

Financial Statements Analysis and Reporting
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Lecture - 49
DuPont Ratios Part – II

Welcome students. So, in the journey of this ratio analysis, we have almost say completed the larger part of discussion, but some two sets of ratios are left to be talked about. So, in my previous lecture, I was talking to you about the DuPont analysis. And in the DuPont analysis, I discussed with you that there are the three ratios which are identified by the DuPont that if you want to really draw some meaningful conclusion before going for the detailed ratio analysis about a company. If you calculate these three important ratios then we can find out then which direction the company is going what is the performance of the company, and how this company is doing.

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Du Pont Analysis

$$\begin{aligned}
 \text{RONW} &= \text{N/P Margin} \times \text{NWT} \\
 26.97\% &= \frac{1511.70}{8603} \times 100 \times \frac{8603.59}{5606.06} \\
 &= 17.52\% \times 1.53 \text{ Times} \\
 &= 18.49\% \times 1.43 \text{ Times} \\
 \text{ROA} &= \text{N/P Margin} \times \text{TAT/O} \\
 18.49\% &= \frac{1511.70}{6770.97} \times 100 \times \frac{6770.97}{8603.59} \\
 &= 22.33\% \times 1.27 \text{ Times} \\
 \text{NWT} &= \frac{8603.59}{5606.06} = 1.53 \text{ Times} \\
 \text{TAT/O} &= \frac{6770.97}{8603.59} = 0.787 \text{ Times} \\
 \text{N/P Margin} &= \frac{1511.70}{8603} = 17.52\% \\
 \text{NWT} &= \frac{8603.59}{5606.06} = 1.53 \text{ Times} \\
 \text{ROA} &= \frac{1511.70}{6770.97} = 22.33\% \\
 \text{TAT/O} &= \frac{6770.97}{8603.59} = 0.787 \text{ Times} \\
 \text{N/P Margin} &= \frac{1511.70}{8603} = 17.52\% \\
 \text{NWT} &= \frac{8603.59}{5606.06} = 1.53 \text{ Times} \\
 \text{ROA} &= \frac{1511.70}{6770.97} = 22.33\% \\
 \text{TAT/O} &= \frac{6770.97}{8603.59} = 0.787 \text{ Times}
 \end{aligned}$$

So, this ratios were DuPont company or the DuPont analysis. And the first ratio which I discussed with you at that time was return on net worth which I said the function of this is equal to net profit margin and multiplied by the net worth turnover ratio. So, this is the function of the net profit margin and the net worth turnover. So, if you look at we have already calculated this ratio that ratio when we calculated as a first ratio consider that the ratio in the first ratio was 26.97 this ratio was 26.97 percent we have already

calculated this ratio. So, you can check whether it is 26.97 as a function of net profit and the say this net worth turnover or not.

So, if you calculate the net worth profit here net profit will come out as what is the net profit of the company that was 1511.70 divided by 8603, so it is multiplied by 100. If you calculate we check this, this works out as 17.57 percent, 17.5 percent is the say net profit margin ratio.

And if you calculate we have already calculated, I think the net worth turnover ratio. And the net worth turnover ratio was 1.3 times that is 8603 that is the net sales 0.59 dividing it by the net worth and the net worth taken for this was 5606.06. So, if you take this, this works out as 1.53 times and if you calculate, if you multiply this by this you will get the same ratio this is the 26.97 times. So, we have already calculated the net worth turnover ratio but we wanted to be sure that whether it is a function of net profit ratio margin and net worth turnover. And we see that yes net worth net profit margin and the net worth turnover are the basis on which this net worth return on net worth can be calculated.

So, if you want to improve this net profit margin, we have to improve this particular thing that is the numerator - sales. We were able to sale maximum in the market or you increase your sales other thinks will have the back tracking effect multiplier effect, your profit will improve and finally, the return on the net worth will improve. So, this we have already done, but we are just reconsidering it for the current discussion, this is one.

Next thing is the ROTA return on total assets. So, when you call for how about the other turn on the total assets, you will see that what was the basis of the return on the total assets, we have taken that is the, it is the function of net profit margin and multiplied by the return on total assets. Return on total assets or the total assets turnover. It is the not return on total assets, but the total assets turnover it is the net worth turnover, and it is the total assets turnover. It is the total assets turnover.

So, for calculating ROTA, we have calculate the ROTA for the 2 years and similarly just go back return on net worth for the previous year was 18.49 percent. And if you calculate the say net profit margin for the previous year, it is 12.94 percent. And it was the net worth turnover times was 1.43, 1.43 times for the previous year that is 2005 and 06. So, if you multiply this by this, you will get the same ratio. So, it means it is the function of the net profit margin and the net worth turnover ratio, so both the years. So, we are able

to find it out that return on that worth is improving from 19 percent in the previous year in the 2006 and 07, it has become 27 percent. So, it is on the growth path and it is evident from the profit and loss account also.

So, now we talk about the ROTA that is a return on total assets. Again I told you it is the function of profit margin and the total assets turnover; and for this, we have to calculate this ratio that is the net profit margin and the total assets turnover. So, let us check for this how much is the ROTA for here, if you take the, what is the formula for the ROTA first we will see. Formula of the ROTA was PAT divided by the total assets. So, PAT divided by the total assets is how much PAT was profit after tax was 1511.70 divided by the total assets was 6770.97, and this works out as 22.33 percent multiplying it by 100. So, this works out as 22.33 percent and if you taken the net profit margin again this ratio, so it is 1511.70 divided by the net sales and the net sales is how much 8603.59 and here it is 8603.59.

So, if you take this into account, how much it works out 8603.59 and then multiplied by same sales 603.59 dividing it by the what is the denominator, denominator is that total assets. If you take the total assets figure, so total assets in this case are 6770.97; this is strike off like this. So, if you calculate this ratio this works out as again the same thing that is the 1511.70 divided by the 6770. So, finally, the ratio will work out as the same thing and here if we are already calculated this ratio this is 17.57 percent multiplied by this. And if you take this, this is 1.27 times. So, this ratio is finally, coming out as 22.33 percent. This is for the year 2007.

And now we will calculate for the year 2006. So, if it is 2007 and now we will calculate for the 2006, so we see the trend how the trend is going on. And for this we have the ROTA for this year is 860.53 and then the total assets are 6114.12 multiplying it by 100. So, this works out as how much 14.07 percent. And if you calculate this part this part works out as 12.94 and multiply by 1.08, so what 14.07 percent here. So, this is 12.94 percent of this is in times. So, if you multiply the 12.94 percent with the 1.08 times you work out the same thing that is the 14.07 percent is the say return on total of assets. So, what was the previous year, this is the 2005 and 06, it is about 14 percent. And in the current year 2006 and 07, it has become 22 percent. It means it is on the growth path and it has improved by more than 8 percent, return on the total assets has improved by more than 8 percent.

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The image shows a whiteboard with handwritten calculations for DuPont Analysis. The title is 'Du Pont Analysis'. For the year 2007, the RONA is calculated as $\frac{1511.70}{3390.44} = 44.59\%$. This is further broken down into $\frac{1511.70}{8605.59} \times \frac{8603.59}{3390.44}$, which equals $17.57\% \times 2.54$ times. For the year 2006, the RONA is 25.38% , which is $12.94\% \times 1.96$ times. A person's head and shoulder are visible on the left side of the whiteboard.

And similarly now we calculate the RONA - return on net assets. So, we take the return on net assets we are going to find out that is the PAT divided by the net assets. So, if you calculate the PAT divided by the current assets. So, if is profit after tax 1511.70 divided by 3390, this is the net assets after depreciation. So, this is 3390.44 and here net profit margin is 1511.70 divided by this is the 1.70. And it is going to be same that is the net profit margin and multiply it by 8603.59 and divide it by 3390.44. So, this works out as this and this.

So, finally, the ratio if it talk about the RONA for this works out as 44.59 percent and here you talk about this is 17.57 percent, and it is 2.54 times. So, it means the RONA for the 2007 this is for the 2007 is 44.59 percent; 44.59 percent is the return on the net assets, because the denominator has gone small has becomes small because we are not counting for depreciation, so the performance has improved. And when you take the gross assets that is not subtracting the depression, so naturally the return will come down, so but it is a significant improvement.

So, let us check for the previous year that is 2006, if it take into account the 2006 information then the ratios we have already calculated and the RONA for this is the 25.38 percent. And here it is 12.94 percent multiplied by 1.96 times. So, this is the RONA for 2006, and this is for 2007. So, if you look at this change from in the two years, so it means if you talk about the 6 and 7 ratios, it means there is significant

improvement. So, the this ratio was 25.38 and this has become 44.59 percent, it means there is significant we can say that about 75 percent improvement is there as far as the this ratio has gone up by 75 percent as far as this 2006-2007 comparison is there.

So, it means the return on net assets was 25 percent, it has become 44 percent now, it means in every say you can call it as indicator in all ratios, this firm is showing as the very good performance. So, it means in the nutshell, the purposes of this discussion was that when you talk about the total ratio analysis. Before going for the detail ratio analysis, if you calculate these three DuPont ratios then that is the return on net worth return on the total assets, and the return on net assets you can means draw a conclusion that in which direction the wind is going to blow. And what is going to be the overall financial performance of the company when you will calculate the RY ratios, solvency ratios, liquidity ratios, turnover ratios, then the resource efficiency turnover ratios, and the say capital market ratios. So, it means you can get an idea just by calculating these three ratios which are given to us by the DuPont Company; this is called as the DuPont ratios or the DuPont analysis.

Now, next thing I will take up today in this lecture is that is the last set of ratios that is the capital market ratios. Capital market ratios that is the last set of the ratios, I will discuss with you and they are very interesting; and apart from many things they are quite important also. Because under these ratios, under these ratios, under the capital market ratios when we talk about the capital market ratios or the say other name of the capital market ratios is the valuation ratio also. Valuation of the form or the capital market position of the form, so we will be talking about those ratio now that is the last set, and we will be talking about 5 6 ratios about the capital market of the valuation ratios some of the ratio we have already calculated. So, we will be using them in the passing reference and some ratios will be calculating here from the information given.

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Further Information:

1. Share capital comprises 9,16,89,485 equity shares of Rs. 10 each fully paid-up.
2. Tax rate 35%.
3. Share capital as on 31-03-2005 was the same as in succeeding years.
4. Reserves and surplus as on 31-03-2005 was Rs. 4,236.66 crores.
5. Secured loans include short-term debt of Rs. 331.20 crore as at 31-03-07 and Rs. 198.31 crore as at 31-03-06.
6. Unsecured loans include short-term debt of Rs. 75.51 crore as at 31-03-07 and Rs. 144.61 crore as at 31-03-06.
7. All short-term debts represent working capital borrowings.
8. Long term debt Rs. 182.27 crores was redeemed during 2006-07.
9. Other income includes operating income of Rs. 40.24 crores and Rs. 30.33 crores for 2006-07 and 2005-06 respectively.
10. Closing market price of the share (source: www.bseindia.com):
 - As on 31-03-2007Rs. 2,091.25
 - As on 31-03-2006Rs. 2,057.95
 - In between reached high of Rs. 2778.60 in January 2007 end.
11. BSE Sensex (Source: www.bseindia.com):
 - As on 31-03-2007Rs. 13,072.10
 - As on 31-03-2006Rs. 11,279.96

So, here then you talk about the information, now this information is going to be of very good use for us, especially this part that is the closing market price of the share then it is in between market price then the Sensex and all these this information is going to be very, very useful for us. And at the same time, we are going to use the information with regard to the dividend at the other related aspects.

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Profit before Tax & Exceptional Items	2,189.26	1,201.90
Surplus on pre-payment of sales tax loan		4.13
Write back of provision for diminution	37.10	-----
Profit before Tax	2,226.36	1,206.03
Provision for Current Tax	(692.38)	(369.82)
Deferred Tax	1.83	27.00
Profit after Tax	1,535.81	863.21
Debt Redemption Reserve No Longer Required	38.56	8.62
Investment Allowance Reserve No Longer Required	0.05	0.25
Balance brought forward from Previous year	878.37	815.35
Profit available for Appropriation	2,452.79	1,687.43
Appropriations:		
Interim Dividend	252.10	-
Proposed Dividend		183.15
Corporate Dividend Tax	35.36	25.71
General Reserve	1,200.00	600.00
Balance carried to Balance Sheet	965.33	878.37
	2,452.79	1,687.43
Basic and diluted earnings per share (In Rs.)	167.50	94.14

So, now the valuation ratios of the capital market ratios. When you calculate the say capital market ratios see that we are going to make a comparison of the firm in terms of

book value of the firm at the market value of the firm, book value of the firm and the market value of the firm. If you look at the even the share price of this firm, we have seen that the share price of this firm is how much it is that is 9.1617 crore shares and one share price is what is the book value of the share it is 10 rupees. And what is the market price of the share it is 2091 and previous year it was 2057 or 58. In between it has risen up to 2779 also or 78.60 also that is in the entry 2007.

So, it means how many times the difference is 10 rupees and 2,000 rupees or 3,000 rupees that is the market value of the firm. And market value of the firm is built upon the basis of the people perceptions. What people perceive about Grasim industries, how people rate Grasim industries and market value is of much use then there is question of takeover of the firm say you can call it as mergers of the firm or restructuring of the firms. If this firm has to be sold to other firms, it is not only that this firm is going to get the price that that is only for their your book value, the book value of this firm is if you look at is how much.

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GRASIM INDUSTRIES LIMITED				
Balance Sheet				
AS ON 31 st 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

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Fixed Assets held for disposal			14.33	12.76
Investments	6		4,274.70	3,481.71
Current Assets, Loans and Advances				
Interest accrued on Investments		0.70		1.46
Inventories	7	824.14		750.73
Sundry Debtors	8	576.48		413.45
Cash and Bank Balances	9	116.38		155.58
Loans and Advances	10	<u>824.69</u>		<u>705.54</u>
		<u>2,342.39</u>		<u>2,026.76</u>
Less:				
Current Liabilities and Provisions				
Liabilities	11	1,266.86		969.15
Provisions	12	<u>183.20</u>		<u>304.22</u>
		<u>1,450.06</u>		<u>1,273.37</u>
Net Current Assets			<u>892.33</u>	<u>753.39</u>
TOTAL			<u>9,764.15</u>	<u>7,546.13</u>

Here it is the book value of the firm now the total liabilities of the firm are or you talk about the total assets of the firm are how much 9764. So, 9764 crores, and previously it was this 7546 crores. Firm is not only going to get 9764 crores, if this is going to be sold to the other company, firm is going to get something for the good will also and at that time the valuation is important, at that time the capital market ratios are important. So, in this case the valuation ratios and the capital market ratios are important, because they make how people perceive that company in the market.

Capital market ratios are important in the many situation, they are important for the all kind of the shareholders present share holders and the potential shareholders. They are important for the lenders, they are important for the suppliers, they are important for the people may be anybody in the general public or may be the that the government also how the firms are performing, who is the leader in the textile industry, who is the laggard in the textile industry. So, for everybody that the market value or the capitalization or market capitalization or the valuation related ratios are important.

So, on the basis of these certain ration, we will draw the conclusions about that what are the different ratios, how they are how this company is doing and what we can say that how people proceed in the market. As was the Grasim industries limited is concerned how people perceive this company in the market and what is the overall performance and the position of this company in the market. So, because they are the two values one is the

historical or the book value of the company which is means physically available. Another is the perceptual value market value of the firm which people perceive and they are the difference in the two values. If there is a high capitalization rate or the market value of the firm, and from the market capitalization rate is very high may be the book value is low it means the company has done very well in the past that is why the people have a very good opinion about the company. And people are ready to buy the shares of this company or the share of this company is trading in the market in the stock exchange at a very high price right.

So, I will discuss quickly with you what are the different ratios which can be calculated to know the market position of the firm or the two say capital market ratios, what are the important capital market ratios which can help the firm in the or which can help in the valuation of the firm. So, first ratio we have normally six ratios which are of use and importance as per as the say valuation of the firm is concerned and the capital market ratios are concerned.

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1. EPS

2. $P/E = \frac{\text{Closing M.P}}{\text{EPS}}$

3. NAV

4. $M.P \text{ to NAV} = \frac{\text{Closing M.P}}{\text{NAV}}$

5. $\text{Market Capitalisation} = \text{Closing M.P of Share} \times \text{No. Equity Share}$

6. $\text{Yield to Investm} = \frac{\text{Dividend} + \text{Market Appreciation}}{\text{Initial Investment}}$

So, first ratio is the earning per share, earning per share as a capital market means perceptions about the firms in the capital market are built on the basis of how much earning people are having or the shareholders are having. And this ratio we have already calculated, but we will be using clear here in the passing reference then will be

interpreting the other ratios calculated here especially for the capital market valuation purpose.

Second ratio is important ratio is the valuation ratio or the capital market ratio second is PE ratio price to earnings ratio, price to earnings ratio. And this ratio how it is calculated closing market price divided by earning per share. So, for calculating PE ratio you need the EPS. So, this ratio we will be taking the closing market price which is given to us we have already calculated the earning per share, we will be able to calculate the ratio and then we will be interpret this ratio as thus information we find it out.

Then third ratio is that asset value NAV ratio, NAV - net asset value we have already calculated this ratio, but NAV is also equal important for us. For the present analysis in the present context the NAV is equally important for us we will be using the NAV also net asset value also. And with the help of the net asset value we will be able to draw some meaningful conclusions as far as the market capitalization of the Grasim industries is concerned.

Then next is the market price to NAV, market price to NAV ratio. Why we need NAV, because we need to calculate the market price to NAV ratio - net asset value ratio. For calculating this market price is to NAV we will have to take the closing market price again the same closing market price of the firm divided by the net asset value NAV closing market price and the net asset value that is NAV will be taking. So, NAV is of importance to us and of the very good use to us.

And the second last ratio in this category is the market capitalization. Market capitalization ratio, and when we talk about the market capitalization ratio, here it is the how is to be calculated again same closing market price of share multiplied by the number of equity shares outstanding closing market price of the share multiplied by the number of equity shares. So, it is you say if you want to find out the capitalization of this firm closing market price is that is in 2007 31st March, 2091.25, and the number of shares are 9.17. So, you can find out what is the market capitalization level of this firm.

And at what price means actually if you look at when we were talking about the book value of the firm the book value of the firm is somewhere 9,000 crores we have already seen this is some it is here 9,764 crores. And when you talk about the market

capitalization, the market capitalization can be somewhere above 20,000 crore or 19,000 thousand crores. So, it is more than the double it is more than double.

So, in the market because of the goodwill of the company apart from the cost of the physical assets tangible assets companies get the price or the value for the goodwill also and the market capitalization will be very high in that case. When we will calculate in we will find it what is the market capitalization rate, whatever the market capitalization position of the Grasim industries.

And at the six is yield to investors. So, yield to investors is we will be taking here as dividend plus market appreciation dividend plus market appreciation divided by the initial investment. This is the yield to investors. Yield to investors comes from the two sources one it is the dividend which they get as the revenue income on the investment in their company shares made by somebody. And over the period of time because of the demand and supply relationship, the share price of the company also appreciates or depreciates in the market. So, as sum of these two things the yield is worked out.

So, we have already calculated the two ratios EPS and the NAV is already with us and we will be calculating the remaining four ratios about the Grasim industries. And then we would be analyzing about how is the overall say market value or you can call it as that say the capital market position of the Grasim industries, how people perceive this company in the market, how it is performing in the market.

Actually when we see the physical performance of the company it has been found as excellent. But when we talk about the market performance of the company, how people perceive this company in the market, how this company is having its overall market position, capital market, this will be known to us when we calculate these remaining four ratios. And then in total we will make the analysis of all the six ratios then we will able to draw the meaningful conclusion about the market position of the firm. Though we have known the say physical position of the firm, the book value of the firm and overall performance for the for the firm, but when we compare that with the market performance then we will able to draw some meaningful conclusions that how physically firm is doing and how firm is doing it in the market. So, we will be taking that into account.

And here the information which is of the importance and use to us for calculating, this categories of the ratios will be like this item number 10, note 11, 11 is not of any use to

us. We can use it in the passing reference, but yes, point number 10 is of great use to us and then we will be talking about the dividend related information that how much dividend is paid then how much is the closing market price, what was opening market price, what is the closing market price. So, what is the appreciation? In the say market price of the firm in the current year in 2006 and 07 as compared to the 2005 and 06 that we will be talking about and discussing. And we will try to know about the say market capitalization position of the firm or the say valuation we will be doing the valuation of the Grasim industries and that we will be doing in the next part of discussion.

Thank you very much.