CHAPTER - VII

SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSION

INTRODUCTION

This chapter deals with an intent to consolidate the key findings of the present study. Based on the findings of the study, few suggestions have been outlined. This study has been carried out with an aim to assess and measure the financial performance of large scale paper companies in India and for this purpose nine companies has been selected.

7.1 FINDINGS

The study has come out with major finding that has been arrived from the analysis.

COST STRUCTURE ANALYSIS

The average raw material cost to net sales ratio of West Coast Paper Mills Ltd was 48.58 percent which was the highest ratio among the unit under the study, while the raw material cost of Tamilnadu Newsprint and Paper Limited was 25.49 percent which was the lowest among all units under study. The Co-efficient of Variation was the maximum of 16.27% obtained by J.K Paper Mills Ltd and the minimum of 7.90% gained by Sirpur Paper Mills Ltd. To test whether there is any significant difference in the ratio of raw material
consumed to net sales among the sample companies, the’ F’ test has been applied and the result shows that there is a significant difference in the ratio of raw material cost to net sales in the companies under the study.

The average power and fuel cost to net sales ratio of Mysore Paper Mills Ltd was 27.34% which was the highest ratio among all units under the study, while the power and fuel cost of the West Coast Paper Mills Ltd was 10.07% which was the lowest ratio among all units under study. The Co-efficient of Variation was the maximum of 53.54% obtained by West Coast Paper Mills Ltd and the minimum of 13.59% gained by Tamil Nadu Newsprint and Paper Ltd. From the analysis of ‘F’ test, the result shows that there is a significant difference in the ratio of power and fuel cost to net sales in the companies under the study at 5% level of significance.

The average wages and salaries cost to net sales ratio of Mysore Paper Mills Ltd was 16.90% which was the highest ratio among the units under the study, while the average ratio of Tamil Nadu Newsprint and Paper Ltd was 6.78% which was the lowest ratio among the units under the study. The Co-efficient of Variation was the maximum of 33.39% obtained by Seshasayee Paper and Board Limited and the minimum of 8.98% which was gained by Star Paper Mills Ltd. From the analysis of ‘F’ test, the result shows that there is a significant difference in the ratio of wages and salaries cost to net sales in the companies under the study.
The average manufacturing cost to net sales ratio of Mysore Paper Mills Ltd was 89.05% which was the highest ratio among the units under the study, while the average ratio of Tamilnadu Newsprint and Paper Limited was 60.56% which was the lowest ratio among the units under the study. The Co-efficient of Variation was the maximum of 10.48% obtained by Pudumjee Paper Mills Ltd and the minimum of 3.16% gained by Sirpur Paper Mills Ltd. The F test result shows that there is a significant difference in the ratio of manufacturing cost to net sales in the companies under the study.

The average selling and administration cost to net sales ratio of J.K Paper Mills Ltd was 11.49% which was the highest ratio among the units under the study, while the average ratio of Pudumjee Paper Mills Ltd was 1.15% which was the lowest ratio among the units under the study. The Co-efficient of Variation was the maximum of 71.93% obtained by Pudumjee Paper Mills Ltd and the minimum of 9.24% gained by Andhra Pradesh Paper Mills Limited. The ‘F’ test result shows that there is a significant difference in the ratio of selling and administration cost to net sales in the companies under the study at 5% level of significance.

The average depreciation cost to net sales ratio of Tamil Nadu Newsprint and Paper Limited was 8.91% which was the highest ratio among the units under the study, while the average ratio of Mysore Paper Mills Ltd was 3.15% which was the lowest ratio among the units. The Co-efficient of Variation was the maximum of 57.57% obtained by Sirpur Paper Mills Ltd.
and the minimum of 14.46% gained by Tamil Nadu Newsprint and Paper Limited. The ‘F’ test results shows that there is a significant difference in the ratio of depreciation cost to net sales in the companies under the study.

The average financial charges to net sales ratio of Tamil Nadu Newsprint and Paper Ltd was 6.62% which was the highest ratio among the units under the study, while the average ratio of West Coast Paper Mills Ltd was 2.50% which was the lowest ratio among all the units. The Co-efficient of Variation was the maximum of 84.06% obtained by Tamil Nadu Newsprint and Paper Limited and the minimum of 30.90% gained by Andhra Pradesh Paper Mills Limited. The ‘F’ test result shows that there is no significant difference in the ratio of financial charges to net sales in the companies under the study.

The result of consolidated table of ANOVA test revealed that out of seven expenses, six expenses which were significantly different which also indicated that the effect of expenses on net sales for all the nine companies were not same and they were different. Whereas, the seventh expenses, (i.e) financial charges alone shows that there is no significant difference among the nine companies.

**LIQUIDITY ANALYSIS**

Liquidity refers to the ability of a company to provide cash to meet the claims. Liquidity or solvency of the company has been analysed by liquidity
or solvency ratios. Further the liquidity ratios can be classified into two broad heads i.e (i) Short-term liquidity ratio (ii) Long term liquidity ratio.

**Short-term Liquidity Ratio**

In this study, Current ratio, Inventory turnover ratio and Debtors turnover ratio are taken as short-term liquidity ratios.

The mean current ratio of Pudumjee Paper Mills Limited was 3.72 which is the highest among the units, while the mean ratio of Andhra Pradesh Paper Mills Ltd was 1.36 which is the lowest among the units under the study. The mean current ratio of Mysore Paper Mills Ltd, Star Paper Mills Ltd, Seshasayee Paper and Board Ltd, Sirpur Paper Mills Ltd and Andhra Pradesh Mills Ltd were far below the conventional standard of 2:1. It indicates that the liquidity position of these companies were not satisfactory. The Co-efficient of Variation was the maximum of 35.94% obtained by Mysore Paper Mills Ltd and the minimum of 15.05% gained by Andhra Pradesh Paper Mills Ltd. In order to know whether the trends in current ratio of sample companies are on the improving path or not, the regression equation of \( Y = \beta_0 + \beta_1 \) is used. It shows that the only four companies viz., Sirpur Paper Mills Ltd, Star Paper Mills Ltd, Tamil Nadu Newsprint and Paper Limited and West coast Paper Mills Ltd have a significant trend which reveals that these companies are on the improvement path. The remaining five companies have no significant trend.
The mean ratio of inventory turnover of Seshasayee Paper and Board Limited was 11.92 which is the highest among the units while the mean ratio of Mysore Paper Mills Limited was 2.75 which is the lowest among the units under the study followed by Tamil Nadu Newsprint and Paper Ltd, Andhra Pradesh Paper Mills Limited, West Coast Paper Mills Limited, Pudumjee Paper Mills Limited. It indicates that inefficient inventory management prevails in these companies. The Coefficient of Variation was the maximum of 51.33% obtained by Seshasayee Paper and Board Limited and the minimum of 12.23% gained by Andhra Pradesh Paper Mills Limited. To assess the trend of inventory turnover ratio of sample companies are on the improvement path, the regression equation is used. It shows that only three companies such as Andhra Pradesh Paper Mills Limited, Tamil Nadu Newsprint and Paper Limited, Sirpur Paper Mills Limited have a significant trend and are on the improvement path at 5% level of significance.

The mean ratio of Debtors turnover of Star Paper Mills Limited was 16.57 which is the highest among the units while the mean ratio of Pudumjee Paper Mills Limited was 2.84 which is the lowest among the units under the study followed by Sirpur Paper Mills Limited, Tamil Nadu Newsprint and Paper Limited and J.K Paper Mills Limited. It indicates the inefficient Debtors Management. The Coefficient of variation was the maximum of 49.77% obtained by Star Paper Mills Ltd and the minimum of 11.26% gained by Andhra Pradesh Paper Mills Limited. To know whether the trends in
debtors turnover ratio is improving or not, the regression equation is used and it shows that only three companies viz, Seshasayee Paper and Board Limited, Star Paper Mills Limited and Tamil Nadu Newsprint and Paper Limited have significant trend and are on the improvement path at 5% level of significance.

**Long-term Solvency Ratio**

The following two ratios serve the purpose of determining the long term solvency of the concern

(a) Debt equity ratio (b) Interest coverage ratio

The mean ratio of Debt Equity of Mysore Paper Mills Limited was 4.64 which is the highest among the units, while the mean ratio of Pudumjee Paper Mills Limited was 0.88 which is the lowest among the units under the study. In order to compare with standard norms of Debt-equity ratio (1:1) all the companies have high level of risk except Pudumjee Paper Mills Ltd and Star Paper Mills Ltd. The Co-efficient of Variation was the maximum of 168.99% obtained by Mysore Paper Mills Ltd and the minimum of 18.91% gained by Andhra Pradesh Paper Mills Ltd. To find out whether the trends in debt equity ratio is moving on the improvement path or not, the regression equation is used and it shows that only three companies viz, J.K Paper Mills Ltd, Sirpur Paper Mills Ltd and Star Paper Mills Ltd have a significant trend and are on the improvement path at 5% level of significance.
The mean value of interest coverage ratio of Seshasayee Paper and Board Ltd was 27.54 which is the highest among the units while the mean ratio was the lowest in case of Mysore Paper Mills Ltd 0.31, followed by Star Paper Mills Ltd 1.89 and J.K Paper Mills Ltd 2.01. The Co-efficient of Variation was the maximum of 548.84% obtained by Mysore Paper Mills Ltd and the minimum of 42.13% gained by Andhra Pradesh Paper Mills Ltd. To assess the trends of Interest coverage of sample companies is on the improvement path, the regression equation is used and it shows that only three companies such as J.K Paper Mills Limited, Tamil Nadu Newsprint and Paper Limited and West Coast Paper Mills Limited have a significant trend and are on the improvement path at 5% level of significance.

**PROFITABILITY ANALYSIS**

The mean ratio of gross profit margin during the study period was the highest in case of Tamil Nadu Newsprint and Paper Ltd 24.46% followed by J.K Paper Mills Ltd 15.94%, Andhra Pradesh Paper Mills Ltd 15.68%, Seshasayee Paper and Board Limited 14.55%, Pudumjee Paper Mills Limited 14.41%, and Sirpur Paper Mills Ltd 13.56%. The Gross profit margin ratio of Star Paper Mills Ltd and Mysore Paper Mills Ltd shows negative trend during the period of 2000-01 and from 2010-2012 respectively. It indicates that cost of goods sold in the respect year was more than the sales. The Co-efficient of Variation was the maximum of 245.59% obtained by Mysore Paper Mills Ltd.
and the minimum of 15.11% gained by Tamil Nadu Newsprint and Paper Limited. In order to know whether trends in gross profit ratio of selected companies are on the improvement path or not, the regression equation is used and it shows that the gross profit margin ratio of four companies viz. Andhra Pradesh Paper Mills Limited, J.K. Paper Mills Limited, Pudumjee Paper Mills Limited and West Coast Paper Mills Limited have a significant trend which indicates that these four companies are on the improvement path, whereas the remaining five companies have no significant trend which reveals that these companies are not on the improvement path.

The mean ratio of net profit of Tamilnadu Newsprint and Paper Ltd was 7.36% which is the highest among the units and Mysore Paper Mills Ltd was –4.42% which is the lowest and shows negative trend among the units under the study. The net profit margin ratio of Star Paper Mills Limited, Mysore Paper Mills Limited and Pudumjee Paper Mills Limited registered negative trend during the period 1998-2001, 2002-2003 and 2009-2012 respectively due to excess operating expenses for these period. The Coefficient of variation was the maximum of 401.98% obtained by Star Paper Mills Limited and the minimum of -200.53% gained by Mysore Paper Mills Limited. In order to know whether trends in net profit ratio of selected companies are on the improvement path or not, the regression equation is used and it shows that the net profit margin ratio of four companies viz, Pudumjee Paper Mills Ltd, Seshasayee Paper and Board Ltd, Tamilnadu
Newsprint and Paper Ltd and West Coast Paper Mills Ltd have a significant trend and are on the improvement path.

The mean ratio of return on net worth of West Coast Paper Mills Ltd was 18.80% which is the highest among the units and Mysore Paper Mills Ltd was -49.86% which is the lowest and negative trend among the units under the study. The mean ratio of return on net worth of Tamil Nadu Newsprint and Paper Ltd, Star Paper Mills Limited, Mysore Paper Mills Limited, Pudumjee Paper Mills Limited, and Sirpur Paper Mills Limited registered negative trend during the year 1998-2001, 2002-2006 and 2009-2012 respectively, which indicates that the resources of the firms are not properly used for this respective years. The Co-efficient of Variation was the maximum of 365.94% obtained by Star Paper Mills Ltd and the minimum of -419.67% gained by Mysore Paper Mills Ltd. To assess the trend of return on net worth of the selected companies are on the improvement path, the regression equation is used and it shows that only two companies viz., Seshasayee Paper and Board Ltd and Tamil Nadu Newsprint and Paper Ltd have a significant trend and are on the improvement path at 5% level of significance.

The mean ratio of return on capital employed of West Coast Paper Mill Limited was 12.31 which is the highest among the units and Mysore Paper Mills Ltd was 0.13 which is the lowest among the units under the study. The return on capital employed of Star Paper Mills Ltd and Mysore Paper
Mills Ltd registered negative trend during the year 1999-2001, 2002-2004 and 2010-2012 respectively, which indicates that the long term funds of owners and creditors were not being used efficiently. The Co-efficient of Variation was the maximum of 388.19 obtained by Mysore Paper Mills Ltd and the minimum of 29.19% gained by Andhra Pradesh Paper Mills Ltd. To find out whether the trends in return on capital employed is moving on the improvement path or not, the regression equation is used and it shows that only three companies such as Andhra Pradesh Paper Mills Ltd, J.K Paper Mills Ltd, Pudumjee Paper Mills Ltd have a significant trend and are on the improvement path at 5% level of significance.

**DETERMINANTS OF PROFITABILITY**

In this study, the Return on Capital Employed (ROCE) is used as dependent variable and size, growth rate of sales, operating ratio, leverage ratio, liquidity ratio, inventory turnover ratio, and fixed assets turnover ratio are used as independent variable.

It is evident from the results of the determinants of profitability of Andhra Pradesh Paper Mills Ltd reveals that the operating ratio is the strongest determinants of profitability followed by leverage and statistically significant at 5% level. The other variables like growth rate of sales and liquidity ratio have positive associations with profitability and size, inventory
turnover ratio and fixed assets turnover ratio are negative associations with profitability. All these variables are statistically insignificant.

The results of determinants of profitability of J.K Paper Mills Ltd shows that the operating ratio is the strongest determinant of profitability and statistically significant at 5% level. The other variables like size, growth rate of sales, leverage, liquidity, inventory turnover ratio and fixed assets turnover ratio are statistically insignificant. All these variables except size and fixed assets turnover ratio are negative associations with profitability.

The determinants of profitability of Mysore Paper Mills Limited reveals that the growth rate of sales is the strongest determinant of profitability followed by fixed assets turnover ratio and statistically significant at 5% level. The other variables namely size, operating ratio, leverage ratio, liquidity ratio and inventory turnover ratio are statistically insignificant. All these variables except size and liquidity ratio are negative associations with profitability.

In order to use the Multiple regression analysis model, the determinants of profitability of Pudumjee Paper Mills Limited reveals that the inventory turnover ratio is the strongest determinant of profitability which is statistically significant at 5% level. The all other variables are statistically insignificant and positive associations with profitability except size and fixed assets turnover ratio.
To use the multiple regression analysis model, the determinant of profitability of Sirpur Paper Mills Ltd indicates that the size is the strongest determinant of profitability followed by fixed assets turnover ratio, inventory turnover ratio and growth rate of sales are statistically significant at 1% and 5% level. The other variables like operating ratio, leverage ratio, liquidity ratio are statistically insignificant. All the variables are positively influenced with profitability except leverage ratio.

To understand the influence of profitability, the linear multiple regression model is used. The results of Seshasayee Paper and Board Limited shows that the size is the strongest determinant of profitability followed by fixed assets turnover ratio, growth rate of sales and operating ratio are statistically significant at 1% and 5% level. These variables are positively influenced with profitability. The other variables like leverage ratio, liquidity ratio and inventory turnover ratio are statistically insignificant and negatively influenced with profitability of the company.

The results of determinants of profitability of Star Paper Mills Ltd indicates that the operating ratio is the strongest determinant of profitability followed by growth rate of sales, leverage ratio, fixed assets turnover ratio, size and inventory turnover ratio. They are statistically significant at 1% and 5% level. The variable, liquidity is found statistically insignificant.

In order to use the multiple regression analysis model, the determinants of profitability of Tamil Nadu Newsprint and Paper Limited reveals that fixed
assets turnover ratio is the strongest determinant of profitability followed by operating ratio and statistically significant at 1% and 5% level. The all other variables are statistically insignificant. The operating ratio, leverage and liquidity ratio are negatively associated with profitability. The other variables are positive associations with profitability of the company.

To use the multiple regression analysis model, the determinant of profitability of West Cost Paper Mills Ltd shows that the fixed assets turnover ratio is the strongest determinant of profitability followed by operating ratio and statistically significant at 5% level. The all other variables are statistically insignificant. The variables like liquidity ratio and fixed assets turnover ratio are positive associations with profitability and the remaining variables are negative associations with profitability.

**CORRELATION MATRIX**

The correlation matrix of Andhra Pradesh Paper Mills Ltd shows that there is a high degree of positive association between Size, Growth rate sales and Inventory Turnover ratio and negative association between Fixed assets turnover ratio and Return On Capital Employed (ROCE). The growth rate sales is significantly positively correlated with inventory turnover ratio and negatively correlated with fixed assets turnover ratio and ROCE. The leverage ratio is significantly negatively correlated with fixed assets turnover ratio and ROCE at 5% and 1% level of significance. The fixed assets turnover ratio is
significantly positively correlated with ROCE at 1% level of significance (i.e.) 0.800. Hence, the impact of selected variables on profitability viewed both positive and negative associations.

With the help of correlation co-efficient analysis, the relationship between the variables of J.K Paper Mills Ltd reveals that there is a significant negative relationship between size, operating ratio and fixed assets turnover ratio. The growth rate sales is significantly negatively correlated with operating ratio, leverage ratio and positively correlated with inventory turnover ratio and ROCE. The operating ratio is positively correlated with leverage and negatively correlated with inventory turnover ratio and ROCE at 1% level of significance. The leverage is significantly negatively correlated with inventory turnover ratio and ROCE and the inventory turnover ratio is positively correlated with ROCE (i.e.) 0.620 at 5% level.

The inter correlation matrix of selected variables in Mysore Paper Mills Ltd indicates that there is a high degree of negative association between size and liquidity ratio. The growth rate of sales is significantly negatively correlated with operating ratio and positively correlated with inventory turnover ratio and fixed assets turnover ratio. The operating ratio has significantly negatively correlated with inventory turnover ratio and ROCE. It indicates that the selected variables on profitability showed a negative associations.
In order to use the correlation co-efficient analysis, the relationship between the variables of Pudumjee Paper Mills Ltd shows that there is a significant positive relationship between size and leverage ratio. The growth rate of sales is significantly positively correlated with inventory turnover ratio and fixed assets turnover ratio. The operating ratio is significantly negatively correlated with inventory turnover ratio and fixed assets turnover ratio, and inventory turnover ratio has significantly positively correlated with fixed assets turnover ratio. The correlation co-efficient between size and growth rate of sales, operating ratio and leverage ratio indicates that there is a lower degree of negative correlation with ROCE.

The inter correlation matrix of selected variables in Seshasayee Paper and Board Limited indicates that the correlation between leverage ratio with ROCE is \(-0.699\) at 1% level of significance which shows that there is a high degree of negative association with ROCE. There is a significant relationship between size and growth rate sales, leverage, liquidity, inventory turnover ratio and fixed assets turnover ratio. The growth rate of sales is significantly positively correlated with leverage and inventory turnover ratio is negatively correlated with liquidity. The co-efficient of correlation between size and growth rate of sales are \(-0.390\) and \(-0.481\) which shows lower degree of negative correlation with ROCE.

The correlation matrix of Sirpur Paper Mills Ltd shows that there is a high degree of negative association between operating ratio and fixed assets
turnover ratio at 1% and 5% level of significance. The liquidity ratio has significantly positively correlated with inventory turnover ratio. The co-efficient of correlation between size, growth rate of sales and leverage ratio are 0.164, 0.080 and 0.121 which indicates lower degree of positive correlation with ROCE.

With the help of correlation co-efficient analysis, the relationship between the variables of Star Paper Mills Ltd reveals that the operating ratio has high degree of negative associations with ROCE at 1% level of significance. The leverage ratio has significantly positively correlated with liquidity and negatively correlated with fixed assets turnover ratio. The liquidity ratio has negatively correlated with inventory turnover ratio and fixed assets turnover ratio. The inventory turnover ratio has significantly positively correlated with fixed assets turnover ratio. The correlation coefficient of liquidity and ROCE is -0.051 which indicates a lower degree of negative correlation between them.

In order to use the correlation co-efficient, the relationship between the variables of Tamil Nadu Newsprint and Paper Limited shows that there is a significant positive relationship between size, growth rate of sales and leverage ratio. The liquidity ratio has significantly negatively correlated with inventory turnover ratio and fixed assets turnover ratio, and the inventory turnover ratio has positively correlated with fixed assets turnover ratio and ROCE at 1% level of significance. The fixed assets turnover ratio has
significantly positively correlated with ROCE at 5% level of significance. The impact of selected variables on profitability viewed positive associations.

The correlation matrix of West Coast Paper Mills Limited shows that there is a significant negative relationship between the size and growth rate of sales, operating ratio and fixed assets turnover ratio. The operating ratio has positively correlated with fixed assets turnover ratio and fixed assets turnover ratio has positively correlated with ROCE at 5% level of significance.

**FINANCIAL HEALTH (Z SCORE ANALYSIS)**

Traditional financial ratio analysis is very important, but it can be used only in conjunction with other tools. This study will combine ratio analysis with a statistical technique and discriminate analysis. For that purpose a popular model, the Altman Z score model is used in order to assess the financial health of selected paper companies.

The result of Z score value of Andhra Pradesh Paper Mills Ltd shows that there is a fluctuating trend from 1.51 in the year 1997-98 to 1.38 in the year 2011-2012. The mean value of Z score of the company is 1.38 during the study period. It has been in the Distress Zone for 11 years (1997-1999, 2001-2004 and 2006-2012), while it has been in the Grey Zone for 4 years (1999-2001, 2004-2006). The variable wise analysis reveals that the company has registered a poor working capital ratio, poor profitability and low assets
turnover ratio. It can be concluded from the study that the financial health of Andhra Pradesh Paper mills Ltd was poor during the study period.

The summated Z score value of J.K Paper Mills Ltd varied between 1.11 in 2008-09 and 1.92 in the year 2011-12. The mean value of Z score is 1.60. The financial health of the company was highly critical and it has been in the Distress Zone for 8 years from 2001-2009. The remaining years, the Z score reached the Grey Zone from 1997-2001 and 2009-2012. The variable wise analysis reveals that the high debt equity position and total assets turnover to reach Grey zone during the study period. It can be concluded that the financial health of J.K. Paper Mills Ltd was satisfactory especially for the first four years and last three years of the study period.

The Z score of the five key ratios of Mysore Paper Mills Ltd reveals that the value of $X_2$, $X_3$ variables showed a negative trend from 1997-2005 and from 2010-2012 due to operating loss and low earnings before interest and tax. The mean value of Z score of the company is 1.38. It has been in the Distress Zone for 9 years (1998-2005 and 2010-2012), while it has been in the Grey zone for 6 years (1997-98 and 2005-2010). The variable wise analysis reveals that during the study period, the company has operating loss, poor profitability and poor performance of working capital position. It can be concluded that the financial health of Mysore Paper mills Ltd is not satisfactory during the study period.
The resulted Z score variable of Pudumjee Paper Mills Ltd shows that the financial health of the company was highly critical in the year from 1999-2007. From the year 2007-08 and onwards it reached the Grey zone. In the last 5 years, the Financial health of the company has shown a significant performance. The mean value of Z score of the company is 1.63. It has been in the Distress Zone for 8 years (1999-2007), while it has been in the Grey Zone for 7 years (1997-1999, 2007-12). The variable wise analysis reveals that during the study period, the company has registered good sales performance and high total assets turnover to reach the Grey Zone. It can be concluded from the study that the financial health of Pudumjee Paper mills Ltd was satisfactory especially for the last 5 years.

The result of Z score value of Seshasayee Paper and Board Limited indicates that the company is fluctuated between 2.09 of the highest in the year 2003-04 and 1.01 of the lowest in the year 2000-2001 due to poor working capital position. The mean value of Z score of company is 1.57. It has been in the Distress Zone for 8 years (1998-2002, 2005-06, 2008-2010 and 2011-12), while it has been in the Grey Zone for 7 years (1997-98, 2002-2005, 2006-2008 and 2010-11). The variable wise analysis indicates that the company has registered a poor working capital ratio, poor profitability and low leverage ratio. It can be concluded from the study that the financial health of company was poor throughout the study period.
The summative Z score value of Sirpur Paper Mills Ltd shows the decreasing trend throughout the study period. The value of $X_1$ variable showed a negative trend from 2006-2012 due to poor performance of working capital. The mean value of Z score of company is 1.10. It has been in the Distress Zone for 14 years (1998-2012), while it has been in the Grey Zone for one year (1997-98). The variable wise analysis reveals that the firm has registered a poor working capital ratio, poor profitability ratio, low leverage ratio and low assets turnover ratio. It can be concluded from the study that the financial health of Sirpur Paper Mills Ltd was very poor throughout the study period.

The Z score of five key ratio of Star Paper Mills Ltd indicates that it has fluctuated from 1.22 in 1997-98 to 1.44 in 2004-05. In the year 2010-11, it has been in Safe zone of 3.61. The value of $X_1$ variable showed a negative trend from 2005-2012 due to poor working capital position. The mean value of Z score of company is 1.63. It has been in the Grey zone for 6 years (2005-2010 and 2011-12) and it has been in the Distress zone for 8 years (1997-2005). The variable wise analysis reveals that the firm has registered a poor working capital, but it has high debt equity position and total assets turnover position. It can be concluded from the study that the financial health of Star Paper Mills Ltd was satisfactory especially for the last seven years of the study period.
The resulted value of Z score of Tamilnadu Newsprint and Paper Limited reveals that the mean value of Z score of the company is 1.57. It has been in the Distress Zone for 8 years (1997-2001, 2004-2006 and 2010-2012), while it has been in the Grey Zone for 7 years (2001-2004 and 2006-2010). The variable wise analysis reveals that the company has registered good sales performance, high debt equity and total assets turnover position. It can be concluded that the financial health of the company was satisfactory except last two years of the study period.

The summative Z score of West Coast Paper Mills Ltd shows that the financial health of the company was highly critical in the last 3 years and it has been in the Distress Zone for the last 3 years from 2009-2012. In the remaining years, (i.e. 12 years) the Z score reaches the Grey Zone from 1997-2009. The variable wise analysis reveals that the during the study period, except last 3 years, the company has registered a good sales performance and high total assets turnover position. It can be concluded from the study that the financial health of West Coast Paper Mills Ltd was satisfactory especially for the first twelve years of the study period.

The results of consolidated table of Z score model revealed that the financial health of selected large scale paper companies during the study period was in Grey Zone except 4 companies such as Andhra Pradesh Paper mills Ltd, Mysore Paper mills Ltd, Seshasayee Paper and Board Ltd, and Sirpur Paper Mills Ltd. The majority of the study period clearly reveals that
the above 4 companies Z score was below 1.80. It is indicated that the financial health of these four companies were poor.

**SUGGESTIONS**

Having analysed and interpreted several variables under this study, the researcher just put forth the suggestions and recommendations as follows:

- While analysing the raw material cost to net sales ratio, the mean value is high in West Coast Paper Mills Ltd followed by Andhra Pradesh Paper Mills Ltd and Pudumjee Paper Mills Ltd. These companies are suggested to adopt Material Management techniques such as Budgetary Control, standard costing and value analysis.

- The majority of plants are not fully utilized due to scarce in raw material. So, the paper companies are suggested to go for plantation programme for self sufficiency in raw materials. The Government should encourage the growth of large scale plantations of eucalyptus plants.

- Among the selected Nine companies, the mean value of power and fuel cost to net sales is very high in Mysore Paper Mills Ltd followed by Star Paper Mills Ltd and Tamilnadu Newsprint and Paper Limited. These companies can reduce the power and fuel consumption by using lignite and agro waste product especially ground nut husk and bagasse can be used as coal substitute.
The mean value of Wages and Salaries cost to net sales is high in Mysore Paper Mills Ltd and Sirpur Paper Mills Ltd. The over staffing and over lead personnel cost is a major reason of disappointing profitability of this company. Employment cost can be controlled through improvement in efficiency and productivity of employees. Extra staff can be diverted to other works. All efforts can be made to tune up the efficiency and ensure effectiveness in this regard.

The manufacturing cost to net sales of Mysore Paper Mills Ltd was very high followed by Sirpur and Star Paper Mills Ltd. The management are suggested to adopt cost reduction techniques in mills to get over this critical situation. The companies have to take necessary efforts and allot funds to upgrade their production technology by inducting imported machinery. This may appears as increase in investment but it is factual attempt on upgrading technology and thus any investment in manufacturing facilities and modernization will be a critical ingredient for the success of units.

Efforts can be made by the J.K Paper Mills Ltd to control the administration cost and reduce the selling and distribution overheads.

By analysing the financial charges to net sales ratio, the mean value is very high in Tamilnadu Newsprint and Paper Limited followed by Seshasayee Paper and Board Limited. The study reveals that the cost of the finance was one of the important factors which cause weakness to
these units. The interest rate of charges by the bankers and financial institutions are very high when compared to international rate of interest. To augment, the competitiveness of Exports and to avoid weakness, efforts shall be taken by the government to provide financial assistance for the both working capital and fixed capital on par with international rates of interest.

- The average current ratio of Andhra Pradesh Paper Mills Ltd is not satisfactory during the study period followed by Seshasayee Paper and Board Limited, Sirpur Paper Mills Ltd and Mysore Paper Mills Ltd. To strengthen the short term liquidity position, long term funds have to be used to finance current assets. It will be better for these companies to reduce the over-sized short term loans and advances. Better cash position would earn credit confidence and reduce the risk of short term crisis.

- The inventory turnover ratio of Mysore Paper Mills Ltd showed the poor performance of inventory management. The norms for both consumption and stocking of raw materials should be framed and the limits should never be exceeded. Reduction of overstocking of inventory is necessary for organisational improvements. The administrative delays and procurement lead time in purchasing of inventory have to be curtailed. So, the company has to maintain an
integrated and distinctive department for management of inventory and it can work in liaison with finance department.

- The collection policy of Pudumjee Paper Mills Ltd and Tamilnadu Newsprint and Paper Limited were not found to be satisfactory. This situation can be modified by following an appropriate receivables policy. A better co-ordination between sales, production and finance departments should maintain prompt billing, timely reminder to defaulting customers and immediate action against delinquent accounts should be ensured. The collection policy should be evaluated periodically. Discriminate analysis can be applied to distinguish good and bad accounts based on the credit score given to the customers.

- The average debt equity ratio of Mysore Paper Mill Ltd was very high followed by Seshasayee Paper and Board Limited and J.K. Paper Mills Ltd. These companies find the ways and means to minimize the accumulation of debt capital which consumes cost of capital through interest and restrict the use of idle assets. This may lead to the fullest utilization of equity capital and helps the company to pay more dividends to the shareholders. This in turn may also increase the net worth of the companies.

- The Star Paper Mills Ltd and Mysore Paper Mills Ltd incurred low net profit and net loss respectively during the study period. In order to increase the profitability of the companies, it is suggested to control the
cost of goods sold and operating expenses. The management of both companies are suggested to adopt proper profit planning and effective marketing policy to avoid low profit and loss.

- Product mix is the way of improving profitability of the mills. Instead of selling paper it can convert them into paper products like paper bag, paper cup, paper cover etc., so that the marketability will be more effective.

- It is found that the 15 years of the study period, sample companies were found to be in financially Distress zone and in Grey zone. Appropriate measures may be taken to improve their ‘Z’ score. The problem of under trading must be attended immediately. Further the companies should plan to have an adequate working capital. The companies must take all possible steps to achieve the sales targets and the deviation from the target must be attended. The companies need to take necessary steps to utilize the available capacity and the fixed assets are to be purchased only when the company is able to utilize its full capacity. The capital structure is to be changed in such way to have standard debt-equity ratio that will help to improve the financial health of the sample companies.

- The sample companies should try to utilize their assets efficiently, economically and proper utilization of asset will increase the Production Profitability, Liquidity and Market Value of shares.
CONCLUSION

On the basis of critical evaluation of financial performance of sample companies, it is observed that the profitability, solvency and financial health of companies such as Andhra Pradesh Paper Mills Ltd, Mysore Paper Mills Ltd, Sirpur Paper Mills Ltd and Star Paper Mills Ltd were generally not satisfactory. Higher cost of production, low demand, low productivity, low profitability and poor liquidity are the main reason for the poor financial performance of sample companies. The paper industry in India will certainly flourish and touch the new heights in future by overcoming the problems and bring back the industry into the profitable position. The Government has taken several policy measures to remove the bottlenecks of availability of raw materials and infrastructure development. To overcome the short supply of raw materials, duty on pulp, waste paper wood logs/chips has been reduced. So, the Indian Paper companies is undergoing rapid modernisation and is producing quality of paper that will create the demand for their products consistently. To sum up, the adoption of above said suggestive measures will certainly help the selected units to improve their financial performances.