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FINANCIAL MODELING

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About Financial Modeling

The task of building a model (usually a spreadsheet) depicting financial statements/ business model, which can help you in decision making.

For Example, if you are looking to invest in a blockbuster IPO of latest internet company (Lets say Zynga), how do you analyze.

It could also be used to represent the performance of a business, a project, or any other investment.

Useful tools that allow business options and risks to be evaluated in a cost-effective manner against a range of assumptions.

Helps in identifying optimal solutions and evaluating financial returns.

It could mean different things to different users Either accounting, corporate finance, quantitative finance applications.

Who uses Financial Modeling ?

Anybody dealing with any decision related to money . If you are involved in financial decision making/ planning related to large corporate, then you would definitely need financial modelling day in and day out. Financial modeling is a mandatory activity for Investment Bankers, Bankers, Project Finance Persons, Equity Research , Private Equity, Venture Capital, Buy Side and Sell Side Research.

What are the steps in building a Financial Model?

Data collection – This is where the bankers start there work . They goes to the client, collects the data like revenue, growth, investments, need for money, etc. and prepare income statement, balance sheet and cash flow statements. Rather than this, they also collect directly financial statements from the company of which they are valuating.

Starting Making Models –This is where you need a complete financial model. And the first real step to doing that is to think of a structure of analysis. Thankfully finance has some basic theories in place and you can rely on them to proceed.

Building a good model requires a combination of various skills :-

- Accounting
- Corporate Finance
- Industry Knowledge
- Excel
- Reading Financial Reports
- Corporate Valuation Methodologies

What are the limitations of models?

The results from financial model we do not get true value. The financial modelling depends upon input, which we placed on different formulas to get output. The result we get is uncertain. In financial modelling we take assumption, what will be the assumption that will be the result. We forecast in the coming years that the company or market will generate how much cash, but actually they can generate much or less the projected data. If the collected data are inadequate or inaccurate then we will get wrong answer.

For example, if we talk about our institution we have maximum 15 students to teach but if we take 500 students as a input data then we get output different from output from 15 students because the awe have taken different so the result will be different.

FAQs

Q. *What is Operating Income ?*

Answer :- *Operating income is defined to be revenues less operating expenses and should be before financial expenses (interest expenses, for example) and capital expenses.*

Q. *In computing the tax on the operating income, there are three choices that you can use - effective tax rate (about 29% for the average US company in 2003), marginal tax rate (35-40% for most US companies) and actual taxes paid?*

a) Which one should you choose?

Answer :- Let's start with what you cannot use - the actual taxes paid. Why not? The actual taxes paid will reflect the fact that you save on taxes when you make interest payments. The problem, however, is that you have already counted the tax benefits in your cost of capital (by using the after-tax cost of debt).

b) What happens if you are a multinational and are in several countries with very different tax rates?

Answer :- While some would push for an average tax rate, weighted by the income in each country, I think it makes far more sense to use the marginal tax rate of the country the company is domiciled in as a floor. After all, income earned in countries with lower tax rates than the domestic tax rate eventually has to be repatriated back to the domicile at which point it will be taxed. It is a tougher call for countries with higher marginal tax rates than the domestic tax rate. Here, it does make sense to use a weighted average.

c) What happens if you are reporting an operating loss?

Answer:- In the year of the operating loss, the tax rate used in computing the after-tax operating income and the after-tax rate cost of debt should be zero. As you project the earnings into future years and they turn positive, you first have to cover your net operating losses from prior years, during which period your tax rate will still be zero. When you use up your net operating losses, your tax rate will converge on the marginal tax rate.

Q. Depreciation and amortization includes a number of different items. Some of them are tax deductible (like conventional depreciation on assets) but some are not (like amortization of goodwill). In computing depreciation, should you include all depreciation and amortization or only tax-deductible depreciation and amortization?

Answer :- It is only tax deductible depreciation and amortization that affects your cash flows. Consequently, you should compute the operating income after tax deductible depreciation and add back only the tax deductible depreciation. For example, assume that you have EBITDA of 500 million, tax deductible depreciation of $ 100 million and non-tax deductible amortization of 50 million. You should use operating income of 400 million (500 less 100) to compute your after tax operating income and then add back only the tax deductible depreciation. What, you may wonder, is the harm in using all depreciation since you add it back anyway? If you subtract out 150 from the EBITDA to get an operating income of 350 million, compute the taxes on 350 million and then add back the entire depreciation and amortization back, you will give the non-tax deductible amortization a tax benefit.

Q. Many companies grow through acquisitions, some of which they pay for with cash and some with stock. In computing capital expenditures, should you include any of the acquisitions, only acquisitions funded with cash or all acquisitions?

Answer :-

The basic rule is both simple and logical. If you want to count the growth from acquisitions in your top line earnings, you have to consider the acquisitions, whether they be paid for with cash or stock, as part of your cap ex. If you do not do this, you will be giving companies that grow through acquisitions the equivalent of a free lunch - growth without cost. The argument that stock based acquisitions do not affect cash flows is an absurd one, since all you are doing is skipping a step. If you had issued that same stock to the market and used the cash to fund the acquisitions, it would have been a cash acquisition.

Q.Most of us have seen the equations for sustainable growth. In particular, the growth in earnings per share = (1 - payout ratio) * Return on equity?

a)Can you use the same equation to compute growth in operating income?

Answer :- No. When computing growth in operating income, the equation is slightly different:

Expected growth in operating income = {(Cap ex - Depreciation + Change in non-cash Working capital)/ After-tax Operating Income}* Return on capital

Return on capital = After-tax Operating Income/ (Book value of debt + Book value of equity)

b)Under what assumptions will this sustainable growth rate also be equal to your expected growth rate?

Answer :- These equations hold only if the return on equity and capital on existing assets remain unchanged over time. If the return on equity or capital is expected to change over time, there will be a second component to the expected growth rate equation. For instance, assume that your return on capital this year is 10% and that you expect it to improve to 12% next year on exiting assets and that you plan to reinvest 50% of your operating income back next year into new projects on which you expect to make 12%.

c)Increasing the amount you reinvest back into the business (reduce the payout ratio or increase the reinvestment rate) will increase the growth rate for any company that is profitable. Will it also increase value?

Answer :- No. It depends upon whether the return on capital (equity) is greater that the cost of capital (equity). If the return on capital is less than the cost of capital, increasing the reinvestment rate will increase growth but reduce value. If it is equal, increasing reinvestment will not affect value. It is growth with excess returns that is the source of value.

Q. The conventional accounting definition of working capital is current assets minus current liabilities and includes cash and marketable securities in current assets and short term debt in current liabilities.

a) Should you consider all cash, operating cash or no cash at all when you compute working capital?

Answer :- The entire reason we consider working capital when computing cash flows is because investments in working capital are considered wasting assets that don't earn a fair rate of return. Thus, money invested in inventory is wasted because inventory sits on your shelves and does not earn a return. Until a few decades ago, the same could be said of cash that would be invested in a checking account. Today, cash at most reasonably run publicly traded firms is invested in commercial paper or treasury bills, earning a low but a fair rate of return (given the lack of risk in these investments). Hence, cash is no longer a wasting asset at most firms and should not be considered part of working capital.

b) Should you consider short term debt as part of current liabilities?

Answer :- All interest bearing debt, whether short term or long term, should be considered part of debt for computing cost of capital. Consequently, short term should not be considered part of current liabilities to compute working capital. Supplier credit, accounts payable and accrued items (salaries, taxes etc), should be considered as part of current liabilities.

Q. How long can high growth last ?

Answer :- Since it is not growth that creates value but excess returns, this question can really be framed as: "How long will excess returns continue?" Since excess returns are conditioned on the existence of barriers of entry, the larger and more sustainable the barriers to entry in a business, the longer the high growth/excess return period can last. There are other pragmatic considerations. As firms get larger and acquire larger market shares, there is a limit on how much longer they can continue to grow at rates higher than the economy. Hence, a firm might find its growth tapering off even before the excess returns go to zero.

Q.How do you value a company?

Answer :- This question, or variations of it, should be answered by talking about 2 primary valuation methodologies:

Intrinsic value (discounted cash flow valuation)

Relative valuation (comparables/multiples valuation)

Intrinsic value (DCF) – This approach is the more academically respected approach. The DCF says that the value of a productive asset equals the present value of its cash flows. The answer should run along the line of "project free cash flows for 5-20 years, depending on the availability and reliability of information, and then calculate a terminal value. Discount both the free cash flow projections and terminal value by an appropriate cost of capital (weighted average cost of capital for unlevered DCF and cost of equity for levered DCF). In an unlevered DCF (the more common approach) this will yield the company's enterprise value (aka firm and transaction value), from which we need to subtract net debt to arrive at equity value. Divide equity value by diluted shares outstanding to arrive at equity value per share.

Relative valuation (Multiples) – The second approach involves determining a comparable peer group – companies that are in the same industry with similar operational, growth, risk, and return on capital characteristics. Truly identical companies of course do not exist, but you should attempt to find as close to comparable companies as possible. Calculate appropriate industry multiples. Apply the median of these multiples on the relevant operating metric of the target company to arrive at a valuation. Common multiples are EV/Rev, EV/EBITDA, P/E, P/Book, although some industries place more emphasis on some multiples vs. others, while other industries use different valuation multiples altogether. It is not a bad idea to research an industry or two (the easiest way is to read an industry report by a sell-side analyst) before the interview to anticipate a follow-up question like "tell me about a particular industry you are interested in and the valuation multiples commonly used."

Q. DCF Valuation Fundamentals

Answer :- Discounted cash flow valuation is based upon the notion that the value of an asset is the present value of the expected cash flows on that asset, discounted at a rate that reflects the riskiness of those cash flows. Specify whether the following statements about discounted cash flow valuation are true or false, assuming that all variables are constant except for the variable discussed below:

A. As the discount rate increases, the value of an asset increases.

B. As the expected growth rate in cash flows increases, the value of an asset increases.

C. As the life of an asset is lengthened, the value of that asset increases.

D. As the uncertainty about the expected cash flows increases, the value of an asset increases.

E. An asset with an infinite life (i.e., it is expected to last forever) will have an infinite value.

Q. What is the appropriate discount rate to use in an unlevered DCF analysis?

Answer :- Since the free cash flows in an unlevered DCF analysis are pre-debt (i.e. a helpful way to think about this is to think of unlevered cash flows as the company's cash flows as if it had no debt – so no interest expense, and no tax benefit from that interest expense), the cost of the cash flows relate to both the lenders and the equity providers of capital. Thus, the discount rate is the weighted average cost of capital to all providers of capital (both debt and equity).

The cost of debt is readily observable in the market as the yield on debt with equivalent risk, while the cost of equity is more difficult to estimate.

Cost of equity is typically estimated using the capital asset pricing model (CAPM), which links the expected return of equity to its sensitivity to the overall market (see WSP's DCF module for a detailed analysis of calculating the cost of equity).

Q. *What is typically higher – the cost of debt or the cost of equity?*

Answer :- The cost of equity is higher than the cost of debt because the cost associated with borrowing debt (interest expense) is tax deductible, creating a tax shield. Additionally, the cost of equity is typically higher because unlike lenders, equity investors are not guaranteed fixed payments, and are last in line at liquidation.

Q. *How do you calculate the cost of equity?*

Answer :- There are several competing models for estimating the cost of equity, however, the capital asset pricing model (CAPM) is predominantly used on the street. The CAPM links the expected return of a security to its sensitivity the overall market basket (often proxied using the S&P 500). The formula is:

Cost of equity (re) = Risk free rate (rf) + β x Market risk premium (rm-rf)

Risk free rate: The risk free rate should theoretically reflect yield to maturity of a default-free government bonds of equivalent maturity to the duration of each cash flows being discounted. In practice, lack of liquidity in long term bonds have made the current yield on 10-year U.S. Treasury bonds as the preferred proxy for the risk-free rate for US companies.

Market risk premium: The market risk premium (rm-rf) represents the excess returns of investing in stocks over the risk free rate. Practitioners often use the historical excess returns method, and compare historical spreads between S&P 500 returns and the yield on 10 year treasury bonds.

Beta (β): Beta provides a method to estimate the degree of an asset's systematic (non-diversifiable) risk. Beta equals the covariance between expected returns on the asset and on the stock market, divided by the variance of expected returns on the stock market. A company whose equity has a beta of 1.0 is "as risky" as the overall stock market and should therefore be expected to provide returns to investors that rise and fall as fast as the stock market.

Q. *How would you calculate beta for a company?*

Answer :- Calculating raw betas from historical returns and even projected betas is an imprecise measurement of future beta because of estimation errors (i.e. standard errors create a large potential range for beta). As a result, it is recommended that we use an industry beta. Of course, since the betas of comparable companies are distorted because of different rates of leverage, we should unlever the betas of these comparable companies as such:

$$\beta \text{ Unlevered} = \beta(\text{Levered}) / [1 + (\text{Debt/Equity}) (1-T)]$$

Then, once an average unlevered beta is calculated, relever this beta at the target company's capital structure:

$$\beta \text{ Levered} = \beta(\text{Unlevered}) \times [1 + (\text{Debt/Equity}) (1-T)]$$

Q. ***How do you calculate unlevered free cash flows for DCF analysis?***

Answer :- Free cash flows = Operating profit (EBIT) * (1 –tax rate) + Depreciation & Amortization – changes in net working capital – capital expenditures.

Q. ***What is the appropriate numerator for a revenue multiple?***

Answer :- The answer is enterprise value. The question tests whether you understand the difference between equity value and enterprise value and their relevance to multiples. Equity value = Enterprise value – Net Debt (where net debt = gross debt and debt equivalents – excess cash).

EBIT, EBITDA, unlevered cash flow, and revenue multiples all have enterprise value as the numerator because the denominator is an unlevered (pre-debt) measure of profitability.

Conversely, EPS, after-tax cash flows, and book value of equity all have equity value as the numerator because the denominator is levered – or post-debt.

Q. ***How would you value a company with negative historical cash flow?***

Answer :- Given that negative profitability will make most multiples analyses meaningless, a DCF valuation approach is appropriate here.

Q. ***When should you value a company using a revenue multiple vs. EBITDA?***

Answer :- Companies with negative profits and EBITDA will have meaningless EBITDA multiples. As a result, Revenue multiples are more insightful.

Q. How do you decide which approach to use to estimate terminal value?

Answer :- Of the three approaches, the one that is least defensible is the use of a multiple to estimate terminal value. Since this multiple comes from looking at how comparable companies trade in the market, it effectively converts the discounted cash flow valuation into a relative valuation. Liquidation value, which in practice often becomes equated with book value, and terminal value, which comes from assuming a stable growth rate forever, will converge if we assume that the firm makes no excess returns in perpetuity. If you do assume that a firm can make excess returns in perpetuity, liquidation value will generally yield a more conservative estimate of value than the stable growth model. If you are valuing a private company where you are uncomfortable assuming that the firm will be a going concern forever, liquidation value is the more sensible choice. If you are valuing a publicly traded company with significant competitive advantages and potential excess returns, it is best to stick with a going concern assumption and value the firm assuming a constant growth rate forever

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Q.***Assuming that you use the perpetual growth model, can the stable growth rate be negative?***

Answer :- The only constraint on the stable growth rate is that it be less than the growth rate of the economy in which you operate. If you are working with nominal cash flows, this would be a nominal growth rate in the economy; with real growth rates, it would be a real growth rate for the economy. The growth rate can be 0% or negative. In fact, given what we know about firm life cycles where firms peak and then become smaller over time, you can argue that assuming a negative growth rate is more realistic than assuming that your firm will keep getting larger over time.

Q.*Debt can be defined in many ways - total liabilities, total debt or long term debt. What would you include in debt?*

***Answer* :-** The debt in the cost of capital is the debt used to fund the operations and investments of the firm. Using this rationale, it should include all interest bearing debt, short term as well as long term. Non-interest bearing liabilities such as accounts payable, supplier credit and accrued items should be incorporated into working capital and should not be counted as debt.

To the extent that firms fund their operations with off-balance sheet debt, you should try to incorporate these borrowings as well into debt. While this may be difficult to do when firms are deceitful, you can, at the minimum, bring the present value of operating lease commitments into your debt.

One final comment, Analysts are often tempted to include more items in debt, assuming that this is the conservative thing to do. In reality, defining debt much more broadly will increase the debt ratio and reduce the cost of capital. This, in turn, will increase value and not decrease it.

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Q.*Why do we use market value weights to come up with a cost of capital instead of book value weights?*

Answer :- While we can present pragmatic arguments for using market value - that market value weights will always be positive whereas book equity can turn negative or that the costs of equity and debt represent current costs and the values used for each should be a current market value as well - the real reason is a little deeper. Every discounted cashflow valuation is ultimately a hypothetical acquisition valuation, where we buy all of the debt and the equity in the firm and acquire the business. Since we have to pay market values when we buy debt and equity, we should market values to compute the weights.

Q. In private businesses, neither debt nor equity is traded. In most publicly traded firms, equity has a market value but a significant portion (or often all) of the debt is not publicly traded?

a) How do you get market value of debt when all or even some of your firm's debt is bank debt and not publicly traded? How would you compute an updated cost of debt for an unrated company with bank debt?

Answer :- The questions are related. After all, we rely on traded bonds or bond ratings to come up with an updated cost of debt. To estimate the cost of debt for an unrated company, we would estimate a synthetic rating based upon the company's financial ratios. In its simplest form, you can estimate a synthetic rating for a firm based upon its interest coverage ratio. By estimating a default spread based upon this synthetic rating and adding it to the risk free rate, you can estimate an updated pre-tax cost of debt for this firm.

b) How do you get a market value of equity for a private business?

Answer :- You can do it in one of two ways. One is to use a multiple of earnings or book value, based upon what publicly traded firms in the business trade at, to get an estimate of market value of equity. The second is to use the iterative process, where you use your estimated values of debt and equity to compute the weights in the cost of capital. The one thing you should avoid doing is using book value weights.

Q. *Can the weights change from year to year in computing the cost of capital?*

Answer :- Not only can the weights on debt and equity change, but so can the other components - cost of equity, cost of debt and tax rate. In fact, you should expect the cost of capital to change for most firms, and especially so for young firms or firms in transition. Generally, firms that are young and risky have high costs of equity and debt, little or no debt and high costs of capital. As you expect these firms to grow and mature over time, you would expect the costs of equity and debt to come down, the debt ratio to increase and the cost of capital to decline.

The practical question that you will face is in coming up with these target debt ratios and costs of funding. There are two solutions. One is to look at industry averages, especially the averages for mature firms in the business for all of these components. The other is to compute the optimal debt ratio (with all the components) for your firm.

Q. ***There are a number of different risk and return models in finance used to compute the cost of equity but they all assume that the marginal investor is well diversified. If you use these models to estimate costs of equity for private or closely held firms, are you likely to under or over estimate the cost of equity? How would you fix the bias?***

Answer :- When you use conventional risk and return models (such as the CAPM, APM and multi-factor models) to estimate costs of equity for a private firm, you will tend to under estimate the risk in the firm. This is because these models look at only the portion of the risk that is not diversifiable and assume that the remaining risk will be diversified away. To the extent that private business owners or the investors in closely held firms are not diversified, they will be cognizant of all risk (and not just the market risk). In fact, if you know how much of the risk in the firm is market risk, you can compute a modified beta for the CAPM:

Total Beta = Market Beta / Correlation between stock and the market

Q. ***Multinationals now operate and trade in different markets and different currencies. Which risk free rate should you use to value a company ?***

Answer :- You can value any company in any currency. The risk free rate that you use will reflect the currency you decided to do the valuation in. For instance, you would use the U.S. treasury bond rate as your risk free rate if you were valuing Nestle in U.S. dollars. If you decided to value Nestle in Swiss francs, you would use the 10-year Swiss franc government bond rate. If you shift to a Euro valuation of Nestle, your risk free rate has to be a Euro risk free rate. Since a dozen different European governments issue 10-year Euro bonds, you should go with the bond with the lowest interest rate since it is likely to be closest to being risk free.

Q.*Most analysts estimate risk premiums by looking at historical data in the United States. What are the perils of historical premiums?*

Answer :- The obvious problem is that historical premiums are backward looking when what you really want is the premium for the future. There are also three measurement problems: Historical risk premiums come with large standard errors. Even with 75 years of data on stock and bond returns, which we can get for the United States, the standard errors remain high (about 2.5%). The problem becomes worse in emerging markets with less data. If you go further back in time (to 1871, for example), you run the risk of getting a risk premium that means very little at the current time.

If you decide to use historical data in the United States because you have a long and easily accessible history, you run into a problem of selection bias. After all, the U.S, market was the most successful market of the twentieth century; as a consequence, the premium you get will be too high as a forward-looking estimate. A more reasonable estimate would require you to look across a number of different equity markets over the twentieth century and compute an average premium over the markets.

Q. An alternate approach to discounted cash flow valuation is the adjusted present value approach, where you value the firm with no debt (unlevered firm) first and then consider the value effects of debt. What is the fundamental difference between the cost of capital approach and the APV approach and why might they give you different answers?

Answer :- In the APV approach, the value of the firm is estimated keeping dollar debt fixed over time. The tax benefits are computed on this dollar debt and the expected bankruptcy cost is also based upon this dollar debt. In the cost of capital approach, the debt ratio of a firm is kept fixed over time. For firms that are growing over time, the cost of capital approach will tend to yield the higher estimate of value because it incorporates, into the current estimate of value, your estimates of tax benefits from future debt issues. In practice, analysts who use APV add the expected tax benefits from debt to the unlevered firm value and all too often ignore expected bankruptcy costs (which are difficult to estimate). This valuation is incomplete since it counts in the benefits of debt but does not consider the costs.

Q.*Discounted cash flow valuations are usually based upon the assumption that your firm will survive as a going concern. If you are valuing a young firm or a distressed firm where there is a significant likelihood that the firm will not make it as a going concern, how do you reflect that in your valuation?*

Answer :- Discounted cash flow valuation is built on two fundamental assumptions. The first is that capital markets are open and always accessible; thus firms that need to raise fresh capital to cover cash flow needs do not have any trouble doing so. The other is that real asset markets are liquid. In other words, a company that ceases operations will still get the present value of the expected cash flows from its assets in a sale. In reality, capital markets sometimes shut down and distress sales are at discounted prices. While adherents to DCF valuation will claim that the discount rates (costs of equity and capital) can be adjusted to reflect the likelihood and consequences of distress, discount rates are blunt instruments that are more suited for dealing with volatility risk (that earnings and cash flows will be volatile) than for truncation risk (i.e., that the firm will not be around in 3 years).

Q. What have you not valued yet? (In other words, what do you need to add on to the present value?)

Answer :- If you are valuing the firm (rather than equity), you began with operating income as your measure of earnings to get to cashflows. Therefore, you have not valued any assets whose earnings are not part of operating income. The first of these assets is cash and marketable securities - interest income from these holdings shows up below the operating income line. You have to add the value of cash and marketable securities to your operating asset value. The second is minority holdings in other companies. The income from these cross holdings is variously accounted for but is almost never part of operating income. If you wanted a complete valuation, you would have to value each of these subsidiary companies individually and take the share of each company that your company owns into consideration. If you have a majority holding in another company, you have a different problem since you are required to consolidate 100% of that company into your financials. If you want your valuation to hold up to scrutiny, it is best to remove the consolidated subsidiary from your financials, value the parent company first and then add the majority stake of the consolidated subsidiary to this value.

Q. ***What do you need to subtract from firm value to get to the value of equity?***

Answer :- You would need to subtract out the market value of anything that you considered debt for your cost of capital calculation. Thus, you should subtract out the market value of all interest bearing debt, short as well as long term, and the present value of operating leases and other off-balance sheet debt that you can identify. Why market rather than book value? Even if the book value of debt is substantially higher than market value, a discounted cash flow valuation is based upon a going concern assumption and going concerns pay the cashflows on debt as they come due (and the market value reflects the present value of these cashflows). An alternative is do a liquidation valuation of the assets of the firm and subtract out the book value of the debt outstanding.

Q. It is common practice in valuation to add a premium for control this value or subtract out a discount (minority, marketability, private company etc.). Is this a reasonable practice?

Answer :- If you do a valuation right, there should be no need to apply discounts and premiums for most items to the estimated value. Consider the widely applied private company discount in the valuation of publicly traded companies. The rationale is that discounted cashflows valuations assume that a firm is optimally managed and most firms are not. This is patently absurd since the analyst chooses the inputs that go into the discounted cashflow valuation. If a firm is poorly managed with a sub-optimal debt ratio and a low return on capital, the discounted cashflow valuation with these inputs will already reflect the poor management. Consider also the premium that is often applied for control. To value control, all you would need to do is re-value the firm with optimal management and the difference between this value and the status quo value should be the value of control.

Q. ***How do you get from the value of equity to the value of equity per share?***

Answer :- If the firm has issued no equity options (to management as compensation or the market in the form of convertibles or warrants), you can divide by the number of shares and you should have the value of equity per share. If the firm has issued equity, it is best to value these equity options as options (rather than at exercise value), to subtract the value of equity options from the overall value of equity and then divide by the actual number of shares outstanding. The practice of using diluted shares that many analysts use as an alternative is a blunt instrument for dealing with options since there is no way to discriminate between options that are in the money to differing degrees.