Financial Statements Analysis and Reporting
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Lecture – 48
DuPont Ratios Part-I

Welcome students. So, in the process of ratio analysis we will contribute this journey further and we will be talking some other aspects of this mode of financial analysis, and in this case we will be discussing certain other things some other set of the ratios, some other categories of the ratios; but before moving further to the next categories of the ratios after the profitability ratios and preparing the multistep income statement, I would like to discuss certain important aspects with regard to the profitability position of the firm.

Then we talk about profitability position of the firm we all understand that calculate two ratios; one is the gross profit ratio, and second is the net profit ratio and both these ratios are important. If we says that the gross profit is not important it is not the case, both types of the ratios are very important equally important. Now you see I would like to discuss with the importance of the gross profit, because as a financial analyst you have to come out with your own decision and you have to advice number of people later on tomorrow in the practical life. So, what should be the basis of your analysis? We cannot simply ignore that by a say calculating the say GP ratio gross profit ratio we are not going to achieve any objective rather some most important ratio if you talk about the overall financial viability of the firm.

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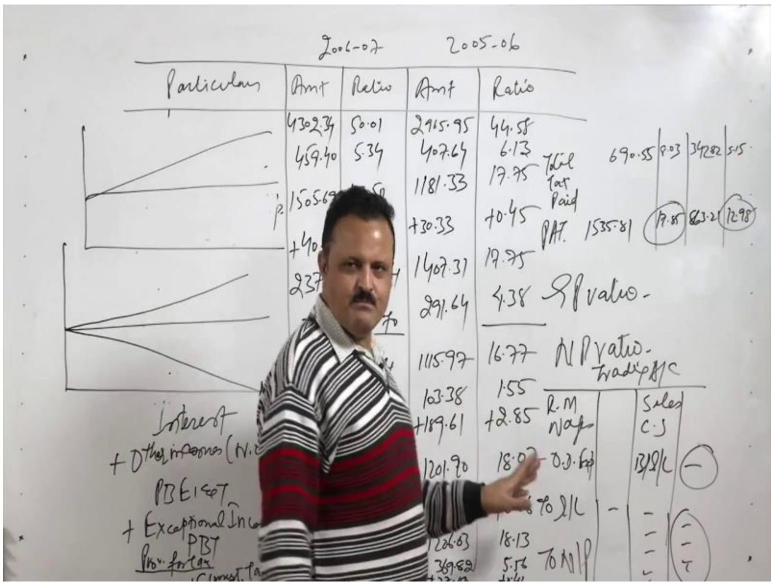

Look when we talk about the GP ratio, this gross profit ratio. Gross profit GP ratio this ratio is one and then we have the net profit ratio these are the two ratios. Now GP ratio if you talk about how we calculate from the trading account. We calculate the GP ratio from the trading account and net profit ratio comes out from the lower part that is the profit and loss account right. And when you calculate the GP ratio you get in a idea about the operating structure of the firm, you get an idea about the operating structure of the firm; because what we take into account for calculating the GP ratio? We are preparing trading account this is the trading account, and in the trading account we are taking into account here sales then we are taking the closing stock, here we taking the raw material, we are taking the wages, and we are taking the other direct expenses. Three and the difference is two GP.

Now this all is talking about the operating structure of the firm; this all is talking about the operating structure of the firm and operating structure of the firm means when we go if it is a manufacturing organization, if it is a manufacturing firm then their main source of income is a sales of the finished product including the closing stock, and their head of expenses are raw material one, wages to the workers working on the plan two, and other direct expenses like power, water, lubrication, greasing which is used for the production process three. So, these are three expenses direct expenses and these three these two direct incomes two heads of direct income incomes sales have already given as the income, and the closing stock will give us tomorrow.

So, when we say that if any firm is having a gross profit ratio more than the net profit and largely the net profit is derived from the gross profit, then you can say that that firm has very good operating structure and very good financial structure. Because upper part is talking about this is a trading account, and here we talk about the operating structure of the firm. In the Grasim scales if you look at the gross profit was 50 percent here 45 percent and 50 percent and then the net profit came down, if you look at the net profit that came down to 13 and say 18 percent.

So, it means largely the net profit has been given from the gross profit what does it mean? Means this firm has very good operating structure and this firm has very good financial structure. Now the point of decision making here is that any company to be rated as good bad or a say you can look it as in between, you have to look it at how is the operating structure of the firm. If it is a manufacturing sector firm what is the or how is the operating structure of that firm. A operating structure of the firm is good, means this a this say a point of concern and the basis of decision making about the company's future.

If any company is a manufacturing sector firm, and the operating structure of the firm is good, but the financial structure is not good; what do I mean by to say that here they are operating as a gross profit, but because of some other factors here it becomes a net loss; it means the firm has good operating structure, or first let us discuss this way that if the this firm we talk about the Grasim's, if the firm has good operating structure means gross profit ratio is high and good financial structure means that profit is also acceptable, in that case you can say the firm is related as having a very good financial position, very good current as well as the future prospects right? But if in any case the operating structure of the firm is good, here we have the GP gross profit, but coming down and subtracting other indirect expenses and the financial expense, may be sometime the financial structure of the or financial structure of the firms is very very heavy you have to borrow lot of money from the market initially.

Initially our performance is also not good, we are sometime and not able to make much profit and because of the financial expense being very high this pro gross profit while coming down to the level of the net profit, because of very heavy financial expense and other non operating expenses becomes the loss. Still you are hopeful; because in any manufacturing sector firm if the operating structure is good, financial structure is week still there are the chances that the firm has the good future, good prospects, and there is nothing to worry about. Because a good operating structure of the firm will improve the poor financial structure of the firm or the week financial structure of the firm; it means still you cannot advice to the suppliers, you keep on supplying to this firm your fund are not at risk your supplies are not at risk, you can advice the investors also that yes currently the firm is not doing well, but it is expected to very well because operating structure of the firm is very strong.

Similarly, you can advice the say lenders also you are advising to the financial institutions, you can advice them that yes I am unconfident that this firm will come out of the present position, and if you lend anyone into this firm so that your investment or your lending is safe. So, you talk about the shareholders, you talk about the a lenders, you talk about the suppliers, you talk about any other stake holder if anybody want to deal with the company in the financial terms, and he wanted to be sure about whether his investment and his dealings or his funds will be safe by dealing with this firm or not, in that case we have to look it at on the operating structure and the financial structure. If the operating structure is good as in this case we have seen the GP is gross profit is 50 percent, 45 to 50 percent, and even the financial structure is also very good that the net profit has gone up from the 13 percent to 18 percent.

So, in this case in this type of the firms nothing to worry about may be you talk about any type of the say stakeholders they are safe. But in any case if the operating structure is good your GP ratio is gross profit is good, but coming down and subtracting for see indirect expenses and financial expenses, even if is reporting the loss currently or it was reporting loss in the past or maybe sometime the net profit is not that very good gross profit is good, but the net profit is not that very good still this company has a very good future.

But if this company or any company having poor operating structure, poor financial structure in that case you advice the people, no do not deal with that company, their company has no future nothing and means very soon this company can become the sick company. So, neither the investors, nor the lenders, nor the suppliers, nor anybody else should deal with this firm, because the future of this firm is not secured. But now we are talking about the forth proposition, and the fourth proposition could be that you can find many firms I will give examples.

So, for example, the operating structure of the firm is not good, and here they are rather than reporting the gross profit the firm is reporting the gross loss may be. And when you come down to the lower part you are preparing the trading account here, and then when you prepare it is not a gross profit, in the trading account there is no gross profit there is a where finding out here that it is by net gross loss it is by GL not GP and this is the gross loss the firm is reporting, but when it comes down adding here so much indirect incomes here.

So, it will be two gross loss and so much indirect incomes here, you taking here there finally, it reports the net profit. Now what is the meaning of this situation? Firm has a poor operating structure, but a very good financial structure meaning there why that. If you talk about their upper part trading account; their sales are low, and their expenses are high. So, their product is cost more selling price is less or sales are less so finally, the firm is incurring a loss here, but still they are continuing with the business. But when they are come down to the lower level here so much indirect incomes the firm has, the income from the indirect sources the firm has that adding this income here on the credit side of lower part of the income statement or in the profit and loss account, this in indirect income on account of interest from investments, rents from the buildings or any other kind of the sources, you put here all the indirect incomes than here these indirect incomes are so high, that these are indirect incomes cover up this loss also and they cover up the all indirect expenses also and finally, it becomes the profit.

So, it means what is the situation? The firm has poor operating structure, but a good financial structure and that is why it is reporting the net profit, though if you talk about the gross part it was loss; if you talk about the gross part it was loss, but net part is the profit. It means the firm having poor operating structure, but a good financial structure and that firm has not a good feature at all. Because a strong financial means a poor operating structure will eat away slowly and steadily the strong financial structure of the firm also.

So, it means we should not deal with this kinds of the firms also; because it is a natural tendency that say for example, gross profit we are talking about; here the gross profit we are talking about we are calculating the gross profit that is sales minus direct expenses, and if you draw a line here you see that the line of the gross profit should be; if that the line is depicting a rising trend or if it is not rising trend at least it should present a straight line linear relationship, it should present a linear relationship that is the gross profit means the cost of production raw material, wages and the other direct expensive cost, if it is increasing then it should be justified by the increasing amount of the sales. So, firm should also be able to a increasing the selling price, if the input cost is increasing, output price should also be increasing and finally, what will happen; if there is a 10 percent increase here, and 10 percent increase here the gross profit will remain the same.

So, it means this line will have the straight line trend or it is a linear relationship, but it can be that for example, you are able to increase your selling price, but the cost is under control so GP will increase. And if the GP increases it will have the rising trend, but if it is other way around that is the selling price is (Refer Time: 13:32) going down, but the cost going high. So, what will happen with passage of time; the GP will go down and finally, what will happen after some period of time it will become a loss here after touching this point it will become a gross loss.

So, if it becomes a gross loss, it means still you are continuing with the firm, it means the firms operating structure has become very poor. Firm is not able control its cost and firm is also not able to increase its selling price. So, firm is reporting the gross loss at this point, and but when here comes the question of net profit, and if you draw the graph with regard to the gross profit net profit here, so the net profit is; when we talk about the net profit part the net profit here is defecting a rising trend. How it is possible? If there is a gross loss there should be net loss, but there is a gross loss and the lower part is having so much of the indirect incomes here that the gross loss becomes the net profit and it is going up or at least it is static. It means the firm has poor operating structure, but a good financial structure. So, what will happen? Slowly and steadily our poor operating structure will eat away the strong financial structure, and the firm will is bound to be closed or is bound to be becoming a sick firm.

Now, I give you the examples look at the balance sheet of Onida electronics; look at the balance sheet of Videocon, Videocon electronics part not other companies, Videocon electronics part the company manufacturing the electronics products. If you look at the balance sheet you will find something like this, that their trading is reporting a gross loss. Because in the electronics business because see if the if the Videocon is reporting a profit then the main source of the profit should be their electronics business.

Whatever the say colour TVs, refrigerators, then other electronics products they are manufacturing and selling in the market, main profit should come from there in that case the source of the net profit should be the gross profit. But if the gross part is reporting a loss, because what is happening? Cost of products or cost of manufacturing for the Videocon either it is rising or it is static, but the selling price is going down. So, when the selling price is going down they are not able to cope up with the market, and they are not able to recover the total cost, cost of production. So, what is happening that on the trading account the Videocon is reporting a loss, and then they come down here.

So, where Videocon had a surplus income here, means when they were leader in the market till 2000, having almost 22 percent market share 22-23 percent market share, at that time Videocon has earned huge profits; and those profits have been invested outside either in the other subsidiary companies or the other companies or other sectors and or anywhere else. So, that investment is bringing back the interest income to the Videocon electronics one.

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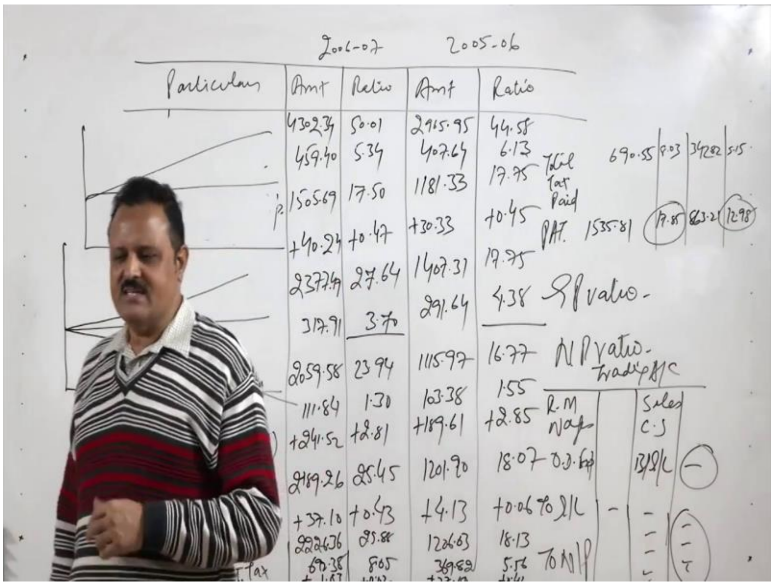

Or they could have purchased new buildings, or they have constructed buildings, and these buildings are rented out either to the other group companies or to the other outside companies, and that they are getting the rent income and so many other indirect sources. So, is a Videocon a financial sector company, it is a financial management company, or the financial investment company, or is it a real estate , it is a manufacturing company, it is a electronics manufacturing company.

So, main source of the profit of the Videocon should be the trading account that is coming from the manufacturing and selling of the electronics products. If the electronics product are the not giving the profit, but the overall companies reporting a profit it means you can say that video cons operating structure has become poor, but the financial structure is good because of the past good days. So, it means very soon that, because how long you see here it is a gross loss and your losses going up.

So, in this lower part here this net profit which lower part is indirect incomes are being used to make this loss good, how long the company will be as a making management of the company will you making the loss good? One day this company has to become sick, so, it means a similarity is the case with Onida, you look at the balance sheet of Onida Onida is having this kind of in the trading account they are reporting a loss, but in the lower part they are reporting a profit, because in the good times when the Onida was the leader in the market they have earned huge profits surpluses and those are invested in the market, they are giving the returns back in the form of interest or rent or any other kind of and the companies reporting the profit, but that is a pseudo profit.

Very soon the companies going to be a sick firm, so what is happening that the point of decision making after analyzing this multistep income statement, that always if you are talking about a manufacturing sector firm always (Refer Time: 18:49) upon the trading account or on the gross profit. Gross profit should be the driving force of the net profit; source of the net profit should be gross profit. If there is a gross profit there can be gross net profit, if there is a gross profit there can be net loss even, but that firm is safe secured and that firm is bound to improve. But if it is other way around you always advice the people as a good financial analyst that this firm does not have the good feature.

So, when you talk about the Grasim industries, here the net profit what we have worked here, the source of this net profit is the gross profit. So, firm is having both very good operating structure and very good financial structure, so it means the firm has a good future, and this is not reflected from this analysis if you reflected even from the raw balance sheets, which can be looked at with a net price that what is the overall operating and the financial structure of the Grasim industries.

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GRASIM INDUSTRIES LIMITED
Balance Sheet
AS ON 31st March 2007

	Schedule		Current Year	Previous Year
SOURCES OF FUNDS				
Shareholders' Funds				
Share Capital	1	91.69		91.69
Reserve and Surplus	2	6,138.35		4,890.39
			6,230.04	4,982.08
Loan Funds				
Secured Loans	3	2,291.00		1,386.12
Unsecured Loans	4	660.56		593.55
			2,951.56	1,979.67
Deferred Tax Liabilities			582.55	584.38
TOTAL			9,764.15	7,546.13
APPLICATION OF FUNDS				
Fixed Assets				
Gross Block	5	6,770.97		6,114.12
Less: Depreciation/Amortization		3,380.53		3,109.49
Net Block		3,390.44		3,004.63
Capital Work-in-Progress		1,192.35		293.64
			4,582.79	3,298.27

So, if this company about this company somebody ask you that please advise me should I invest in this company, should I lend to this company, should I supply to this company? Yes you are here reply should be yes you go ahead, your investment is safe, your lending is safe, your supplies are safe, your payment is safe. But if you talk about the Videocon, if you talk about the Onida, you should advice No operating structure of the firm is very poor only financial structure is good. So, I do not advice you to deal with this kind of the firms, because overall financial analysis tells me that these firms these are numbered and very soon this firm is going to become the sick firm. So, there should be the basis of analysis depending upon the gross profit and the net profit.

So, this is all about the profitability ratios we could talk so far and we have discussed one more set that is the profitability ratios, by taking in to account the gross profit ratio, the net profit ratio then the other expenses and other heads of expenses means the different heads of expenses, and we could find out that other than say this selling distribution and administrative expenses there is hardly any scoping the Grasim to reduce the cost. But still they are reducing it, so material cost can be checked at the manufacturing expenses can also be checked, if this cost can be brought down then the further profitability of the firm can improved.

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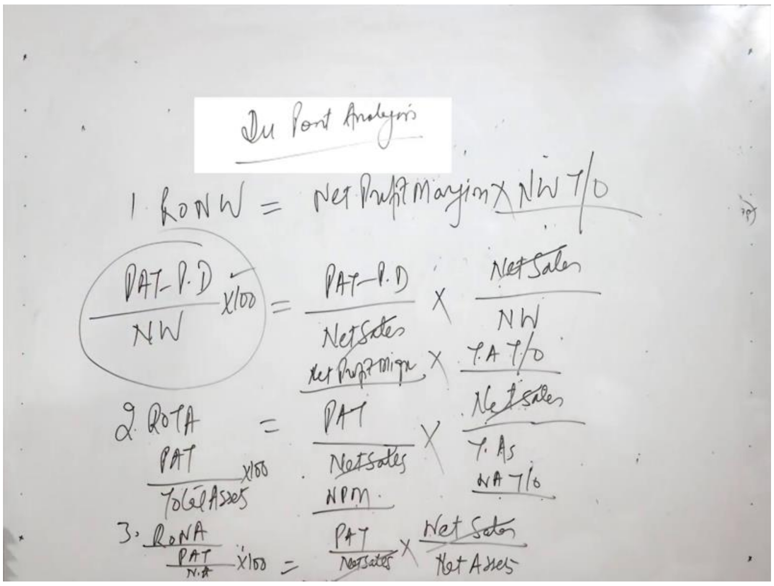

Now, let us talk about the next set of ratios which can be calculated and if you look at the next set of the ratios, and then I will be talking to you about the DuPont ratios. I will be talking to you about the DuPont ratios, and when you talk about the DuPont ratios DuPont is basically accompany DuPont ratios DuPont analysis. DuPont analysis DuPont you have heard about DuPont is a big company, they are into many sectors, they are into chemicals they are into agriculture, they are into consultancy, and they are into natural resources. So, is a it is a big US firm US based firm and US management of their financial experts have restricts some ratios. There of the view that this no need to go for the detailed lengthy ratio analysis, even if you calculate 2-3 important ratios, you would be able to have a rough idea about how the company's overall performance is and what are the future prospects of the company.

So, the important ratios which the DuPont has suggested that they should be calculated and should be and some decision by the financial experts we should be drawn, should be taken on the basis of this analysis. These are the three ratios and they are really very interesting and very very important ratios, first ratio is the RONW return on net worth return on net worth. So, we have already discussed a return on net worth, we have already discuss the return on net worth so, but here we are again going talk about return on net worth or you can call it as the net worth turnover ratio.

So, under turnover ratios under source efficiency ratios, we have also discuss the net worth turnover ratios that to how efficiently the net worth is being used by the firm, and how many times the sales are of the net worth so we have already talked about. So, you see that DuPont is also says that if you would not to calculate, if you want to know about the overall performance of the firm you calculate three ratio ratios; one is the return on net worth, second thing is Rota, return on the total assets how much returns is there in the total assets. And the third ratio which the talk case Rona, return on the net assets.

So, DuPont people say that if you calculate these three ratios, you can easily find out that how efficiently the firm is using the net worth, how efficiently the firm is using the total assets, and how efficiently the firm is using its net assets. And if you recall in the first ratio RY is when we discuss. When we were started discussing about the different types of the ratios, first set of the ratios we talked about was the RY ratios, and in the RY ratios return on the net worth was the first ratio. And there what we said return on net worth; if you see the return on net worth DuPont says this is the function what, that is the net profit margin net profit margin multiplied by the net worth turnover.

This is the function of return on net worth is the function of net worth margin multiplied by the net worth turnover. How quickly you are using your net worth and what is the profit margin, net profit margin available from your sales. Now you see when we calculate the return on net worth what the formula we used; if you recall the formula we used was pat there is a PAT, minus preference dividend divided by net worth that we use the formula, multiplied by 100. PAT minus preference dividend divided by net worth. So, it is a profit after tax, after paying preference dividend and divided by the net worth that gives us the return on net worth and what is the net profit margin ratio? Net profit margin ratio is the so called a PAT minus preference dividend divided by net sales into 100.

So, lastly we will be taking this 100 later on. So, this is the net profit margin pat minus preference dividend divided by net sales, and it is the function of these two this return on net worth is the function of these two. So, what is the net worth turnover ratio? If you call we have just make the previous lecture we have calculated the net worth turnover ratio, and if you talk about the net worth turnover ratios it was net sales divided by net worth; net sales divided by net worth.

So finally, what you get if we remove this and this. So, finally, what you are left with this, this is the formula, we are written the 100 here. So, it is the function of return on net worth is the function of net profit margin, and the net worth turnover. So, how many times of the sales are of the net worth? If the sales are going up profit will also increase, and that will become the return on net worth.

If the sales are increasing if you are able to maximize the sales in the ratio of in the net worth, the number of this times of the sales as computed the net worth is very high, then an profit margin will automatically grow and the return on net worth grow, this is the one thing. So, it means the DuPont says that if you would not increase the profitability of the firm, if you would not to increase the net return on the net worth of the firm, you increase the amount of sales. If you increase the amount of sales here you will be able to increase the profits, net margins net profits and automatically RONW will improve.

Next ratio be, they say that is to go for that is return on total assets. Return on total asset can be calculated with the help of PAT divided by profit after tax, divided by total assets, total assets and multiplied by 100. Rota is pat divided by total assets into 100 and finally, this is the function of what? This is the function of PAT divided by net sales, into net sales divided by total assets. Net sales divided by total assets if you remove this and this, so you are left with the profit after tax divided by the total assets multiplied by the hundred. So, this is return on the total assets. So, if your net worth is turnover is improving, profit is improving and similarly the return on the total assets will also the going up, it will be improving. And third thing is we say that you calculate the ratios that are the Rona.

So, in the Rona you will be taking only that is again PAT divided by the net assets. Net assets means that is the total assets minus depreciation and that multiplied by 100 so that will be in the percentage terms, but that will be the function of PAT divided by net sales and multiplied by net sales that is the here it is the function of. This is the basically the function of again the net profit margin, in case of the Rota also net profit margin and the here it is say we will see this is the function of net profit margin that is same, but and then is the return on this is the function of total assets, total assets turnover total. So, it was net worth turnover or it is a total assets turnover the first part is same.

So, it is a function of net profit margin into the total assets turnover so net profit margin is PAT divided by net sales, and the total assets turnover is net sales divided by the total assets. So, you cancel it this, so find your left with Rota is that is the return on total assets is PAT divided by the total assets multiplied by the hundreds, you can easily find out and similarly the Rona. Rona is a function of again net profit margin, that is the net profit margin NPM and then it is the net assets turnover.

So, if you take this net assets turnover here you can calculate here this is the net assets multiplied by the net sales divided by the net assets. So, this is striked off find you are left with what is Rona that pat divided by the net assets. So, by calculating these three ratios, how efficiently the firm is using his net worth, how firm is using its total assets, how a firm is using its net assets? If you are able to determine this, automatically other things will be clear to us that higher the say net worth turnover ratio higher will be the profitability, higher the say total asset turnover higher will be the profitability, and higher the net asset turnover higher will be the profitability.

So, this can give you an idea how the firm is doing. How it is expected to do in future. we can draw a trade line of this firm or you these ratios and we can make out that if it is rising or at least if it is maintaining its static trend, you can say that that the firms future is good and the firms future is fine. So, these ratios about the Grasim industries these three ratios that is a DuPont ratios, we will calculate we will try to find out what is the return on net worth for say this Grasim industries, then the return on total assets, and the return on net assets. This we will try to find out and we will make our own observations about the Grasim industries and that we will discuss in the next part of discussion.

Thank you very much.