage of a firm’s life cycle. When business firms starve for funds either for start up new venture or expansion of existing business across new geographical boundaries, they decide to go to public. At the time of launching IPOs, the price of shares of company offered to public is determined on the basis of valuation of company. For raising funds for the expansion of business, firms may approach to venture capitalists, private equity investors and financial institutions. Under such conditions role of valuation is very significant. All venture capitalists, financial institutions evaluate the value of firm before injecting the funds into the projects of firms. On the basis of the risk factor and value of firm, investors finalize their share. If risk factor seems to be higher in investment then investors may demand for large share in company and if the investment is not riskier then investors may satisfy with small share in company.
Valuation plays a central role in different segments of finance – corporate finance, corporate restructuring (Mergers and Acquisitions) and portfolio management. Valuation of an asset is a daunting task. During corporate restructuring, the role of valuation can’t be ignored. Valuation plays a very crucial role in acquisition of firm. The fair value of the target firm has to be determined by the acquirer. Even accounting is not immune. The role of valuation is very impactful in accounting standards. Fair value accounting has been remained as the main focus in latest global accounting standards where in balance sheet; valuation of assets has been done on their fair value as per the market current market scenario not as per their original cost.

1.3 Purpose of Valuation

Valuation plays a central role in business world as long as assets are traded. Valuation has been considered a purpose oriented process. Therefore the value of firm will vary depending on for what purpose it’s intended to be used. According to Pablo Fernandez (2002)³ following are some of the main purposes that valuation serves for the companies.

1.3.1 Acquisition price of firms

Valuation plays a very important role in determining the acquisition price when firms undergo corporate restructuring through mergers, acquisitions and takeover of firm. Valuation tells about:

a) The highest price that the acquirer must pay for the acquisition of target firm
b) The lowest price at which the target firm must be ready to sell its business to the acquirer

1.3.2 Investment purposes

Valuation of firms is done by the investors before investing in a particular firm. Investors use valuation for following purposes -

a) Valuation is done to determine the price of stock at which investor should invest in the firm.

b) Valuation is done to determine the best option for the investor as per current market scenario. Whether investor should sell the stock, buy the stock or hold the stock for long time. Selection of option depends upon the firm value in market and risk appetite of investors.
c) Investors use valuation to determine over value and under value companies in the market. Return on investment in future is determined on the basis of over value and under value of firms.

d) Comparative analysis of firms has been done on the basis of valuation. Investors examine which firm is better option to invest their funds for better return in future.

1.3.2 Initial Public Offerings

Firms launch IPOs to raise the funds from the public. Before going to public, it is mandatory for the firms to know the maximum price at which most number of investors wants to invest in their firms. Valuation helps the firms to determine the price at which shares must be offered to public during initial public offer.

1.3.3 Determining the value drivers for the company

The future growth of firm is based upon the value drivers. The corporate houses make their business strategies only after determining the value drivers of firm. Value drivers vary for every individual firm. The role of valuation of firms is very important in determining the various value drivers for the company associated with particular industry.

1.3.4 Selection of corporate restructuring strategies

The valuation helps in determining which corporate restructuring strategy is best for the company. Firms make decision about selection of various corporate restructuring strategies like mergers, acquisition, joint venture based upon the future growth prospects of company due to strategy and various micro and macro economic factors.

1.3.5 Strategic planning on product portfolio

The valuation helps the firms in making decision about the following strategies on its product portfolio –

a) Which existing products of firm should be continued in the market?

b) What type of new products should be launched by the firms as per change in taste and preferences of customers?

c) Which geographical location is profitable for firm?
Companies should decide how to expand their business in new location either by launching its existing product in new market or by launching new products in new market.

1.3.6 Analysis tool
The main goal of firms is to maximize the value of shareholders. Firms adopt various strategies and policies to enhance the economic value of the investment of their shareholders. The impact of various strategies adopted by the firms on the shareholders’ investment has been analyzed by the valuation of firm.

1.4 Generalities about Valuation
Aswath Damodaran (2012) suggested some generalities about valuation which are discussed below-

1.4.1 Generality 1: Since valuation models are quantitative, valuation is objective
Valuation is neither the science that some of its proponents do not make it out to be nor the objective search for the true value that idealists would like it to become. The models may be quantitative but the inputs leave plenty of room for subjective judgments. Thus the final value obtained from these models is colored by the bias. The obvious solution is to eliminate all bias before starting on a valuation but this is easier said than done. There are two ways of reducing the bias in the process

a) Avoid taking strong public positions on the value of a firm before the valuation is complete

b) Minimize the stake in the firm prior to the valuation.
Institutional concerns also play a role in determining the extent of bias in valuation. This can be traced partly to the difficulties analysts face in obtaining access and collecting information on firms that they have issued sell recommendations and to the pressure that they face from portfolio managers, some of whom might have large positions in the stock. In recent years, this trend has been exacerbated by the pressure on equity research analysts to deliver investment banking business. When using a valuation done by a third party, the biases of the analysts doing the valuation should be considered before decisions are made on its basis. For instance, a self-valuation done by a target firm in a takeover is likely to be positively biased. While this does not make the valuation worthless, it suggests that the analysis should be viewed with skepticism.
1.4.2 Generality 2: A well-researched and well-done valuation is timeless

The value obtained from any valuation model is affected by firm-specific as well as market-wide information. As a consequence, the value will change as new information is revealed. Given the constant flow of information into financial markets, a valuation done on a firm ages quickly and has to be updated to reflect current information. This information may be specific to the firm, affect an entire sector or alter expectations for all firms in the market. Thus, pharmaceutical companies that were valued highly in early 1992, on the assumption that the high growth from the eighties would continue into the future, were valued much less in early 1993, as the prospects of health reform and price controls dimmed future prospects. With the benefit of hindsight, the valuations of these companies and the analyst recommendations made in 1992 can be criticized, but they were reasonable as per the information available at that time. Finally, information about the state of the economy and the level of interest rates affect all valuations in an economy. A weakening in the economy can lead to a reassessment of growth rates across the board, though the effect on earnings is likely to be largest at cyclical firms. Similarly, an increase in interest rates will affect all investments. When analysts change their valuations, they will undoubtedly be asked to justify them. In some cases, the fact that valuations change over time is viewed as a problem.

1.4.3 Generality 3: A good valuation provides a precise estimate of value

Even at the end of the most careful and detailed valuation, there will be uncertainty about the final numbers, colored as they are by the assumptions that we make about the future of the company and the economy. It is unrealistic to expect or demand absolute certainty in valuation, since cash flows and discount rates are estimated with error. This also means that you have to give yourself a reasonable margin for error in making recommendations on the basis of valuations. The degree of precision in valuations is likely to vary widely across investments. The valuation of a large and mature company, with a long financial history, will usually be much more precise than the valuation of a young company, in a sector that is in turmoil. If this company happens to operate in an emerging market, with additional disagreement about the future of the market thrown into the mix, the uncertainty is magnified. Mature firms tend to be easier to value than growth firms and
young start-up companies are more difficult to value than companies with established products and markets. Many investors and analysts use uncertainty about the future or the absence of information to justify not doing full-fledged valuations. In reality, the payoff to valuation is greatest in these firms.

1.4.4 Generality 4: The more quantitative a model, the better the valuation
It may seem obvious that making a model more complete and complex should yield better valuations but it is not necessarily so. As models become more complex, the number of inputs needed to value a firm increases, bringing with it the potential for input errors. These problems are compounded when models become so complex that they become ‘black boxes’ where analysts feed in numbers into one end and valuations emerge from the other. The following main three points will be emphasized on all valuation –

a) Principle of parsimony states that do not use more inputs than absolutely need to value an asset.

b) There is a tradeoff between the benefits of building and the estimation costs with providing the detail.

c) The models don’t value companies: analysts do.

The problem in valuations is not based on too little information but it is availability of too much information. It is better to separate the information that matters, from the information that does not, is almost as important as the valuation models and techniques that you use to value a firm.

1.4.5 Generality 5: To make money on valuation, you have to assume that markets are inefficient.
Implicit often in the act of valuation is the assumption that markets make mistakes and that we can find these mistakes, often using information that tens of thousands of other investors can access. Thus, the argument, that those who believe that markets are inefficient should spend their time and resources on valuation whereas those who believe that markets are efficient should take the market price as the best estimate of value, seems to be reasonable. This statement does not reflect the internal contradictions in both positions. Those who believe that markets are efficient may still feel that valuation has something to contribute, especially when they are called upon to value the effect of a
change in the way a firm is run or to understand why market prices change over time. Furthermore, it is not clear how markets would become efficient in the first place, if investors did not attempt to find under and overvalued stocks and trade on these valuations. In other words, a pre-condition for market efficiency seems to be the existence of millions of investors who believe that markets are not.

On the other hand, those who believe that markets make mistakes and buy or sell stocks on that basis ultimately must believe that markets will become efficient. Markets are inefficient until investors take a large position in the stock that they believe to be mispriced but they become efficient after taking the position. On the one hand, we believe that markets make mistakes but, on the other, finding these mistakes requires a combination of skill and luck. This view of markets leads us to the following conclusions:

a) If something looks too good to be true – a stock looks obviously undervalued or overvalued – it is probably not true.

b) When the value from an analysis is significantly different from the market price, investors start off with the presumption that the market is correct and they have to convince themselves that this is not the case before they conclude that something is over or under valued.

1.4.6 Generality 6: The product of valuation is what matters; The process of valuation is not important.

There is risk of focusing exclusively on the value of company and whether it is under or overvalued. The probability of missing some valuable insights that can be obtained from the process of the valuation is quite high. The process explores about the determinants of value and helps in answering some fundamental questions –

a) What is the appropriate price to pay for high growth?

b) What is a brand name worth?

c) How important is it to improve returns on projects?

d) What is the effect of profit margins on value?

Since the process is so informative, even those who believe that markets are efficient should be able to find some use for valuation models.
1.5 Investment Philosophies and Role of Valuation in Philosophies

Valuation plays a minimal role in portfolio management for a passive investor whereas it plays a larger role for an active investor. Even among active investors, the nature and the role of valuation is different for different types of active investment. The value of an asset for a particular investor is based upon individual investment requirements and expectations. Market timers use valuation much less than investors who pick stocks, and the focus is on market valuation rather than on firm-specific valuation. Among security selectors, valuation plays a central role in portfolio management for fundamental analysts and a peripheral role for technical analysts. The following sub-section describes different investment philosophies and the role played by valuation in each as denoted by Aswath Damodaran (2012)\(^5\) –

1.5.1 Fundamental Analysts

Fundamental analysis is the study of accounting fundamentals and their impact upon the performance as well as value of firm. One of the main aim of fundamental analysis to calculate the true value of stock of firm on the basis of future risk, growth prospects, earnings, profitability and expected dividends. Various financial statements have been examined to determine the real value of firm and market price of stock. These financial statements are the primary source of information for investors, creditors, suppliers etc. Any deviation from this real value is a sign that a stock is under or overvalued. It is a long term investment strategy and the assumptions underlying it are:

- a) The relationship between value and the underlying financial factors can be measured.
- b) The relationship is stable over time.
- c) Deviations from the relationship are corrected in a reasonable time period.

Valuation is the central focus in fundamental analysis. Some analysts use discounted cash flow models to value firms and others use multiples such as the price earnings and price-book value ratios. Mukherji, Dhatt and Kim (1999)\(^6\) investigated that fundamental variables on stocks were positively related to book-market, sales-price and debt-equity ratios. Many investors adopt this approach and hold a large number of undervalued stocks in their portfolios with an expectations of superior performance of these stocks than the market performance.
1.5.2 Franchise Buyer

"We try to stick to businesses we believe we understand." – Warren Buffett

It is difficult to predict the future cash flow if the business is complex and is vulnerable to constant changes. Franchise buyers focus on those businesses in which they have expertise and make an attempt to takeover those firms which are undervalue and have future growth prospects. They try to analyze the extent to which they can create additional value to business through the restructuring of business model and can influence the management to adopt new financial and investment policies according to the need of current market scenario. The main assumptions for franchise buyers are as follows –

a) Investors who understand a business well are in a better position to value it correctly.

b) These undervalued businesses can be acquired without driving the price above the true value

1.5.3 Technical Analysts

Psychology of investors and price movement in stocks can be identified by the price movements, volume of trading, short selling and from other trading information. Most of the investors are driven by emotions. Prediction about future movement in price pattern has been identified on the basis of charts. The main assumptions in technical analysis are following -

a) The market discounts everything

b) Price moves in trends

c) History tends to repeat itself.

Valuation of firms can be used to determine the support and resistance line on price charts.

1.5.4 Information Traders

Current market information has significant effect on the price movement of stocks. Information traders try to make an attempt to crack the new information about the firm before it hit widespread across the business world and try to reap maximum benefit by selling or buying the stock of firm before anyone else. The basic assumption is that information traders can anticipate the strategic and financial information announcement and can analyze the reaction of investors to that information better than other average
investors. Information trader tries to analyze the relationship between the current stock information and its impact on the value of stock. If the information trader remains positive for a company and expected to come a positive news from the management of company which will further increase the value of firm in the market then he may invest even in overvalue company. Valuation can play a central role in investment decision making if the insider trader is confirmed about the impact of new information on the value of firm.

1.5.5 Market Timers

Market timers make an attempt to predict the future price movement of stock and on the basis of these price movement prediction, they make decision to buy or sell the stock. Market timers assume that predicting market movements is easier than selecting the stocks for investments. When the market trend is up, market timers stay in the market and invest into new ventures and when the market is bearish market timers leave the market and withdraw their investment from stocks. Valuation has been used to predict long term returns. Market timers use valuation in the following ways -

a) The overall market itself can be valued and compared to the current level.
b) A valuation model can be used to value all stocks and the results from the cross section can be used to determine whether the market is over or undervalued. For example as the number of stocks that are overvalued using the dividend discount model increase relative to the number that are undervalued there may be reason to believe that the market is overvalued.

1.5.6 Efficient Marketers

Efficient marketers believe that the market price at any point in time represents the best estimate of the true value of the firm and that any attempt to exploit perceived market efficiencies will cost more than it will make in excess profits. Efficient marketers assume that markets aggregate information quickly and accurately that marginal investors promptly exploit any inefficiencies caused by friction like transactions costs and cannot be arbitraged away. For efficient marketers, valuation is a useful exercise to determine why a stock sells for the price that it does. Since the underlying assumption is that the market price is the best estimate of the true value of the company, the objective become determining what assumptions about growth and risk are implied in this market price rather than on finding undervalued or overvalued firms.
1.6 Valuation Approaches
A wide range of valuation models have been used by the financial analysts to value assets. These models may possess different assumptions but have common characteristics. As per Aswath Damodaran (2012) there are three approaches of valuation –

1.6.1 Contingent Claim Valuation Approach
The basis of this approach is that an asset can be valued as an option if payoffs are a function of underlying assets. This approach states that payoff only when

a) An asset can be valued as a call option if the payoff increases as the value of the asset is higher than pre specified level.

b) An asset can be valued as a put option if the payoff increases as the value of the underlying asset is lower than pre specified value for call option

Option pricing models like Binomial option pricing model and Black Scholes option pricing model have been used for valuing the option.

1.6.2 Discounted Cash Flow Approach
Under discounted cash flow approach; analysts forecast present value of future cash flow over a specified period and indefinite time period. Valuation of firm is done under discounted cash flow approach by following procedure: while valuation of firm is done weighted average cost of capital is used as a cost of capital whereas valuation of equity, cost of capital is used for discounting the future cash inflow.

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Calculate Cost of capital (WACC)

Calculate FCF during Explicit period

Calculate FCF during Implicit period

Calculate firm value

Interpret result
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Figure 1.1 Discount Cash Flow Diagram
1.6.2.1 Cost of Capital

We discount the future cash inflow at a rate that is equal to cost of capital. The main method to measure the cost of capital in any firm is Weighted Average Cost of Capital (WACC). To calculate WACC we must have knowledge about following criteria-

a) Capital structure of firm (Proportion of debt and equity in total capital)

b) Cost of debt

c) Cost of equity

**Formula for WACC**

\[
WACC = \frac{W_e \times K_e + W_d \times K_d + W_p \times K_p}{W_e + W_d + W_p}
\]

Where

- \(W_e\) = Proportion of equity in total capital
- \(W_d\) = Proportion of debt in total capital
- \(W_p\) = Proportion of preferential shares in total capital
- \(K_d\) = Cost of debt
- \(K_e\) = Cost of equity
- \(K_p\) = Cost of Preferential shares

1.6.2.2 Free cash flow

It is the cash flow that a firm is expected to earn from its investment in future. For any firm or industry we can categories free cash flow into two periods—

a) Explicit Period – It is the period during which a firm can predict its return from investment with accuracy. Explicit period is considered generally of 5 years to 15 years.

b) Implicit Period – It is the period during which prediction about return from investment become tough. Many future events can have impact upon the return. For implicit period we calculate return from the end of explicit period to infinity

**How to calculate FCF (Free cash flow)**

FCF = Operating free cash flow + Non – Operating cash flow

**Operating free cash flow** = NOPLAT (Net operating profit less adjusted taxes) – Net investment
$\text{NOPLAT} = \text{EBIT} (\text{Earnings before interest and taxes}) - \text{Taxes on EBIT}$

$\text{EBIT} = \text{PBT} + \text{Interest expenses} - \text{Interest Income} - \text{Non operating income}$

$\text{Taxes on EBIT} = \text{Tax provision from income statement} + \text{Tax shield on interest expenses} - \text{Tax on interest income} - \text{Tax on non-operating income}$

$\text{Net Investment} = \text{Gross investment} - \text{Depreciation}$

**Free cash flow during explicit forecast period**

$$[\text{FCF}_1 / (1+WACC)^1] + [\text{FCF}_2 / (1+WACC)^2] + \ldots + [\text{FCF}_t / (1+WACC)^t]$$

**Free cash flow during implicit period**

$$[\text{FCF}_{t+1} / (WACC - g)]$$

### 1.6.2.3 Value of Firm

Value of firm can be derived from the following method:

Value of firm = Present value of free cash flow during explicit forecast period + Present value of free cash flow during implicit forecast period

**Total Value of firm**

$$\text{Total Value of firm} = [\text{FCF}_1 / (1+WACC)^1] + [\text{FCF}_2 / (1+WACC)^2] + [\text{FCF}_3 / (1+WACC)^3] + \ldots + [\text{FCF}_t / (1+WACC)^t] + [\text{FCF}_{t+1} / (WACC - g)]$$

If after some period, firm achieve hyper growth (Growth higher than normal growth) then we will apply following formula for that period

$$[\text{FCF}_{t+1} (1+g) / (1+WACC)^1] + [\text{FCF}_{t+2} / (1+WACC)^2] + [\text{FCF}_{t+3} / (1+WACC)^3] + \ldots + [\text{FCF}_{t+n} / (1+WACC)^n]$$

Factors that affect discounted cash flow

a) Investments

b) EBIT

c) Taxes

d) Depreciation

### 1.6.2.4 Limitations of Discounted Cash Flow Valuation Approach

The following conditions have been described by Aswath Damodaran (2012)\(^8\) under which discounted cash flow technique is not successful
a) Firms in trouble: Discounted cash flow technique cannot be used successfully for the firms where the high uncertainty about future earnings exists. The firms with negative earnings have expectations of losing money in near future. These distressed firms have a high probability to face bankruptcy in near future. Anticipating future cash flow for distressed firms is difficult. Survival of firms becomes difficult with negative earnings. Valuation of firm is considered as an ongoing concept and is based upon the positive cash flow earning potential of firms for their investors. Examine the value of firm is not possible until and unless cash flow of firm does not turn into positive. Negative cash flow of firm will yield a negative value for firm in the market. Investors will also not be interested to invest in distressed firms.

b) Cyclical Firms: Economic boom and economic recession has significant impact on the cash generated potential of firms. Uncertainty about stable positive cash flow is high. Most of the cyclical firms seem to be troubled one at the time of economic recession as their earnings and cash flow turn into negative. It is difficult task for the analysts to predict accurately the timing of economic recession and economic downturn. The prediction about the extent to which the economic cycles have impact on earnings of firms is also a daunting task. This affects the valuation of cyclical firms. The same firm may have high valuation during economic boom and have low valuation during economic recession. The probability of biasness for cyclical firms should be considered during valuation.

c) Firms with unutilized assets: The valuation through discounted cash flow technique is calculated on the basis that all the assets have future cash flow generating capacity. It is not possible to calculate the value of unutilized assets through discounted cash flow method as they do not generate any earnings and cash flow. Even for underutilized assets, the valuation cannot be predicted accurately as their cash generating potential is underutilized. They are not able to generate cash with full potential. Their valuation can be done by making an assumption that these assets are optimally utilized. The value of these assets can
always be obtained externally and added on to the value obtained from discounted cash flow valuation.

d) Firms with patents or product options: Sometime firms have intangible assets like patents and license which are not utilized and do not earn any current monetary benefits from those intangible assets and their probability of generating future cash flow is also negligible. Under such scenario, valuation obtained from discounted cash flow technique will not be correct. It will lower the real value of firm as it does not include any cash flow from unutilized intangible assets. This problem can be resolved by valuing these unutilized intangible assets in open market or by using option pricing models and then adding on to the value obtained from discounted cash flow valuation.

e) Firms in the process of restructuring: During the corporate restructuring of firms, management of firm may sell of its existing assets, acquire new assets and may also change their capital structure. Management may also change ownership structure and HR policies of firm. Prediction of future cash flow become difficult and become more vulnerable to financial risk. Valuation of firm through discounting cash flow technique on the basis of historical cash flow data may create a misleading picture for the shareholders about value of firm. Valuation of those firms may be possible if analysts can be capable to calculate the effect of these changes on expected cash flow of firm and cash flow is discounted to new discount rate that reflects the new financial and business risk of firm.

f) Firms involved in acquisitions: During acquisition of firm, discounted cash flow valuation technique is used to calculate the value of target firm. There are two major issues of concern that analysts face during value of target firm. The first issue is related with synergy. Analysts are always interested to know whether synergy has been generated between two firm or not and if synergy exists then to what extent it affects the value of both the firms.

\[ \text{Value of new firm} > \text{Value of acquirer firm} + \text{Value of target firm} \]
The second issue is to estimate the effect of change in management of firm during hostile takeover over cash flow and firm reputation in market. The effect of the change should be incorporated into the estimate of future cash flows and discount rates and ultimately into firm value.

g) Non-listed firms: The biggest hurdle in applying discounted cash flow valuation technique is to calculate the value of non-listed firms is the estimating of discount rates. The stocks of such firms are not listed in stock exchange so it is not possible to estimate the risk parameters from historical prices of stock. This problem can be resolved by considering the measure of risk to accounting variable which is available for other comparable firms.

1.6.3 Relative Valuation Approach

Under this valuation approach, valuation of assets is done on the comparative basis of the market value of its similar assets possessing similar risk. Relative valuation can be done with less information and more quickly than intrinsic valuation and is more likely to reflect the market mood of the moment. To compare the pricing of “similar” firms in the market, the market value of a company can be standardized relative to how much it earns, its accounting book value, to revenue generated, or to a measure specific to a firm or sector. Analysts and investors are endlessly inventive when it comes to using relative valuation. Some compare multiples across companies, while others compare the multiple of a company to the multiples it used to trade in the past. While most relative valuations are based upon comparables, there are some relative valuations that are based upon fundamentals.

1.6.3.1 Using Fundamentals

The first approach of relative valuation method is to relate the financial multiples to fundamentals about the firm. Financial multiples like growth rate in earnings, payout ratio, P/E ratio etc can be considered. To estimate the multiples same information is required as in discounted cash flow valuation technique. Both the valuation technique yields approximately same output. This approach of relative valuation method examine the relationship between multiples and fundamentals and also explore the impact of characteristics of firms on multiples.
For Example

a) What will be the effect of changing profit margins on the price / sales ratio?

b) What will happen to price-earnings ratios as growth rates decrease?

c) What is the relationship between price-book value ratios and return on equity?

1.6.3.2 Using Comparables

Valuation of firms by using comparables is another major approach of relative valuation technique. Under this approach, multiples based comparison is done between the firm and its competitive firms in the same industry. How competitive firms are valued in the market have been compared with the particular firm. It also has been examined how the firm was valued in the previous years. Finding similar and comparable firms is a big challenge and often those firms have been selected that are different from the firm being valued on one dimension or the other. Under such scenario, differences across firms on the basis growth, risk and cash flow measures have been controlled either explicitly or implicitly. Control on various variables has been done either by using industry averages or by applying multivariate regression models after identifying the relevant variables.

1.6.3.2.1 Cross Sectional versus Time Series Comparisons

In most cases, analysts price stocks on a relative basis by comparing the multiple it is trading to the multiple at which other firms in the same business are trading. In some cases however, especially for mature firms with long histories, the comparison is done across time.

1.6.3.2.1.1 Cross Sectional Comparisons

Cross sectional comparison is performed by making comparisons on the basis of multiples like P/E ratio of a firm with its competitive firm associated with the same industry. Assumptions have been formulated about the firm being valued and its comparable competitive firms. The output of cross sectional comparison can vary depends upon the formulated assumptions. If the firm being valued is assumed to be similar to average firms of same industry and it has a multiple P/E ratio lower than other average firms of same industry then the firm would be assumed as a cheaper firm. On the other hand, if the firm
being valued is assumed to be more riskier than the average firm in the industry then the firm should be assumed to trade at a multiple higher than other firms in the business

1.6.3.2.1.2 Time Series Comparisons
Comparison across time is done by comparing the current multiples of firm with its historical multiples. To performing comparison across time it is to be assumed that firm has not changed its fundamentals over time. Historical data of last years of same company has been considered for time series comparisons. Comparing multiples across time can also be complicated by changes in the interest rates over time and the behavior of the overall market. Earnings and profitability plays an important role in valuation. Analysts keep two questions in mind while valuation –
   a) How profitable is a firm?
   b) What did the firm earn on its invested assets?

1.6.4 Role of multiples in valuation
Multiples play an important role in while calculating relative valuation of firms. Generally there are two types of multiples – equity multiples and firm multiples. For equity multiples, the numerator and denominator must be equity value and similarly for firm multiples, the numerator and denominator must be firm value. During valuation, multiples must be defined uniformly across all the companies.

1.6.4.1 Flaws in P/E Multiples
P/E multiples are the equity multiples. There are some flaws in P/E multiples that must be considered in valuation study
   a) They are systematically affected by capital structure.
   b) P/E ratio is based on earnings which includes many non operating items like write off and restructuring charges.

Martin Fridson and Fernando Alvarez (2002)\textsuperscript{9} stated that financial analysts discovered net income as efficient tool of valuation. They observed that two companies associated with the same industry may have similar income but different total enterprise values. Similarly credit analysts discovered that two companies may earn same income to cover same
interest expense but have highly dissimilar risks of defaulting on their debt in the future. Value of firm is a function of three variables –

a) Capacity of firm to generate cash flow

b) Expected growth in cash flow

c) Uncertainty associated with cash flow

Firm with high potential of generating cash flow, higher growth rates and less risk should have high values than the firms with low potential of generating cash flow, lower growth rates and high risk.

1.6.4.2 Enterprise Value Multiples

Enterprise value multiples play a significant role in determining firm value. EV/EBITDA and EV/Sales are main two Enterprise value multiples used determining firm value.

1) EV/EBITDA - The enterprise value measures the market value of the operating assets of company and EBITDA is the cash flow generated by the operating assets. Following factors play an important role in determining EV/EBITDA –

a) Tax Rate – Tax rates and EV/EBITDA has inverse relationship. The firms with lower tax rates have high value of EV/EBITDA multiples whereas the firms with high tax rates have low value of EV/EBITDA multiples.

b) Depreciation and Amortization – The firms that earn their major portion of EBITDA from depreciation and amortization have lower value of EV/EBITDA multiples and the firms that earn their smaller portion of EBITDA from depreciation and amortization have high value of EV/EBITDA multiples.

c) Cost of Capital – Cost of capital has inverse relationship with EV/EBITDA multiples. Firms with high cost of capital has low EV/EBITDA multiples.

d) Expected Growth – Expected growth of firms have direct relationship with EV/EBITDA multiples. Firms with high expected growth have high value of EV/EBITDA multiple whereas the firms with low expected growth have low value of EV/EBITDA multiples.

e) Reinvestment Requirement – Reinvestment requirements have inverse relationship with EV/EBITDA multiples. If Major portion of EBITDA is reinvested then the value of EV/EBITDA multiple will be low and if
smaller portion of EBITDA is reinvested then the value of EV/EBITDA multiple will be high.

2) EV/Sales - This Enterprise multiple has been gaining popularity over Price/Sales multiple and has been considered as more accurate in valuation than Price/sales ratio. The following factors affect EV/Sales multiple –
   a) Expected growth of firm is positive correlated with EV/Sales multiple. With increase in expected growth of firm, EV/Sales of firm also increase.
   b) Reinvestment rate has inverse relationship with EV/Sales. With increase in reinvestment rate, EV/Sales decrease.
   c) EV/Sales multiple has inverse relationship with risk in investment. Higher is the risk in investment, lower is the EV/Sales.
   d) Operating margin has direct relationship with EV/Sales. Higher is the operating margin higher is the EV/Sales multiple for a firm.

Enterprise value can be improved by three methods
   a) By increasing the sales of company
   b) By reducing costs
   c) By reducing Capital lockup

1.7 Operating Efficiency

In the recent research, Ohlson (1995)\textsuperscript{10} shows that the value of a firm can be expressed as a function of the firm's book value and future abnormal earnings or future return on equity in excess of the cost of capital. Another research study by Feltham and Ohlson (1995)\textsuperscript{11} shows that it is the operating activities that yield abnormal earnings. These studies suggest that understanding firm value requires forecasts of future return on operating assets. Operating efficiency plays a big role in firm’s fortune. As per most of the financial analysts, in the long run, operations are considered as the core source of cash. If the cash generated from operations is not sufficient to pay the dividends to investors then that company will not remain an attractive opportunity for investors to invest. Creditors will not remain interested to continue their financial support to company if company’s cash is not sufficient to repay the loan (Libby Libby, Short, 2011)\textsuperscript{12}. A change in profit margin may reflect a change in operating efficiency or a change in accounting conservatism.
Increases (decreases) in profit margin from increases (decreases) in efficiency should result in an increase (decrease) in profitability one year ahead. Operational efficiency yet a dimension of the usefulness of the ratio analysis, relevant from the management’s viewpoint, are that it highlights the level of competence & effectiveness in the management and asset utilization. The various activity ratios measure this kind of operational efficiency. In fact, the solvency of an organization dependent upon the sales revenues generated by its assets utilization - total as well as its components. Activity ratios include those ratios, which highlight upon to activity and operational efficiency of the business firm. Operational efficiency refers to the profitable, efficient and judicious use of resources (financial) available to an organization in perfect consonance with clearly laid-down financial policies relating to the operation. In order to examine the efficiency and profitability in making use of resources as well as the wisdom and farsightedness in observing the financial policies laid down in this regard, certain ratios are being used and they are collectively called as Activity Ratios or Performance Ratios. It is significant to note that these ratios are always expressed as turnover. All ratios coming into this category are calculated with reference to sales or cost of sales and are expressed in number of times, i.e., rate of turning over or rotation. The financial ratios can be calculated to judge the operational efficiency of an organization or the effectiveness of assets utilization. The operating efficiency of an organization in terms of the efficient utilization of the resources is reflected in net profit margin. It has been observed that although a high profit margin is a test of better performance a low margin does not necessarily imply a lower rate of return on investments/assets turnover. Therefore, the overall operating efficiency of an organization can be assessed on the basis of a combination of the two. Fairfield and Yohn (2001)\textsuperscript{13} decompose changes in return on net operating assets into changes in profit margin and changes in asset turnover and find that only changes in asset turnover are useful for predicting future profitability changes. They argue that changes in asset turnover are more persistent than changes in profit margin, thereby leading to higher firm value. This argument corresponds with Penman’s text on financial statement analysis (2007)\textsuperscript{14}, in which he indicates that firms can lever up margins by using operating assets more efficiently to generate sales. Nissim and Penman (2001)\textsuperscript{15} and Penman and Zhang (2002)\textsuperscript{16} also show that changes in asset turnover are
related to current and future earnings changes. Many research studies examined whether equity investors and analysts impound the predictive information in changes in asset turnover. The studies suggested that investors and analysts do not fully impound information in changes in asset turnover. Greene and Segal (2004)\(^{17}\) argue that “cost inefficiency affects profits and growth through the negative effect of wasted resources on earnings and cash flows.” This implies that more operationally efficient firms should be more profitable. Following prior researches, sales revenue can be used as sole output variable because it is a primary source of earnings and cashflows generated from firms’ operating activities. Fairfield and Yohn (2001)\(^{18}\) indicates that returns derived from capital are likely to persist because of frictions in the movement of capital in the economy. Moreover, as we discuss above, studies have shown that current changes in firms’ efficiency are predictive of future changes in profitability

### 1.7.1 Rule of Thumb

Avoid investment in firms with rising net income but falling cash flow from operations. The firm’s ability to generate cash from operating activities is measured by Quality of income ratio. Higher the quality of income ratio, greater the ability of generating cash from operating cash inflows.

### 1.7.2 Relationship between Operating Efficiency and Profitability of firm

According to Libby/Libby/Short (2011)\(^{19}\), Operating efficiency of firm has a significant impact on profitability. DuPont model is used to show the impact of operating efficiency on profitability of firm.

**DuPont Model**

DuPont Model is used to calculate Return on Equity (ROE) of firm. Under DuPont model, ROE of firm is calculated on the basis of three important financial ratios – Net Profit Margin, Asset Turnover and Financial Leverage

\[
\text{ROE} = \text{Net Profit Margin} \times \text{Asset Turnover} \times \text{Financial Leverage}
\]
The above ratio represents the effectiveness of firms’ operating activities. To reap the profitability, firms adopt two strategies on the basis of the operating efficiency

a) Product Differentiation
b) Low Cost Strategy

1.7.3 Factors affecting the Operating performance of company

Operating performance of company has become vulnerable in this frequently changing business environment. With globalization, cross border economic events has significant effect on operating performance of company. Some of the micro and macro economic factors that have effect on operating performance of company are following –

1.7.3.1 Economic Factors

Any firm’s operating performance significantly dependent upon the global economic conditions. More the uncertainty in global economic conditions more is the risk of delaying in investing future projects by the firms. Negative earnings of company, increasing unemployment, tight credit policies, decreasing demand of products, increasing cost of oil and fuel are some of the major outcomes of gloomy global economic conditions. Global economic slowdown adversely hit the investor’s confidence and set a negative U-turn in investing trends of corporate as well as investors. Investors in the company are more interested in future and long term enterprise value. The key factors of operating performance in the Enterprise Value are as following –

a) Growth
b) Profitability
c) Capital utilization through efficient operations
Management can increase the long term enterprise value when they generate and ensure profitable growth. Enterprise value is determined by the difference in expected future financial performance and capital employed by the investors.

1.7.3.2 Macro Economic Factors

a) Gross domestic product — GDP is a measurement of total final goods and services produced within a country in a given period. Real GDP takes nominal GDP and adjust it for inflation. GDP can also be taken as a measure of success and strength of a country. GDP of country affects the growth of industry and business of firms. If the GDP is high then it signifies that industry has been growing at a good pace and firms are reaping profitable operating income whereas if the GDP is low then it signifies that industry has been growing at a slower pace and firms are reaping operating income which is not satisfactorily profitable.

b) Unemployment rate — Unemployment rate can be defined as a social phenomenon in which a part of the working-age citizens cannot employ appropriate to their abilities and qualifications. When unemployment rate is high, the Fed government decreases the interest rate which in turn increases the stock market prices.

c) Interest rate — High interest rates reduce the present value of future cash flows and contribute to the reduction of investment activities. In general decrease in interest rates will cause the withdrawal of funds from the debt securities into equity securities.

d) Budget deficit — Budget deficit signifies the difference between government spending and revenues. Increasing the budget deficit mainly affects the capital market. Stocks and real economy are interdependent. High budget deficit leads to hike in interest rates which further raise the cost of capital of firm. High cost of capital put restraints on the profitability of firm. Low profitability of firm leads to fall in stock price of firm.

e) Inflation — The price index measures the average price level. Inflation means a rise of price level in the general. One of the most common measure of inflation is the consumer price index known as the CPI. CPI is a measure of the average price change of the consumer goods basket and service that people pay in a certain
period of time. The research conducted by Lifang, Paresh and Zheng (2010)\textsuperscript{20} reveal that unexpected inflation announcements negatively affect stock returns while expected inflation has very little impact in the announcement study. The research was conducted in the medium-term study.

f) Sentiments — Positive or negative sentiments will greatly affect the amount of traded securities, and the direction in which prices will move. Baker and Wurgler (2003)\textsuperscript{21} said that their main empirical finding is that the cross-section of future stock returns is conditional upon beginning of period proxies for investor sentiment. Specifically, when sentiment appears to be high, stocks that are likely to be relatively attractive to optimists and speculators and at the same time unattractive to candidates for arbitrage.

g) Sector analysis — “\textit{There is always a bull market somewhere.}”
Sector analysis is as important as macroeconomic analysis. Sector diversifying investment strategies not only diversify the risk but also explore the “mini – bull” sectors. During bull market and bear market, investors try to make an attempt to reap more benefits than averages by exploiting the strongest sector. To beat the market by identifying strongest sector is a big challenge for investors. Each sector is variously sensitive to economic trends. Classifying companies by sectors will diversify specific risk. It would be ideal to buy companies that are negatively correlated with each other.
1.8 Concluding Remarks

In this chapter, an overlook of concepts related to valuation and operating efficiency have been given. The present research is an attempt to see if the operating efficiency indicators of business corporations have any bearing on their valuation or not. To understand and analyze previous research work in this area and to identify the gaps in the research attempts various empirical studies were examined and their brief review is presented in the next chapter. The succeeding chapter gives an elaborated view of the objectives for the present research and the research design to accomplish these objectives. In the next two chapters, the detailed analysis of the data pertaining to study variables and their interpretation has been reported. Finally, in the last chapter the whole research process undertaken to achieve the research objectives is summarized and the eventual findings of research are recorded. Also the limitations of the present research attempt and some related research areas for the further research have been suggested in the end.
REFERENCES


5. Damodaran, Aswath (2012) ibid


7. Damodaran, Aswath (2012) ibid1

8. Damodaran, Aswath (2012) ibid2


18. Fairfield, Patricia M. And Terl Lombardi Yohn (2001) ibid

19. Libby, Short (2011) ibid
