RATIO ANALYSIS

4/30/2017

Business Finance – Group Assignment

Group 4

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Ratio analysis

BUSINESS FINANCE – GROUP ASSIGNMENT

CASE

Thorpe Company is a wholesale distributor of professional equipment and supplies. The Company's sales have averaged about $ 900,000 annually for the three-year period 2007 -2009. The firm's total assets at the end of 2009 amounted to $ 850,000.

The President of Thorpe company has asked the controller to prepare a report that summarizes the financial aspects of the company's operations for the past three years. This report will be presented to the board of directors as its next meeting.

in addition to Comparative financial statements, the controller has decided to present a number of relevant financial ratios that can assist in the identification and interpretation of trends.
At the request of the controller, the accounting staff has calculated the following ratios for the three-year period 2007 -2009

Ratio	2007	2008	2009
Current ratio	2.00	2.13	2.18
Acid-test(quick) ratio	1.20	1.10	0.97
Accounts receivable turnover	9.72	8.57	7.13
Inventory Turnover	5.25	4.80	3.80
Percent of total debt to total assets	44.00%	41.00%	38.00%
Percentage of long term debt to total assets	25.00%	22.00%	19.00%
Sales to fixed assets(fixed asset turnover)	1.75	1.88	1.99
sales as a percent of 2007 sales	100.00%	103.00%	106.00%
gross profit percentage	40.00%	33.60%	38.50%
net income to sales	7.80%	7.80%	8.00%
Return on total assets	8.50%	8.60%	8.70%
Return on stockholders' equity	15.10%	14.60%	14.10%

In preparing his report, the controller has decided first to examine the financial ratios independently of any other data to determine whether the ratios themselves reveal any significant trends over the first three-year period

Required

(a) The current ratio is increasing, while the acid-test (quick) ratio is decreasing. Using the ratios provided, identify and explain the contributing factors(s) for this apparently divergent trend.

(b) In terms of the ratios provided, what conclusion(s) can be drawn regarding the company's use of financial leverage during the 2007-2009 period?

C) Using the ratios provided, what conclusion(s) can be drawn regarding the company's net investment in plant and equipment?

Our analysis and Conclusion starts from next page

OUR ANALYSIS AND CONCLUSION

Q1 -A

THE CURRENT RATIO IS INCREASING, WHILE THE ACID-TEST (QUICK) RATIO IS DECREASING. USING THE RATIOS PROVIDED, IDENTIFY AND EXPLAIN THE CONTRIBUTING FACTORS(S) FOR THIS APPARENTLY DIVERGENT TREND.

Observations

- The difference between current ratio and acid test ratio is significant. Current ratio is almost twice the acid test Accounts receivable turnover has decreased by nearly 27% points ((9.72-7.13)/9.72
- The inventory turnover has decreased by nearly 28% ((5.25-3.8)/5.25 Sales as a percentage of 2007 sales has increased by 6%
- Gross profit percentage has fallen

Assumptions

Price of the products of Thorpe has remained same across years

Conclusion

On the face of it, the divergent trends in current ratio and acid test ratio seem to be caused by the decrease in the inventory turnover which has reduced by 28%. This suggests that company is holding pile of inventory without turning them over (decrease in sales). On further observation we can see that the sales has actually gone up by 6%. Hence it is not just inventory turnover but other factors that might have resulted in the

The current ratio is almost twice the acid test ratio which suggests that Thorpe is into an industry which is inventory intensive. Hence it will have to hold up significant amount of inventory to assist sales. The raise in sales and the dip in the inventory turnover might suggest:

Thorpe is holding on inventory which is in line with the current trend in the market. Hence it might have some inventory which are not very much in demand. Hence for three years the company has been carrying forward this inventory or Thorpe's production volume might not be in line with the sales volume.

In case of inventory which are not as per the current trend, Thorpe might have to look at getting rid of the inventory it has been carrying forward either by discount sale or scrap sale.

In case of over production, Thorpe would have to devise a strategy to boost the sales.

There is a significant drop in the gross profit margin which suggests that there could have been a significant raise in the cost of goods sold. This might also have had an impact on the inventory turnover.

It can also be observed that the accounts receivable turnover has significantly dropped by 27%. This suggests that Thorpe has been engaging in credit sales and its collection policy has not been very effective. This definitely needs to be revamped.

By either getting into cash sales or collecting the outstanding faster, Thorpe will add to its cash component which will boost its acid test ratio. This will have a double effect by bringing the inventory down and adding to Hence we can conclude that it is not only the inventory pile up which might have resulted in the divergence, the collection policy of the company may be at fault as well.

Q2 -B) IN TERMS OF THE RATIOS PROVIDED, WHAT CONCLUSION(S) CAN BE DRAWN REGARDING THE COMPANY'S USE OF FINANCIAL LEVERAGE DURING THE 2007-2009 PERIOD?

Observations

- Percentage of total debt to total assets has come down
- Percentage of long term debt to total assets has come down
- Sales as a percentage of 2007 sales has increased by 6%
- Return on shareholder's equity has fallen

Conclusion

It can be observed that company's total debt to total assets ratio is declining, which suggests that the company is repaying the debts using its funds from operations

It can also be observed that company is reducing its long-term debt only. The short-term debts have remained the same through the years. This might suggest that the company is using its short-term debt to finance its working capital. It may also be thought that company is following a strategy that will boost the sales. In order to avoid any missed sales opportunity, the company is stocking up inventory. This might have put some pressure on the working capital. Hence the company it maintained the working capital level by short term borrowings. It would have been a prudent practice to repay the short-term borrowings and hold on to the long-term borrowings as this would have an positive impact on the return on shareholder's equity. But the company has chosen to repay long term debts and hold on to the short-term debts. This may be because of some of the long Repayment of long term debt has had an impact on the return on shareholder's equity which has seen a decline in the three years.

devise new strategy to ensure that return on shareholder's equity is also increased through efficient financial leverage.

Q3 – C) USING THE RATIOS PROVIDED, WHAT CONCLUSION(S) CAN BE DRAWN REGARDING THE COMPANY'S NET INVESTMENT IN PLANT AND EQUIPMENT?

Observations

- Sales to fixed assets(fixed asset turnover) has increased over the years by 13%
- Return on total assets has increased
- Sales as a percentage of 2007 sales has increased by 6%

Conclusion

There is no specific mention about the investments in Plant and equipment. Since Thorpe is into distribution business, we can assume that most of its fixed assets would be into warehouses which is used to store inventory. Since we see that the sales have steadily increased over the years, the company must have devised a sales strategy and stocked up inventory to support sales. We see that the debt as a percentage of total assets is highest during 2007. We can assume that the company borrowed long term to set up warehouses which can hold more inventories. Since the sales increase over the years, we see that the sales to fixed asset ratio has also increased. This suggests that the strategy to invest in plant and equipment has worked well in the favor of the company. This is further emphasized by the fact the return on total assets has also increased.

Find Glossary from next page.

GLOSSARY

RATIOS EXPLAINED WITH DATA FROM THE PROBLEM:

CURRENT RATIO

Ratio	2007	2008	2009
Current Ratio	2.00	2.13	2.18

9%

Here if the Current Assets is divided by Current Liabilities in the base year itself, you get 2.00 which means that if current liability is Re.1 the Current Asset is Rs.2. In the second and third year, it has only increased. This means the Company as such is comfortable to pay off its current liabilities in the course of its business. However, it exceeds the standards of more than 0.67. The reasons could be multiple like more stocks, receivables and undervaluation of liabilities etc.

$$\text{Current Ratio} = \frac{(\text{Cash and cash equivalents} + \text{Marketable securities} + \text{Account Receivables} + \text{Inventory} + \text{Other current assets})}{(\text{Accounts payable} + \text{Short term debt} + \text{other current liabilities})}$$

ACID TEST RATIO

Ratio	2007	2008	2009
Acid-test(quick) ratio	1.20	1.10	0.97

19%

As said earlier the Acid Test Ratio is below the Current Ratio. It means that the Current Assets which can be converted to liquid cash within a period of ninety days is less but sufficient to cover the current liabilities by 1.20 times in the first year. But this Ratio shows a decreasing trend in the second and third year which causes concern.

$$\text{Current Ratio} = \frac{(\text{Cash and cash equivalents} + \text{Marketable securities} + \text{Account Receivables})}{(\text{Accounts payable} + \text{Short term debt} + \text{other current liabilities})}$$

ACCOUNTS RECEIVABLE TURNOVER

Ratio	2007	2008	2009
Accounts Receivable Turnover	9.72	8.57	7.13

27%

In the first year, the ratio of receivables to turnover is 9.72 times and has shown a decreasing trend in the second and third year. This means that receivables are increasing on year to year basis and hence the Ratio is decreasing which could be worrisome in the long run.

$$\text{ACT} = \frac{365}{Net\ Credit\ Sales / Avg\ Accounts\ Receivable}$$

INVENTORY TURNOVER

Ratio	2007	2008	2009
Inventory Turnover	5.25	4.8	3.8

28%

This Ratio is number of times the inventory to sales. That is if Inventory is Re.1 Sales is 5.25 times the inventory. That is the Company is able to sell 5.25 times of its Inventory which means it can exhaust its inventory in just 68 days approximately. (12 months/5.25 times=2.29 months or 68 days). But here too the ratio is showing a decreasing trend in the second and third year which means that the company is finding it difficulty in disposing off its stocks.

$$\text{INT} = \frac{\text{Cost of Goods Sold}}{Average\ Inventory}$$

PERCENT OF TOTAL DEBT TO TOTAL ASSETS

Ratio	2007	2008	2009
Percent of total debt to total assets	44%	41%	38%

This means that 44% of Total Assets is funded by borrowed funds. (Assets=100 and 44% of that is from borrowed funds). The Ratio is reasonable as it is below 50% and the other 50% is shareholders contribution which means that Shareholders have invested 56% which is really good. Moreover, this Ratio is showing decreasing trend which means the Company is repaying its debts to some extent every year and hence the decrease in ratio of borrowed funds to assets ratio.

$$\text{DTA} = \frac{(\text{Short Term debt} + \text{Long term debt})}{Total\ Assets}$$

PERCENTAGE OF LONG TERM DEBT TO TOTAL ASSETS

Ratio	2007	2008	2009
Percentage of long term debt to total assets	25%	22%	19%

19%

Normally Fixed Assets are funded by Long Term Debts only as the whole project may depend on this item (viz., Fixed Assets). If funds are borrowed from short term funds the repayment may be very short and the company may not have the liquidity. Hence this Ratio is useful in determining how much of the Funds are from Long Term. Here it is 25% in the first year and in total debt ratio (including short term and long term debts=total debts) it showed 44%. So, it can be said that 19% is funds from funds other than Long Term Funds which is comparatively high. But there is also a reduction in the second and third as in the total debts to fixed assets ratio also. As specific figures are now available we can say there is reduction of short term/long term debts in the second and third year.

$$\text{LTA} = \frac{(\text{Long term debt})}{Total\ Assets}$$

SALES TO FIXED ASSETS (FIXED ASSET TURNOVER)

Ratio	2007	2008	2009
Sales to fixed assets (fixed asset turnover)	1.75	1.88	1.99

14%

This Ratio represents the Turnover with respect to Fixed Assets. If fixed assets is 100 then sales is 175 (1.75 times of fixed assets). The ratio is higher in the second and third year which is generally a good sign. However, this could also be because of reduction in fixed assets every year by depreciation which is not known as figures are not available.

$$\text{FAT} = \frac{\text{Net Sales}}{\textit{Fixed Assets}}$$

SALES AS A PERCENT OF 2007 SALES

Ratio	2007	2008	2009
Sales as a percent of 2007 Sales	100%	103%	106%

If Sales of 2007 is Rs.100 it is Rs.103 in 2008 and Rs.106 in 2009. Hence the increase in turnover is only 3% in second year and 6% in third year. Not much increase as normally due to inflation prices of products are increased every year and this may be the reason for increase in sales also and not because of increase in demand or volume.

GROSS PROFIT PERCENTAGE

Ratio	2007	2008	2009
Gross Profit Percentage	40.0%	33.6%	38.5%

Gross Profit divided by Sales is 40%. This ratio decreased in second year and increased in the third year. This could be due to various factors like cost of increase in inputs, leads to dip in gross profits. The management may have realized this and could have corrected the prices in the subsequent year. The Inventory ratio is also decreased and so the dip in gross profit percentage is not as a result of inventory as there the inventory increased reducing the Inventory ratio.

$$\text{GP} = \frac{Revenue\ COGS}{Revenue}$$

NET INCOME TO SALES

Ratio	2007	2008	2009
Net Income to Sales	7.8%	7.8%	8.0%

Though the Gross Profit decreased in the second year the Net Income Ratio is the same and even increased in the third year. This shows that the Company has maintained its Establishment and Administrative and Other

Expenses the same. But there is also another possibility that due to repayment of Debts and reduced Interest burden as also decrease in Depreciation amount, the Company was able to maintain the same profit and increase it marginally in the third year.

$$\text{NI} = \frac{Profit\ After\ Tax}{Net\ Sales}$$

RETURN ON TOTAL ASSETS (ROTA)

Ratio	2007	2008	2009
Return on Total Assets	8.5%	8.6%	8.7%

The Company has shown a return of 8.5% on its total assets. This is comparable with industry standards but to gain even more insight companies in the same category has to be compared to find the profitability. This has shown an increase every year. This ratio normally does not convey much and hence not many use this ratio for arriving at decisions of investment.

$$\text{ROTA} = \frac{EBIT}{Total\ Assets}$$

RETURN ON STOCKHOLDERS' EQUITY

Ratio	2007	2008	2009
Return on Stockholders' Equity	15.1%	14.6%	14.1%

This is an important Ratio as the Shareholders make whether to invest based on the return on Capital employed. Here the Company had 15.10% in the first year but is showing a reducing tendency which is not good. This Ratio is also compared with the Government Securities/Bonds etc., which give a conservative return to see by how much points this Percentage is more compared to the government or bank returns.

$$\text{ROE} = \frac{Net\ Income}{\text{Shareholder's equity}}$$

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