Security Analysis and Portfolio Management

Prof. C. S. Mishra

Department of VGSOM

Indian Institute of Technology, Kharagpur

Module No. # 01

Lecture No. # 11

Valuation of Equity Shares - I

In this unit of Security Analysis and Portfolio Management, we are going to discuss about one of the important aspects in security analysis and portfolio management that is Valuation of Equity Shares. Although valuation of different finance instruments can be there but, in this case, we are going to emphasize valuation of equity shares of a particular company.

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Basic Approaches

- Direct Approach:
  - Valuing equity shares directly.
- Indirect approach:
  - Valuing company or firm as a whole and deriving value of equity shares out of that.

So, in this, we are going to discuss the basic approaches or valuation, different methods of valuation. So, coming to the basic approaches, there are two fundamental approaches, that is, one is a direct approach, another is indirect approach. As per direct approach is concerned, we by applying a particular mechanic mechanism, we will find the value of the equity shares directly whereas, in indirect approach what we do? There, we value the

company as a whole and from there we drive the value of the equity shares. So, that is the fundamental difference in direct approach and indirect approach. Coming to the importance of the valuation of shares, any investor like to buy or sell the share depending on the intrinsic worth of the particular share access and so the investor should like to know, what the value intrinsic value is, so that, accordingly in the market he can take a buy or sale decisions.

So, if as per him the value of a particular share is rupees 50 and the market if he is selling for rupees 55, in that case the investor will not like to buy that from the market, either if the investor is holding the share, he will like to sell.

So, in whatever the case may be irrespective the market price, the investor is likely to value the share on his or her own based on certain suitable measure, that he feels that he is right for the particular share. And the valuation of equity shares for those matters will quite subjective, why? Compare to an instrument like a valuation of bond at temperature in which case, we have got the periodic interest to come, then there is a requirement of principle is certain, unlike that in case equity shares, what happens? Whatever the investor is going to get from the shares is not certain, so dividends can be there and another thing is the change in market price can be there.

And change in market price is subject to market fluctuation. So, how much is going to be there while selling the share in future, nobody can determine it accurately. So, in that case what happens is, different people they depend on different method of valuation. So, there are lot of subjectivity is involved as far as valuation equity share is concerned. One cannot find a single value that is appropriate or that is acceptable to different types of investor in the market, even if the company is one and same.

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Classic Measures of Value – Major Types

- Asset based Measures
- Valuation Multiples or Relative Valuation Measures
- Discounted Cash Flow based Measures
- Venture Capital/ Private Equity Approach
- Valuation in case of Mergers and Acquisitions

So, further what we discuss in this module, the classic measures of valuation and in that we have what asset based measures, then we have about valuation multiples, then we have about discounted cash flow measure. As per the asset based valuation measures are concerned, here the valuation is supposed to be driven by the value of the assets of the particular company; asset is something which is held by the company to generate future revenue as well as future from that future cash flow.

So, that is the so if the assets are good for the companies, the company is supposed to be valued well by the investor, that is asset based valuation, we will have different methods there. Then second category is valuation multiple, in valuation multiple the other way relative valuation. Here what happens, we will like to find the value of particular company share compared to the peer group. So, when I say peer group, that peer group should be in the same sector, almost of same size in terms of turnover or total assets of the company, otherwise there is no point in comparing those target company with the comparable will company.

So, comparable company should be essential compared compare will in the way that they should be in same, at least from the same sector. So, if you are going to value a steel company, so we should have the valuation parameters of steel sector companies and then we can find out the value target company. And this relative valuation is quite popular in

a in the case of those companies, which are closely held by different promoters it is not listed.

So, there is no quote of market price available. So, instead of having the market price of this company, what we do? We have the market price of comparable company from the market and certain parameters are used and then based on the valuation parameter, there for the peer group or the comparable companies, the target company value is found out. Typically in case of merges, acquisitions and sale of majority stake by the promoters, in those cases the relative valuation is quite popular, there are couple of valuation multiple measures, which we will discuss subsequently. Then, last third one in the category is discounted cash flow based measures.

So, coming to the two measures like the earlier two measures, which is the asset based valuation and the valuation multiple. They can depend upon certain accounting parameters whereas, accounting parameters can be manipulated. So, in that case, there are certain experts who argue that instead of going those measures, which are based on accounting parameters so much, they can go for something cash flow base measure because, investor is investing in terms of cash today and he like to get back in terms of cash also. So, that is called the discounted cash flow based measures.

So, what happens in this particular measure? The investors will be forecasting the cash flow for a particular investment horizon and they that cash flow which is going to happen in future that will be discounted at a particular rate of return and the value of the particular company, value of the equity for that matter can be found out. So, these are three classic measures of valuation, we also have two different methods again. These are actually there are certain changes to the earlier measures like for instance, this is a venture capital private equity approach.

In that case what happens, private equity or venture capital is something who will like to invest privately with a company, which has the lot of growth percepts. And this company is not supposed to be listed in the market also and what as the lot of growth potential and the when the market price or the value of the company appreciates a lot and the venture capital list or private equity can exit.

So, when they do the valuation of the company and venture capitalist and the private equity players will be investing several companies out of that, so many may be successful, so many may not be successful. So, there is a lot of a risk involved as far as venture capital and private equity players are involved. So, what they do in this case? What is the different (( )) the measure they apply, that if they are using a cash flow based measure. So, the discounting factor is going to be quite high compare to retail investors, in case of private equity players, it is going to be higher.

So, they will discount at a very high rate because they perceive that the risk is very high that is going to be the little different approach as far as the private equity players and venture capitalists are concerned. Similarly, the valuation in case of merges, acquisition also can be little different from the valuation that a retail investor like to do for that matter. For instance, if by applying a proper valuation measure, appropriate valuation measure like there are book value of assets or the asset based measure earnings, based measure relative, valuation measure or cash flows based measure, so of the valuation for share comes to let us say rupees 15.

And in that case, so will the investor like to buy the share, if the share is available for rupees 15 or less whereas, in case of mergers and acquisition, what happens? The large group of investor or a large or bigger company will like to take over this particular target company, in that case, the takeover takes place; they will also have certain subsequent they are going to have a control over the company assets. In that case, whereas a retail investor from the buy or sale the share the company, they do not have any they do not go to they are not going to have any controlling interest in the company.

So, what happens if the15 rupees were the value per share as per retail valuation? So, the in case of merges acquisition, the investor who is going to acquire a controlling stake in this particular company may attach some controlling control premium let us say it is 20 percent. So, 15 rupees plus 20 percent of 15 rupees that comes to 3 rupees; so, mergers or acquisition point of view, the acquiring company or acquiring investor like to pay 15 plus 3 rupees control that is 18 rupees instead of 15 rupees that is determined by the general valuation measure, which is applicable for retail investor.

So, that is going to the difference as far as valuation in case of mergers and acquisitions are concerned. Now, we move on to the different types of measures, in that coming to the

asset based valuation measure, which is where we is this asset based valuation also measure is also known as book value of equity or a book value of share for that matter.

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Asset based Valuation Measures

- Asset Based
  - Book Value
    - Total book value of assets is taken as valuation of firm
    - Total book value of assets less book value of outsiders' liabilities is taken as book value of equity.
    - Book value of equity divided by number of equity shares gives book value per share.
  - Adjusted Book Value (In this case, the book value of assets are adjusted according to market value of assets then)

So, what happens in this case? We find the total value of the assets of the company as per the balance sheet, whatever is there, how the financial statement will call balance sheet for what it projects or what it depicts, the different types of assets of the company whatever that is, because as per accounting book that is why it is called book value of assets.

So, the book values of assets are totaled and only that asset which has got some tangibility or something some realized value assets. So, that because then the assets can be there where certain assets like, fictitious assets can be there, which cannot have any realized value.

So, expect those all the assets are clubbed and the total figure is found out, from there the total book value assets, the book value of outsiders liability, that is the liability for the let us say the company has got some de-ventures bonds or loans. So, their stake is going to be detected from this and whatever value comes out of that, that is the value of the equity share holders, that is total value book value of the equity and this book value of equity is divided by number of shares of the number of equities or with the company that gives the book value per share of the company.

So, this basic advantage of this particular method is that, the investor or the valuer can rely on the financial statements, which are supposed to have been audited by the auditors and they are suppose to reflect true and fair view of the company. So, that is something if somebody can rely on the financier statements like balanced, then it is worth that one can consider the value per share as per book value of assets. But, the major limitation this particular approach is that companies value or company's revenue, company's cash flow, companies profit, need not always be driven by the assets held by the company; there can be some other factors, intangible factors which are not caption in the balanced that can where drive the value of the company also.

So, in that case, since those things are not captured, in case of valuation of in case of balance sheet in the in balance sheet. So, possible this book value of assets it could not useful for sustainable company. For instance, if the customers buy the particular product of even little company because of good brand, good image that has been created in the customers mind, and they are not essential captured in the assets of the company. But still, the investor, the customers are going to buy this particular product and possibly they can also, they will be willing to pay premium over the other competitors of that particular product.

And they are real that realizes more revenue, more cash flow and the fact of that is driving more revenue and more cash flow is not reflecting the balance sheet asset site, in that case, this particular method like valuation asset, value based valuation method will not be suitable. So, one has to look for certain other methods, which can take care of those particular factors, that is the major limitation. One more limitation is that, the book value of assets is something like historical in nature.

So, the accounting book value whatever is given in the assets are concerned, they may not to be reflect in true market value as per today as such, as per the particular date when the valuation is taking place because the inflation might have already taken place where the same assets can be acquired at a higher where price by the company and which is not captured in the historical value of the book value of assets.

So, that is another limitation of this thing and the book value of assets approach and third limitation is that, the book value of assets is also subject to accounting adjustments accounting guidelines, which are lot of subjectivities also involved. Different companies

can follow different method or depreciation and because the different method depreciation, the net fixed asset value can be actually different. In that case, though the asset is one and same in the two companies, but the value reflected in the balance sheet can be different because the company has adopted different method depreciation subject to of course, approval of the relevant law or a relevant accounting guideline. In that case, we cannot compare a one company's value per share as per book value with another company.

So, before we do that, we have to make some necessary adjustments, so that the value per share as per book value can be comparable. So, these are certain limitation of the book value of assets, taking care of the limitation as that the book value is historical nature, does not reflect the market value. We have in other method actually adjusted book value, in this case what happens? The book values of assets are adjusted according to market value of assets then, so when the valuation is being done.

So, instead of taking the balance sheet value as reflected in the balance sheet, the assets value we took, we can take the market value of those assets as on then, when the valuation is taking place. And the market value of those assets can be more or less than the book value. So, accordingly this adjustments are done and then value per share is found out. So, in the… we can take a simpler example here in the subsequent slide here.

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Asset based valuation, contd..

Particulars (figures are in Rs. Million)	Book Value	Market Value
Net Fixed Assets	200	220
Investments	100	110
Inventory	30	32
Receivables	50	48
Cash and bank	40	40
Miscellaneous Expenses to the extent not written off	2	--
Outsiders' liabilities	200	200
Number of equity shares (in million)	10	10
Value of Eligible Assets	420	450
Value of Assets less value of liabilities	220	250
Value per share	Rs.22	Rs.25

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In this case, one can look at that, this there is a company as a company a or b or x company, which has got the net fixed assets; when you say net fixed assets it is net of accumulated depreciation. So, that book value is 200 whereas, the same fixed assets can be sold in the market or can be acquired from the market, for that matter and the same condition, it will be actually having 220 million rupees million as value. Similarly, the company has investments worth 100 million and when market value of these investments can be actually 110 and company has inventory of 30 million, where the market value of the inventory could be 32. This book value is some assets which are actually reflected in the balance sheet and market value is found out by the valuer by applying certain mechanism.

And finding making a survey and from in the market and they find a put a value as per market value access. Then comes receivables, though it is 50 million rupees is the book value, but possibly one can realize only 48 million from the data's of any receivables. And cash and bank in obviously, will there will not be any change as from market value book value is concerned. And there is a fictitious asset like miscellaneous expenses to the extent, it will not written off that is 2 million; obviously, there has no market value assets and this company has an outsiders liability of 200 million and that is also taken as a market value to only that is in the liability holder like to get 200, for what about 200, they have 200 million, for what about 200 million they have actually give in.

So, in that way the total value of the all the assets, except this miscellaneous expenses to the extent not written here, because there is a fictitious asset. So, they should not eligible for valuation of the equity assets. So, the valuation of eligible assets this 200 till 40 comes to 420 and then valuation of assets less liability is 200 that comes to 220. So, 420 minus 200 comes to 220 and the number of shares in million is 10 and say the value per share becomes now 220 divided by 10 that is rupees 22.

This is the value per share as per the book value approach is concern, the historical value is concern and since we have discussed that is historical value of the assets, can be something different then the market value; so in this example, already will have the market value figures for the different assets. And the market value term we combination of this five assets comes to 450 million and the 200 is the outsiders liability when you take it out, so the value becomes now 250 million for all the equity share holders and so, per share value comes to 250 divide by 10 that is 25.

So, as per historical value, book value, that is rupees 22 if the per share, whereas as per the adjusted book value approach that comes to rupees 25. So, if somebody is relying on the book value of equity formula for valuation of share, it is better that the investor or the valuer relying more on the market value of the assets and then find the value per share instead of the historical value, because market value is supposed to reflect the true value of the company as per the market condition for that matter.

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Valuation Multiples or Relative Valuation

- The ratio of firm (or equity value) to some aspect of the firm's economic activity, such as cash flow, sales or EBITDA (earnings before interest, tax, depreciation and amortization).
- Basic Principles:
  - Multiples are used appropriately when comparing two assets that are similar in nature.
  - Multiples are easy to use when they are stable across similar assets

  - Multiples vary over time.

Then, we have the next category of valuation methods that is the valuation multiples or relative valuation as we have discussed earlier. In this case, the valuation a particular company is based on the value of the peer group a particular company. So, when you say the peer group, we talk about the peer group means, the company should be the comparable company should from the same sector.

So, if you are valuing company in a pharmaceutical, we should have the comparable company from the pharmaceutical sector only, not that we find the companies from the steel sector and take the benchmark whatever they derived of the steel sector companies and apply that to value the pharmaceutical company because, there two sectors are totally different, if the risk involved in those two business are totally different, the type of value (( )) are going to totally different.

So, it is not right that, one should go for a different sector for valuing one more other sector for that matter. So, what are the different methods or different approaches here? That is we have, in this case we have, the ratio of a firm or if instead of firm it can be also equity value, to certain aspects of the firm's economic activity. The major activity it could be cash flow, it could be sales, it could be earnings before interest, taxes depreciation, amortization, it could be anything which is of important nature as per the financial parameters is concerned.

So, you find a valuation multiple for different based on different factors and whatever the factor, that multiple you find, based on the factor that is applicable for the target company, we find a value of the particular company. So, what happens? The basic principles that we have here is that, the multiples are used appropriately when comparing two assets that are similar in nature, that we discussing. So, for a finding a pharmaceutical company, we should take a comparable company like pharmaceutical company, so they should be comparable in nature. And also one more comparison can be there is not that a new generation pharmaceutical company can be compared to the old generation pharmaceutical company.

The company which has established for longtime may not to be a necessary comparative company for a company, which is actually set up just now. So, in that case even if you are going to compare those two companies also, one has to make certain necessary adjustments to the financial parameters, and then proceed with the valuation. Blindly comparing a 100 year old company with a one year old company is not justified as far as the relative valuation measures are concerned.

Then multiples will be very easy to use when they are stable across similar assets. If we find that multiples are going to be changing from time to time, for a one company more than other company, so they are not stable, they are not behaving as particular passion, then it is better that we drop those things or drop those companies which are having a erratic behavior in the multiple assets. And we can have certain companies where the multiples are actually stable across the time period and then you use that for that matter, but at the same time multiples on its own can vary from time to time.

So, when you say it is stable means, comparably in the same sector all the companies should show around same multiple, it should be that one multiple is some case, one

company is just 3 and another company's case is 15, for an average it something 10 to 12 is the multiple for that matter. So, this 3 and 15 can be taken out and 10 and 12 range that can be taken as the base for the multiple valuation multiple assets.

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Computing Multiples - Steps

- Market multiples are generally drawn from stock prices for public companies or prices from completed transactions (e.g. a merger or acquisition) involving public or private companies. Hence it can be:
  - Trading Multiple or
  - Transaction Multiple
- Steps:
  - Search and Select
  - Adjust and Compute the average (median)
  - Apply and Conclude

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Then coming going further about the relative valuation, different steps that we have here, the market multiples will be generally drawn from the stock price of the public companies or prices from the completed transactions. So, if we are going to value a particular target company, so we are going to have a set of comparable companies and we are going to have the prices, stock prices of those companies, which are actually listed in the market. So that means, comparable company should necessarily listed because that only gives a market price and then we go for a price multiple, and then we are apply that multiple to value the particular target company.

So, there is no point in having a set of comparable companies which are not listed in the market, but in case of mergers and acquisition, one can as usual go for the transactions, that what type of such (( )) or mergers acquisition have taken place in that particular sector and in that case, one can go for a what are different types of (( )) has taken place. And from there, the value what I was in paid by the company and the basic parameters that is we are using or the earnings or earnings before interest taxes depreciation amortization that is called a (( )) for that matter or book value could be the factor there.

So, find the transaction based multiples instead of the market based multiple, because transaction based multiple depends up on the price paid by the acquirer to the target company. So, instead of taking the market price based multiple, one can take the transaction based multiple and apply that particular thing for valuing a target company in case of mergers and acquisition.

So, as we discussed earlier, in this case if you are going to find the price multiple as per the market price and if you are going to value a company for mergers and acquisitions, whatever price we find by applying the market multiple, trading multiple then that case you have to add certain things like control premium. If it were are going to value a target company for acquisition access whereas, if you are using the transaction multiple of the based on different mergers acquisition transaction that has taken place in that particular sector, there is suppose to be taken care that control premium suppose to have been taken care in those transaction multiple, that is the value of the target company, when the target was valued by the acquirer.

So, there is no need to have any control premium adjustments. So, that is the difference between the market trading based multiple and the transaction based multiple as far as mergers and acquisitions are concerned. So, these are two multiples, we have trading multiple and transaction multiple. So, what we do? Different stage that we have here, either we search from the target companies, and then we select the comparable companies based on the target companies profile and then what you do?

There could be certain accounting adjustment that we will be discussing subsequent slides and there could be certain accounting principles followed, we say different in nature as far one company to another company is concern. So, for instance as far as the depreciation method is concern, one company may follow straight line method, and another company may be following determine value method.

So, if that is the case that is realized that, this two different companies comparable companies are having different accounting methods, then one has to adjust for those methods, different methods and so that those companies, the peer group companies are really comparable with the target company. And once you have the adjustment to the financial figures, then we find the multiple and from there you find the average multiple and for the average multiple, it is always better that one can go, one can use something

like a median instead of a simple average because median is suppose to take care of the extreme value. So, extreme out layers from the series of data can be taken out.

So, that whatever relevant range is there and that is from there the average is taken. So, in that case, the median is the best average as far as the valuation multiples are concerned. The moment one has the average multiple, so, let us say if I having that a particular series of different multiples of different companies 1 to company n.

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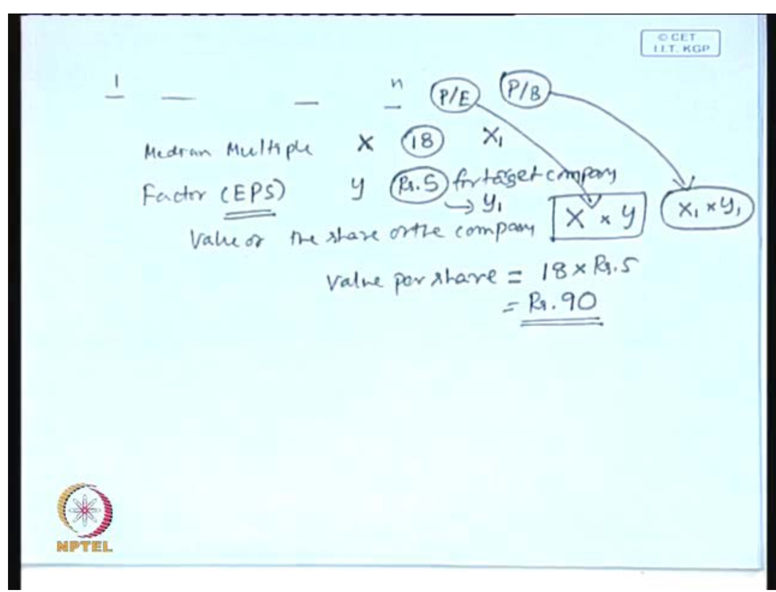

So, the median multiple is, if it is x and that the factor which was used for the multiple and that is let say y, then the value of the share of the company will be now the median multiple x multiplied with y, that is going to be the value of the share of the company. So, for instance, if the median multiple we are taking let us say price to earnings ratio as the multiple, the median multiple is 18 and the factor that is earnings are in this case if that becomes rupees 5 for the target company, that is for the target company.

In that case, the value per share will be the median multiple that is 18 this is this one into the target company's earnings per share that is rupees 5. So, rupees 90 becomes the value per share as far as this particular company is concerned. So, similarly instead of price the earning ratio, one can take price to book value ratio, one can take to some other ratios are also, but and accordingly if you take the price to book value ratio as the figure, then we will have a different multiple here.

It could be x1, then we will have a some other values; in this case, we will take instead of earnings per share, we will take book value per share and there you will be let us see that is taken as a y 1, the valuation of the company will be in that case will be x 1 into y 1. And one can note down, note here that the valuation as per price earning multiple and the valuation of price to book value ratio multiple can be totally different. So, it is not necessary that, if you one uses different methods of values in multiple, we are going have same answer.

So, it all depends whether we will use the price to earnings ratio multiple or you are going to use the price to book value per share multiple, that depends on that particular industry or company that you are talking about. It is not necessary that always we go for a particular multiple, for each type of company each sector of companies for that matter.

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While one searches for comparables..

- About the subject or target company
  - How does it create value?
  - What drives its financial performance?
  - Who are its customers and suppliers?
  - With whom does it compete?
  - What risks does it face?
- Inclusive List → Exclusive List → List of Small Group → More such lists if necessary

So, having done that, we have to also look at others things here about the subject target company, who is company you are target that has to be looked at. So, we have to look at how this target company create value does this and what drives its financial performance, who are its customers and suppliers, with whom does they compete, what risk does it face, what happens?

When you come to create the valuation access, as we have discussed in the asset based valuation measure, so we discuss that, if that measure will be appropriate for certain

companies, which are values driven by actually book value of assets held by the particular company. So, in that case, if you are going for a valuation multiple, then price to book value of assets multiple if one can find out, then book value of a asset per share or the value of the company to value of the assets for the company that multiple can be used their for the target company, because the value is driven by the assets held by the company. Whereas, if it is the value is not necessarily driven only by assets, but by several other things in that case, the asset price to book value method will not be suitable.

So, in that case what will happen? One can go for something like earnings based valuation measure or whatever that measure which is driving the value of the company that should be taken as the base and accordingly is the target comparable company should be selected. Similarly, like value what drives its financial performance the financial performance like profit, sales what about depends up on what? That also has to be taken and accordingly the comparable companies can be selected.

And then we also have to look at who are the customers and suppliers access. For instance, if we have a got a particular sector company which depends up on outsiders for sourcing of raw material, in that case what happens? If you are comparing a company with all those who do not depend up on outsiders for sourcing of raw material, then they are not truly comparable because, the target company is subject to risk involved in sourcing a material from outside, it could be foreign exchange risk, it could be the political risk that is faced in the country from where the goods are being imported.

So, in that case, we have to look at that whether the supplier base is almost same from the at least for the domestic only. Similarly, there could be two different companies and where one company may have this sales are more export related, the majority sales goes as export whereas, the target comparable companies we had we may end up that they are already having the domestic sales and their export sales are quite different.

In that case, these two companies are actually facing different types of risk, one company which is having only the more majority of the sales has exports, they are having a lot of foreign exchange risk and the business condition risk as per the particular country where the goods are actually exported, whereas domestic the company which has got most sale

domestic that is a subject to own the Indian market risk for that matter. So, in that case they are not truly comparable.

So, one has to again go on further search and find out which could be comparable companies, having a same almost same type of customer profile or a supplier profile for that matter, it is very difficult to find out this same type of company which have got same cost and profile. But, one should at least make an effort to find out such they should not be drastically different as far as the profile of the customer's profile, suppliers are concerned. So, this is a challenge for relative valuation, whether to find out who could be the comparable companies to compare with this particular target company that we are going to value as such.

Similarly, we have some other things that we talk about, ultimately we have at a inclusive list that is the list of all types of company in that particular sector, then based on this condition that we discussed in this, how does it create value? What drives the financial performance? Who are the customers based on that? Then we have a certain exclusive list, then you do a proper one more filtration could be that, we have a exclusive list of 30 companies, but possibly for all 30 companies, the financial parameters, financial values are not available.

Then we go for a for further filtration, for where for those companies where the finance data are ((available)) particular period of time and then it becomes a small group of company and that group of company becomes our the sample set and from that financial data of those companies, then we find the valuation multiple and go further as the valuation of the share is concern.

So, it is possible that, we can have multiple list also depending the target companies, not necessary if I lets say valuing two different two companies in same sector, we may need not have two different we need not have one set to compare, we can as usual go for two different sets. For instance, the company which has a turnover of 100 crore possible we should go for a set of companies, which has got the financial parameter same type of industry at the same time their turnovers would be around 100 crore, may be 75 to 200 something like that. But, not that you are having a target compares turnover 100 crore, then we are going for comparable companies like all the comparable companies have got 1000 crore plus turnover, which is not a right comparison as such.

So, similarly for a 100 crore turnover company, we have a comparable list like that and another if you have a something like 300 crore turnover company, then we go for another list which are the sales service cum target sorry comparable companies should be around 300 crore something plus something minus. So, for that matter, we can go for multiple assets and not necessarily that we go for a single asset of comparable company and compared with any target company, even though the target companies are in same sector or same industry.

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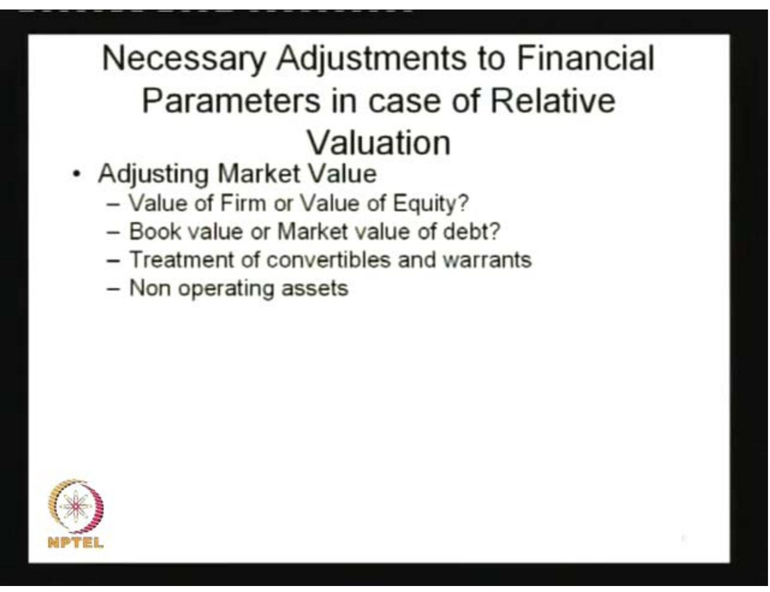

Moving further, as we discussed, we may have certain accounting or valuation related adjustments, the fastest set of adjustment is known as the adjusting the market value. So, one has to be careful here, whether you are going to find the value of the firm or value of the equity. When you talk about the value of the firm, then essentially when you apply that multiple, the multiple is based on value of the firm and whatever value that you are going to derive that multiple, we apply to the target company's parameter and then we end of finding the value of the firm for that matter. And from the value of the firm one can again go for value of the equity.

But, is also quite possible that we from the beginning itself, we have the parameters based on the value of equity so that, we can directly find the value of equity the target company with the help of the average multiple that we have already found out. So, that is one, similarly coming to the next thing that you have got the book value or market value

of debt that we are going to talk about. So, when you are going to find out the market value of particular company or the comparable company, one can have a condition like this.

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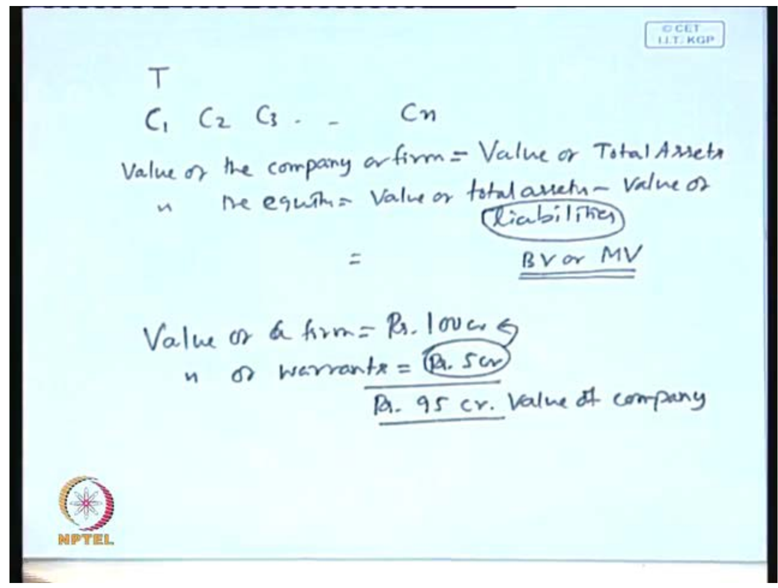

Let us say the comparable company, we have a target company called t and you have got a comparable company like C1, C2, C3 like that up to c n. So, what you do here? We end of finding the value of the company and when we say value of the company or firm, we say the value of the entire assets and entire that is there in the company access. So, in that case, we can say the value of the total assets, when you go for the value of the equity of the company, what you do? whatever You have the value of total assets, less value of liabilities, which are essentially outsiders liabilities we do that. When you come to the extent of value of liability, there the question arises should you take the book value or market value.

The major problem in this book value or market value of the debt is that so many companies, the market value of debt may not be available. Since that is the case, so one can take the book value of debt as the deduction from the value of assets, and then can go find out the value of the company, of the comparable company and then one can go for the multiple for that matter. So, what happens in this case? That market value of the equity that is not available. Let us say the market value of debt is available, the debt are listed in the market price can be found out then, it is ideal that one can go for market

value. So, otherwise book value of debt can be taken as a proxy for the market value; one cautionary note is that, whatever value we take let us say book value of debt or market value of debt for this, it should be consistent across the comparable companies. For one company we should not take market value and another company, we should not take we should take book value for that matter.

So, if you are taking book value from all the companies, from in the target such that comparable company should be taken as book value, if it is market value it should be taken as market value. So, mostly the market value is not available. So, end of taking a valuation of debt as the book value of the debt access.

Then we may have some special cases of like convertible instruments like convertible bond and convertible then de-ventures then we may or convertible preference here. Then we can also have warrants, warrants are such things which are instruments, which can be exercised and by paying certain amount a shares can be issued by the particular company at a particular value. So, the warrant holder has a right to buy the share of a particular company or a particular predetermined price may be related to the market price with the discount in that whatever that for that matter.

So, when you are valuing a company at a particular point of time, if you have got warrant holders, we have to find the value of warrants like a value of something like option that is also consider and those value of warrants should be taken out from the value of the firm that you have already found out. Because that is the value of the firm or value of the company as per the present stake holders are concerned, warrant holders are the potential stake holders the company. So, the potential stake holders may have some value as per the warrants are concerned. So, that is taken out from these values, so what happens? If we find the value of a particular firm is rupees 100 crore and the value of the warrants outstanding which are not yet exercised by the investors is rupees 500 crore, then we say rupees 95 crore is the value of company as far as our further comparison, valuation multiple calculations are concerned.

So, this 5 crore is essentially taken out of this 100 crores; that means, we are saying the potential stake holders of company who are the warrant holders now, they have a claim on the as such the comment to the extent of rupees 5 crores. So, from out of 100 crore, 5 crore is taken out. So, 95 crore is the value of the company as far as the all the present

stake holders are concerned, this is the one can take out. Similarly, there can be example of non operating assets, non operating assets means the company is holding the asset, but is not generating any revenue or the cash flows in that case, a non operating assets should not be consider the value of the company assets. So, for from all the comparable companies, we should take out the value of the non operating assets and the value of the company should be based on the operating assets than non operating assets. So, these adjustments should be done to the value of the company access, so in the comparable company approach, then some other adjustment that we have adjusting the operating metric.

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One can note here, the market value is in the numerator and the operating metric will comes in the denominator. So, ultimately valuation parameter will be the market value in the numerator and the operating metric in the denominator.

So, in that case, one has to adjust for something like inventory accounting, certain companies can be there which may follow inventory valuation like FIFO method or LIFO method for that matter. So, if the companies are some companies are following LIFO method then, accordingly some adjustments should done. So, that the companies are becoming comparable. Similarly, as you discuss earlier, depression method could be different. So, one has to do those accounting adjustments to inventory accounting, there could be some extraordinary items.

Let us say we are having a valuation multiple like value of the company to earnings before interest and taxes. As we know, these earnings before interest in taxes can be affected by certain extraordinary item that is typical to the particular company in that particular year.

Let us say earnings before an interest in taxes a particular company is rupees 10 crore, there is an extraordinary item which was there before EBIT is taken within income in nature, it was rupees 2 crore. In that case, the EBIT should be adjusted back to rupees 10 crore minus rupees 2 crore for that particular target company or for the comparable company. So, the adjustment that you do the operating metrics it is not necessary that we do only for the comparable companies, we do it also for the target company, so that the valuation parameters valuation metrics are common as far as the different companies are concerned.

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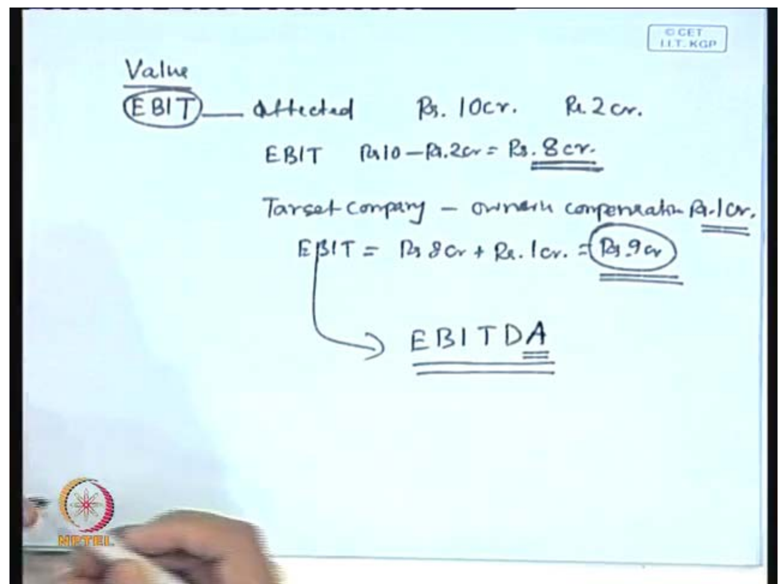

So, there is no discrepancy as per different methods followed, different accounting practices followed like that, similarly there could be some non recurring items. So, we should remove those items, then there may be certain companies which may claim certain compensation to the owners as a salary, actually in that case the owner salary if it is already deducted from the income and the then profit has been found out, in that case the owner salary has to be added.

For instance, in this case, even after adjusting for 2 cr of extraordinary item, we got normal earnings for interest taxes of 8 cr. Let us assume in this case, the target company let us say this is a target company, so earnings before interest in taxes and the target company has got owners compensation paid by them as rupees 1 cr during this particular year. Actually in that case, what will if the EBIT for our comparison will be now rupees 8 cr plus rupee one 1 cr, so that is rupees 9 cr becomes the comparable EBIT as per the target company is concern.

So, if such things are there, also in the comparable company that also has to be adjusted. So, that is one, similarly there could be certain intangibles like that as research and development expenditure, good will amortization. So, all those intangibles could be there or the adjustments have been done and though the adjustments have lead to reduction in the profit parameter like EBIT, EBITDA. So, in that case, one has to go for the adjustments; that means, in that case one can go for multiple like before the adjustments of actually taken place.

So, in that case instead of EBIT, one can end of having multiple based on earnings before interest, taxes, depreciation and amortization. See the amortization that a in this EBITDA term takes care of the amortization of intangible assets. So, that has to be taken out, so that it is not affecting the figure. So, before amortization, what is the profit is there that could be the base as the comparable multiple.

So, these are the certain adjustments which the valuer should do, where before going for the finding valuation multiple. And coming to the different types of multiple that we have is, we can divide the market capitalization of the particular company divide by the profit after taxes of the company.

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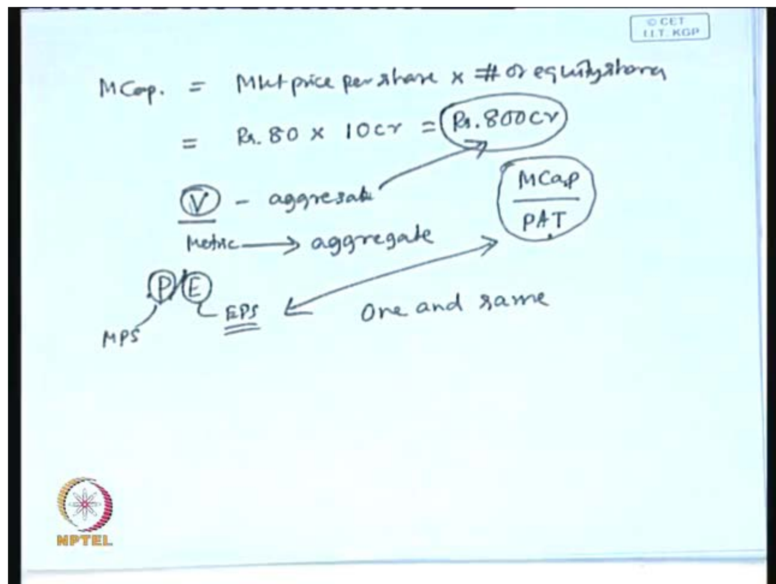

When we say market capitalization, we may mean market that is also known as m cap popularly, which is nothing but, market price per share into the number of equity shares. So, the market price of particular company share is rupees 80 and the number of share is a 10 cr in number. So, the value of the market capitalization comes to 800 crore. So, this is the value, which is an aggregate value, if we are taking the aggregate value of the company companies equity, then the relative valuation what happens? We have a something like a value here; we have got the valuation parameters of the metric for that matter.

So, if the value is taken as aggregate value like this 800 crore then, the metrics would also be on the ways of aggregate, it should not be a power share value. So, if you are going for a valuation multiple price to earnings ratio, in that case what you do? The price is the market price per share and earnings e is earnings per share is this is market price per share is earnings per share. So, that is the case if you are applying this, we should not do the mistake of dividing the value by earnings per share.

This earnings per share is in power share where is value e is a aggregate basis, in that case inserting earnings per share, we would take the market capitalization as the value and in instead of earnings per share, we take the profit after taxes of the particular company and whatever you do, whether m cap by profit after tax or price to earnings

ratio, the value as per the both measures are concerned that is going to be one and same, it will not be different.

So, one has to be careful if we are taking in the numerator the aggregate value, then denominator also should be an aggregate value that has to be done. So, in that case if you look at this particular slide, we have a market capitalization divide by net income that is profit after tax, market capitation divide by dividend, then market capitation could be divide a net cash flow, market capitalization will divide by earnings before tax or market can be divide by the book value of the equity of the company.

So, in this case, we have some five multiples we have here, so that means, the investor will end of finding out five different multiples and so one will be the market capitalization to profit of tax, one is going to market capitalization to dividend pair, like that five different multiples can be there and five different multiples can end of finding of the five different value of the particular company.

So, that is one. So, what happens? The further step that we will do here, we will find the market capitulation by net income or something like that.

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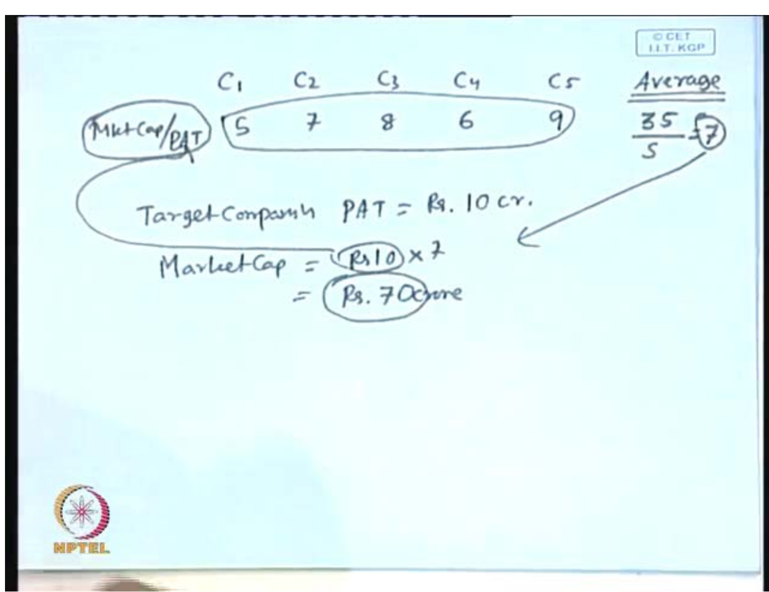

We if have let us say comparable company C1, C2, C3, C4, C5 so like that, we have the market capitulation by net income or profit after tax, we have certain figures let us say 5, 7, 8, 6 and let us say 9, so, what do we do here?

These are the valuation multiples of comparable companies and we go for an average, we can go for average as a median or the range is not substantial between lower value higher value, we can also go for a substance we can go for a simple average. So, in simple average the combination of this is comes to 35 and average that is 5 companies are there that becomes now, 7 is the average m cap to profit after tax multiple.

Now, what you do here? We should have the target company, let us say target companies profit after tax is rupees 10 cr. So, the value or the market cap should be as per this parameter should be rupees 10 cr into the parameter that is 7 cr. So, the value of the companies around equity of should be rupees 70 cr. So, this is the way one can apply the formula and find out this. So, what we did we found the multiple here for different companies, we found the average of that and this average has been multiple of the parameter, the parameter in this case is our profit after tax of this particular company.

So, if this company is listed in the market, then the market calculation will be approximating towards rupees 70 crore base, that is which is based on the comparable company. So, like that different other parameters like market would be market capitulation dividend, market capitulation to sales, market capitulation to net cash flow, all those things can be used and values can be found out the fundamental method remains one and same.

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Valuation Multiples

- Market Capitalization divided by:
  - Net income (PAT)
  - Dividends
  - Net cash flow
  - Earnings before taxes
  - Assets less liabilities (i.e. Book value of equity)
- Stock Price divided by:
  - Earnings per share (EPS)
  - Dividend per share (DPS)
  - Cash flow per share (CFPS)
  - Book value per share (BVPS)

Similarly, next category that we have is instead of dividing the market capitalization by the parameter like profit after tax or dividend for that matter, what you do here? We divide the stock price by the parameter per share. So, when you took net income in the first category, we are now taking net income per share that is price earnings per share. When you took total dividends in this case, in this case you take dividend per share and instead of taking market capitalization of the entire company, we take only market price per share and then accordingly the division is done.

So, what happens? The stock price divided by the earnings per share or market capitalization between net income per net income, we will end we will end of having the same value only. So, you can go for aggregate basis in the numerator denominator, we can also go for an individual power share basis also.

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Valuation Multiple Example

Company Name	P/E	P/B
Cipla Ltd.	21.99	3.93
Divi'S Laboratories Ltd.	14.66	4.89
Dr. Reddy'S Laboratories Ltd.	14.68	1.57
Glaxosmithkline Pharmaceuticals Ltd.	20.14	5.47
Glenmark Pharmaceuticals Ltd.	18.11	3.21
Lupin Ltd.	13.69	4.15
Piramal Healthcare Ltd.	14.75	3.41
Ranbaxy Laboratories Ltd.	-3.44	2.52
Sterling Biotech Ltd.	21.43	1.89
Sun Pharmaceutical Inds. Ltd.	18.21	4.47
Median	16.43	3.67
Target Company EPS and Book Value per share respectively (Rs.)	Rs. 5.00	Rs. 25
Value per share (as per P/E and P/B multiple respectively)	Rs.5.00x16.43 = Rs.82.15	Rs.25.00x3.67 =Rs.91.75

NPTEL

So, let us look at an example here (Refer Slide Time: 51:21), these are certain companies in the pharmaceutical sector like Cipla limited lab. These are part of CNX nifty index in India and particular date in march 2009 31st march 2009, the price earnings ratio of this companies are for Cipla is 21.99, for sun pharmaceuticals it is 18.21 and there is certain companies also negative multiple is also there. So, this negative multiple is actually reflected because the earnings per share of this particular company could be negative and according there has been found out.

So, similarly we have the price earnings ratio and what has been done here instead of techniques average? The median of this particular multiple are 16.43 and one more thing here, whenever you have a negative multiple like this, it is always better that we remove this things from the from this particular companies list, it is always advisable. And in this case, this particular thing automatically when taken out, because you have use median and median takes care of the extreme values; obviously, among these set of 10 companies, this minus 3.4 is one of the extensive most of been taken care by the median as such.

So, 16.43 is the median price earning multiple. So, with which we have a target company of earnings per share is rupees 5 on a particular for a particular date on 31st march 2009 and in that case we multiply 5with 16.43. So, value as per the p multiple average comes to 82.15, similar the price to book value ratio of this company is also have been found out and for example, Divi's Lab is a company which has got 4.89 is price to book value per share company per share.

Similarly, we have about a company like doctor Reddy's lab which is 1.57 and the median price to book value per share is 3.67 and the book value per share of this particular target company is its 25, presuming or assuming like that. So, value as per p y multiplies now 91.75, so this is not necessary that, value as per p multiple should be same as that value as per price to book value multiple.

So, like that different multiples can be found out for the comparable companies and then average can be found out and that can be used to multiply the target companies appeared financial parameter and the value of the particular company can be found out.

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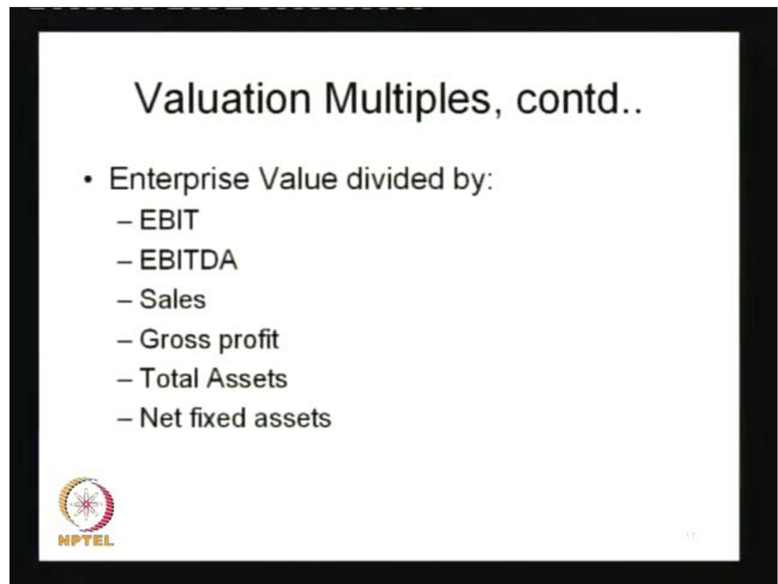

Going further, we can also have something like an enterprise value, where you talk when you say enterprise value, it is not value of only equity shares, it is value of the all the investors that the company has. And this enterprise value multiple essentially end of find the value of the entire company, once you have the value of the entire company, then you take out the value of the Liabilities, that becomes the value of equity and the value of equity can divide the number of shares, that gives us the value per share of the particular company.

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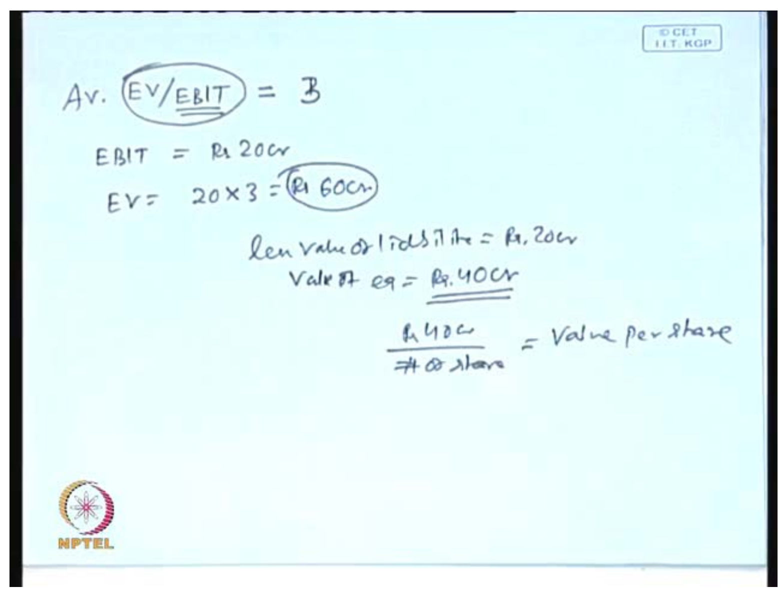

For example, if you have got a enterprise value of companies and then EBIT of different comparable companies that multiple is let us say average enterprise value of EBIT is 3 and the EBIT of a particular company, target company is rupees 20 cr. So, the enterprise value becomes now 20 into average EBIT that is 3 that is rupees 60 cr.

So, this is the enterprise value from that, we less the value of liabilities with a let say it is rupees 20 cr. So, the value of equity is now rupees 40 crore. So, this is the value of the equity and then you divide this rupees 40 crore with number of equity shares that gives the value per share.

So, this is the way to find out the you have a enterprise value multiple, then from the enterprise value multiple, we get the enterprise value access and the enterprise value multiple can be with the help EBIT, EBITDA then you have sales can be there, gross profit can be there, total assets can be there net fixed assets can be there, different multiples can be there, then whatever is found out then the value of the target company in terms of enterprise value also can be found out.

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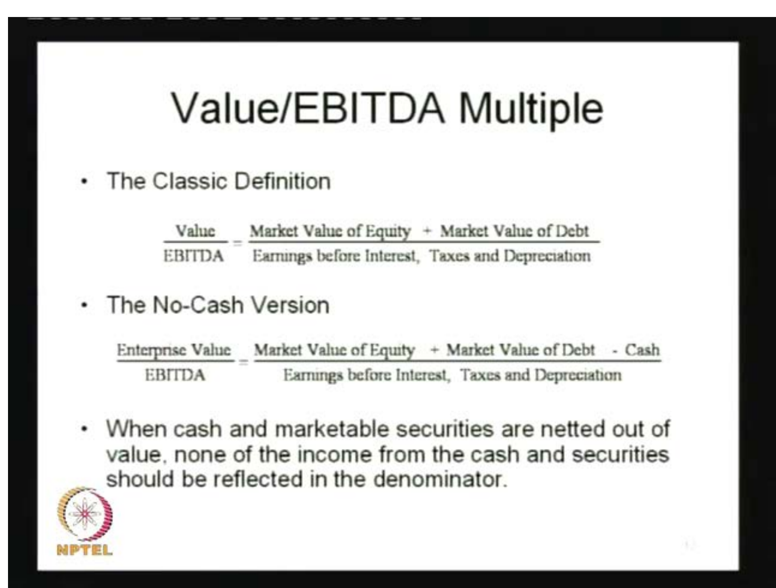

So, we may look at here, so value is in this case, market value equity plus market value of debt divide by earnings before interest, taxes depreciation and amortization. Then there is another formula which talks about there is a non no cash version, from the numerator, we take out the cash and then when you take the cash, then if there is any

income from the this cash or and the security, that is also removed from the denominator and then, the appropriate multiple is found out and this multiple can be used for different companies.

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Valuation Multiples, contd..

- Industry Specific Multiples:
  - Steel: MVIC/ Ton of Steel
  - Electricity Generation: MVIC/Kwh
  - Cable TV: Market Value of Invested Capital (MVIC or Enterprise Value)/subscribers
  - Retailers: MVIC/Square Foot
  - Bottlers: MVIC/case
  - Technology: MVIC/patents; MVIC/Scientists

There are certain other multiples also, which are industry specific multiples, instead of depending on the financial parameter, one can depend upon certain industry specific multiple like a steel company multiple could be the market value of invested capital ton of steel. So, because steel companies value is driven by more of how much the ton of steel capacity this particular company has. So, accordingly if you have target company which a ton of steel is also given, that can be used or the operating parameter and the multiple can be use to find the value.

Similarly, for a cable tv operator, we can have number of subscribers the value driver there. So, accordingly we can have a value for subscriber, similarly for retail company we have a market value of the square foot because more for retail company to do good business, they should have as much square foot area. So, that is the one of the value driver out till company.

So, accordingly bottlers have different cases, how many cases of bottlers are being sold. So, like that technology based companies, will have patents based or scientists based. So,

these are the different parameters, which are financial parameters, which are non financial parameters, which can be used also to find the value of the company.

So, in this module, we have discussed about the different methods of a valuation, in this we particularly focused on the asset based valuation measures and the relative valuation measures. And the subsequent session, we are going to talk about the valuation based on the cash flow based, that are different multiple valuation methods as per cash flows are concerned, thank you.