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PROFITABILITY ANALYSIS: A COMPARATIVE STUDY OF SELECTED PAPER MILL COMPANIES IN INDIA

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ABSTRACT

The most important element of any business is the amount of Profitability it is making. The ability to earn profit from all the activities of an enterprise is termed as Profitability. It is an indicator of the wellbeing of an enterprise and shows how well the resources have been utilized by the management in the generation of earning in the firm. This study examines profitability of the two selected paper mill companies in India. Profitability is considered as a measure of success of a business, its survival and growth. Hence, overall profitability analysis of selected paper companies on the basis of their profitability ratio has been done to compare the success and growth of these companies. The study covers the period of 5 years, from 2012-13 to 2016-17. Companies included in the study are selected by following random sampling method. Statistical tools i.e. mean, standard deviation, co-efficient of variation, etc. have been used. T test have been worked out to find the significant difference, if any, between the companies, regarding their Profitability. The main objective of the study is to compare the profitability of selected companies during the period of study and give some worth full suggestions to the management of selected companies in India. Results show that, Gross Profit Ratio, Net Profit Ratio, Operating Profit Ratio and Return on capital employed of selected paper companies differ significantly.

Keywords: Profit, Profitability, Profitability Ratios, Paper Mills co., t-test etc.

INTRODUCTION

In the era of liberalization, privatization, and globalization, working capital management an integral part of any business situation. Businesses are nowadays managed with flexibility where the strategic aspects largely depend of the stand of competitors. In such a scenario finance manager has to blend his long-term and short-term resources in best possible combination so that firm can deal with any uncertainty in optimum manner.

Profit is the main objective of all business concerns. It is a reward or consideration of capital to entrepreneur who succeeds in keeping total cost below total revenue. Each and every business firm or unit is supposed to earn sufficient profit for its survival and growth. Profit generally refers to the excess of revenue over expenditure during a specific period. Profit is the principal motivating force behind conducting a business or without profit survival of business becomes difficult.

CONCEPT OF PROFITS

Profits is regarded as an excess of output over the input factors expressed in term of monetary value or it is the excess of income over costs. Profits are useful intermediate beacon towards which a firm's capital should be directed. "To the financial management profits are the test of efficiency and a measure of control, to the owners a measure of the worth of their investment, to the government a measure of taxable capacity and the basis of legislative action, to the country profits are an index of economic progress, national income generated and rise in the standard of living".

CONCEPT OF PROFITABILITY

Profitability may be defined as the ability of a given investment to earn a return from its use. The state of profitability is a variable thing like temperature and humidity of a day. The definition of profitability by an accountant and or analyst can even be linked to temperature reading and study of humidity by meteorologist. The present wealth of a day is recorded so that the prospects can be forecasted. Profitability has been considered, to the great extent as one of the main criteria to judge the extent to which management has been successful in maximizing its profits or minimizing it loses, if any.

The concept of profit is related to absolute figures. It does not tell about the reason scatteredness and how it takes place or the relationship of this figure with another one. The se-questions can be answered by a peep into the profitability of an entity. Profit, as an absolute term, has no relevance to compare the efficiency of the business concern. A very high profit does not always indicate a sound organizational efficiency and a low profitability not always a sign of organizational sickness. In many a situation it so happens that when a concern is implementing expansion plans. It may run into short term losses. Therefore, it can be said that profit is not the prime variable on which the operational efficiency and financial efficiency of n organization cn be compared.

The performance of a business is judged by the amount of profit earned and that's why management's main task is to maximize the profits earned by the business. According to Gole, "profitability should be the main criterion in judging the extent to which management has been successful in its task of maximizing profits or minimizing loss".[11]

REVIEW OF LITERATURE

Arun Reddy (1983) analyzed the "Profitability of Indian Paper Industry with reference to the Financial Statistics of Joint Stock Companies in India "during the period of 1950-51 to 1973-74. The major objective of the study was to examine the relationship between growth and profitability. He concluded that the paper industries exhibited a strong positive correlation between growth and profitability by using regression models and compound growth rate.

Dr. Nabi Rasool et al. (2013) in their study identified that Net profit; EPS and Return on total assets are the responsible factors which will have significant influence on ROE of the companies.

Usman Dawood (2014) in his research paper on factors influencing profitability of commercial banks believe that there no relationship between the cost efficiency and profitability but observes that capital adequacy and deposits do support in profitability where as size of the bank doesn"t help in profitability.

Bhunia and Sarkar (2011) found the few financial ratios can be used to predict the financial soundness of the paper mill firms in India.

Sheila and Karthikeyan (2012) studied Indian pharmaceutical firms in terms of profitability. They found that Cipla was the best company having strongest financial performance out of all selected companies. They also found that ROE & ROI are the most comprehensive measure for profitability of a firm.

RESEARCH GAP

However, studies have been conducted in paper industry, but very few studies have been conducted in India in this field. The present study has attempted to bridge this gap.

OBJECTIVES OF STUDY

- The present study has been carried out with the objective to examine the profitability of the paper mills. The paper manufacturing companies being a capital extensive units and not making adequate profits, hence, with the objective to find out the reason of lower profitability the present study has been carried out.

HYPOTHESIS:

Hypothesis is regarded as a pre statistical statement regarding the research assumption relating to the research. The present paper is based on the null hypothesis which states-

- **"The difference in the profitability of the Paper Mill Companies under study is not significant".**

SAMPLE DESIGN:

In the present study, the following Paper Mill Companies have been selected based on the convenient sampling

1. Ballarpur Industries
2. International Paper APPM Ltd.

RESEARCH METHODOLOGY

The present study is based on the secondary data obtained through the Annual Reports and Accounts of the Companies. The financial statements have been redrafted for the purpose of computing various ratios. To judge the profitability ratio analysis as a financial tool has been used. Statistical tools i.e. average, standard deviation and coefficient of variation have also been used. The hypothesis has been tested by using t test.

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ANALYSIS OF PROFITABILITY:

To analyses the profitability following ratios have been calculated:

1. Gross Profit Ratio
2. Net Profit Ratio
3. Operating Profit Ratio
4. Return on Capital Employed
5. Return on Equity Ratio
6. Return on Total Assets Ratio

(1)Gross Profit Ratio: The Gross Profit Ratio is also known as Gross Profit Margin and this ratio expresses the relationship of gross profit to net Revenues (cash and credit) in terms of percentage. The gross profit ratio considered most important for performance analysis. The gross profit is the result of the relationship between Revenue and further the gross profit ratio can also be used in determining the extent of loss caused by excessive cost of services rendered by the bank.. It is calculated by dividing gross profit by Revenue as follow:

$$\textbf{Gross Profit Ratio} = \frac{\textbf{Gross Profit}}{\textbf{Sales}} \times \mathbf{100}$$

A high ratio indicates good management as it implies that the cost of goods sold of the company is relatively low and it may be indicative of higher revenue without a corresponding increase in the cost of goods sold. A low ratio indicates that the profits are declining in comparison to revenue and costs are much more. Traditionally, a gross profit ratio of 25% - 30% is considered to be satisfactory. The gross profit ratio of the companies under study has been shown in the following table 1

Table 1

Gross Profit Ratio of Selected Paper Mill Companies under study

(From: 2012-13 to 2016-17)

Years	Ballarpur Industies	IP APPM
2012-13	50.21	62.45
2013-14	51.42	59.63
2014-15	45.81	59.99
2015-16	41.55	55.47
2016-17	35.07	56.40
MEAN	**44.81**	**58.79**
S.D	**5.99**	**2.54**
C.V	**0.13**	**0.04**

Source: Computed from Annual Reports and Accounts of selected companies for study.

The above table shows that the gross profit ratio of **Ballarpur Industries** showed an decreasing trend during the period of study except in the year 2013-14. It was mainly because of increasing cum decreasing trend of sales of the company which affected the gross profit of the company also. The gross profit ratio of the company during the year 2012-13 was 50.21 percent which increased to 51.42 percent in 2013-14. This ratio further decreased to 45.81 percent in 2014-15 and 41.55 percent in 2015-16 and again decreased to 35.07 percent in 2016-17. The average of the gross profit ratio for the period of study was 44.81 percent which can be regarded quite satisfactory as the higher gross profit ratio provides the safety to the company to cover the indirect expenses. The higher gross profit ratio also indicates that the management of the company controlled the cost of goods sold which shows efficiency of the management. The coefficient of variation was 0.13 percent denoting a consistent trend of the ratio which should be maintained in future also. It can be suggested that the management of the company should continue the same policy in future.

IP APPM: It can be noted from the above table that the gross profit ratio of International Paper APPM Ltd. showed an increasing cum decreasing trend throughout the period of study. It should be noted that the sales and gross profit of the company showed an increasing cum decreasing trend during the period of study. The increasing trend of the gross profit ratio denotes that the management of the company has kept the cost of goods sold under control despite decrease in the sales. The gross profit ratio of the company varied within the range of 62.45 percent in 2012-13 to 56.40 percent in 2016-17. The average of the gross profit ratio was 58.79 percent which is quite satisfactory and shows efficiency of the management to control the cost of goods sold. The coefficient of variation was 0.04 percent showing a consistent trend but this consistency should be maintained.

Test of Hypothesis:

Degree of Freedom (at 5% level): 8

Critical Value: 2.306

Calculated Value: 4.80

The Null Hypothesis is rejected because the calculated value (4.80) is more than critical value (2.306). Hence, it is concluded that the difference of gross profit ratio between companies is significant.

(2)Net Profit Ratio: Net Profit Ratio establishes relationship of net profit on sales to net sales of a firm and may be calculated as follows:

$$\textbf{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$$

Net Sales means Gross Sales (both Cash and Credit) minus Sales Returns.

The net profit ratio measures the efficiency of the management in generating additional revenue over and above the total cost of operations. The net profit ratio shows the overall efficiency in manufacturing, administrative, selling and distributing the product. This ratio also shows the net contributions made by every one rupee of sales to the owner funds. The net profit ratio indicates the proportion of sales revenue available to the owners of the firm and the extent to which the sales revenue can decrease or the cost can increase without inflicting a loss on the owners. Thus, the net profit ratio shows the firm’s capacity to face the adverse economic situations.

The net profit ratio can be meaningfully employed to study the profitability of the firm when this ratio is used together with the gross profit ratio.

In the present study to calculate net profit ratio the net profit after tax (PAT) has been used. The net profit ratio of the paper mills under study has been presented in the following table 2

Table 2

Net Profit Ratio of selected Paper Mill Companies under study

(From: 2012-13 to 2016-17)

YEARS	Ballarpur industries	Int paper APPM
2012-13	1.59	-1.93
2013-14	0.94	-3.81
2014-15	2.93	0.02
2015-16	1.2	3.18
2016-17	-76.82	2.76
MEAN	**-14.03**	**0.04**
S.D	**31.40**	**2.68**
C.V	**-2.24**	**60.95**

Source: Computed from Annual Reports and Accounts of selected companies for study.

The above table shows that the net profit ratio of **Ballarpur Industries** showed an increasing cum decreasing trend during the period of study. It was mainly because of increasing cum decreasing trend of sales of the company which affected the net profit of the company also. The gross profit ratio of the company during the year 2012-13 was 1.59 percent which decreased to 0.94 percent in 2013-14. This ratio further increased to 2.93 percent in 2014-15 but decreased to 1.20 percent in 2015-16 but in the last year it fell down to -76.82 percent in 2016-17-15 because its sales are decreasing and its gross profit is also decreasing. The average of the net profit ratio for the period of study was -14.03 percent which is not satisfactory. The coefficient of variation was -2.24 percent denoting a consistent trend of the ratio. It can be suggested that the management of the company should control indirect cost and non-operating expenses for avoid exceptionally loss.

IP APPM: It can be noted from the above table that the net profit ratio of International Papers APPM Ltd. showed an increasing cum decreasing trend throughout the period of study. It should be noted that the sales are falling and the non-operating expenses including interest are altogether rising making net profit moving downwards. The net profit ratio of the company varied within the range of 2.76 percent in 2016-17 to -1.93 percent in 2012-13. The average of the net profit ratio was 0.04 percent which cannot be regarded satisfactory and it can be suggested that to increase the net profit ratio either the management should try to increase the sales or reduce or control the indirect cost and non-operating expenses. The coefficient of variation was 60.95 percent which shows that company is experiencing a huge fluctuating trend which needs to be controlled by the management because stability is essential for the company. It can be suggested that company should control the increasing inventory by investing less in new projects and trying to make an effort to sale its existing projects. Because its depreciation cost is rising of the assets which become its fixed assets.

Test of Hypothesis:

Degree of Freedom (at 5% level): 8

Critical Value: 2.306

Calculated Value: 1.00

The Null Hypothesis is accepted because the calculated value (1.00) is less than critical value (2.306). Hence, it is concluded that the difference of net profit between companies is not significant.

(3)Operating Profit Ratio: This ratio establishes the relation between operating profit and net sales. The main objective of computing this ratio is to determine the operational efficiency of the management. This ratio is also called operating profit margin. Operating profit means the net profit arising from the normal operations and activities of the business without taking into account of extraneous transactions and expenses of purely financial nature. This ratio can be calculated by using the following formula

$$\textbf{Operating Profit Ratio=} \frac{\text{Operating Profit}}{\text{Net Sales}} \times 100$$

This ratio indicates the net profitability of the main business i.e. operating efficiency of a firm. In some businesses, the profit from main business is very low, while the profit from secondary functions such as interest on bank deposits and dividend on shares etc. is so much that the net profit of the firm at the end is enhanced. In such a case, the operating profit ratio explains that the efficiency of the firm is very low. Therefore, the higher the operating profit ratio, the better would be the operational efficiency of the business. A higher operating profit ratio means that the business has been able not only to increase its sales but also been able to cut down its operating expenses.

The operating profit ratio of the selected paper mills under study has been shown in the following table 3

Table 3

Operating Profit Ratio of selected Paper Mill Companies under study

(From: 2012-13 to 2016-17)

YEARS	**Ballarpur industries**	**Int paper APPM**
2012-13	15.88	11.38
2013-14	15.85	7.50
2014-15	17.93	12.31
2015-16	17.90	16.10
2016-17	-15.21	20.41
MEAN	**10.47**	**13.54**
S.D	**12.87**	**4.39**
C.V	**1.23**	**0.32**

Source: Computed from Annual Reports and Accounts of selected companies for study.

The above table shows that the operating profit ratio of **Ballarpur Industries** showed a increasing cum decreasing trend during the period of study. It was mainly because of decreasing trend of sales and increasing trend of operating expenses of the company which affected the operating profit of the company also. The operating profit ratio of the company during the year 2012-13 was 15.88 percent which decreased to 15.85 percent in 2013-14. This ratio increased to 17.93 percent in 2014-15 and 17.90 percent in 2015-16 but in the last year it fell down to (-)15.21 percent in 2016-17. The average of the operating profit ratio for the period of study was 10.47 percent which low satisfactory and it can be suggested that to increase the operating profit ratio either the management should try to increase the sales or reduce or control the cost of goods sold and operating expenses. However, the coefficient of variation was 1.23 percent denoting a consistent trend of the ratio which should be maintained in future also. It can be suggested that the management of the company should continue the same policy in future.

IP APPM: It can be noted from the above table that the operating profit ratio of IP APPM Ltd. showed an increasing trend throughout the period of study exempt year 2013-14. It should be noted that the sales are increased and the operating expenses showed an increasing cum decreasing trend. The operating profit ratio of the company varied within the range of 20.41 percent in 2016-17 to 11.38 percent in 2013-14. The average of the operating profit ratio was 13.54 percent which is can be regarded quite satisfactory as per the trend of paper mill industry. The coefficient of variation was 0.32 percent denoting a consistent trend of the ratio which should be maintained in future also. It can be suggested that the management of the company should continue the same policy in future.

Test of Hypothesis:

Degree of Freedom (at 5% level): 8

Critical Value: 2.306

Calculated Value: 0.50

The Null Hypothesis is accepted because the calculated value (0.50) is less than critical value (2.306). Hence, it is concluded that the difference of operating profit between companies is not significant.

(4)Return on Capital Employed Ratio: The primary objective of making investment in any business organization is to obtain sufficient return on capital invested. Therefore to measure the overall profitability of the business, it is necessary to compare profit with capital employed. With this objective, return on capital employed is calculated. It is also knows as "Return on Investment". This ratio establishes the relationship between profit and capital employed and can be calculated by dividing the net profit by capital employed. In the present study, the return on capital employed has been calculated by using the following formula-

The Return on Capital Employed Ratio in present study has been calculated by using the following formula-

$$\textbf{Return on Capital Employed} = \frac{\text{Profit before Interest \& Tax}}{\text{Capital Employed}} \times 100$$

The capital employed means total assets minus current liabilities. Since profit is the overall objective of a business enterprise, this ratio is a barometer of the overall performance of the business. It measures how efficiently the capital employed in the business is being used. It also denoted the earning power of the net assets of the business. This ratio can also be used to judge the borrowing policy of the business.

The return on capital employed of the paper mills under study has been shown in the following table 4

Table 4

Return on Capital Employed of selected Paper Mill Companies under study

(From: 2012-13 to 2016-17)

YEARS	Ballarpur industries	Int paper APPM
2012-13	1.82	-5.19
2013-14	1.20	-10.02
2014-15	2.21	0.06
2015-16	1.33	8.18
2016-17	-3.87	6.78
MEAN	**0.54**	**-0.04**
S.D	**2.23**	**6.93**
C.V	**412.96**	**-173.25**

Source: Computed from Annual Reports and Accounts of selected companies for study.

The above table shows that the return on capital employed ratio of **Bhallarpur Industries** showed a decreasing trend during the period of study exempt year 2014-15. It was mainly because of decreasing trend of net profit of the company. The return on capital employed ratio of the company during the year 2012-13 was 1.82 percent which decreased to 1.20 percent in 2013-14. This ratio further increased to 2.21 percent in 2014-15, 1.33 percent in 2015-16 and it turned into loss to -3.87 percent in 2016-17. The average of the return on capital employed ratio for the period of study was 0.54 percent which is not satisfactory and shows negative efficiency of the management and it is suggested that it should improve their profitability strength in respect of capital employed for achieving a respectable target of returns. The return on capital employed ratio shows the relationship between profit and capital employed of the company and it is essential to compare this relationship because the primary object of making investment in any business is to obtain adequate return on capital invested. The coefficient of variation was 412.96 percent denoting a very high fluctuating trend of the ratio which should be controlled in future. It can be suggested that the management of the company should improve the profitability policy to obtain an adequate return on investment.

IP APPM: It can be observed from the table that the return on capital employed ratio of IP APPM Ltd. showed an increasing cum decreasing trend throughout the period of study. It should be noted that the long term borrowings of the company showed an increasing cum decreasing trend and fixed assets of the company showed an increasing trend during the period of study. The return on capital employed ratio of the company was (-)5.19 percent in 2012-13 which decreased to (-)10.02 percent in 2013-14. This ratio further increased to 0.06 percent in 2014-15 but increased to 8.18 percent in 2015-16 and 6.78 percent in 2016-17. The average of the return on capital employed ratio was 0.04 percent which cannot be regarded satisfactory and it can be suggested it should increase the return on capital employed the management should try to increase the sales of existing projects. The coefficient of variation was(-)182.40 percent showing a denoting a high fluctuating trend of the ratio which should be controlled in future.

Test of Hypothesis:

Degree of Freedom (at 5% level): 8

Critical Value: 2.306

Calculated Value: 0.18

The Null Hypothesis is accepted because the calculated value (0.18) is less than critical value (2.306). Hence, it is concluded that the difference of return on capital employed between companies is not significant.

(5)Return on Equity Ratio: The equity shareholders are the real owners of a company. Therefore, the profitability of a company from the owners' point of view should be viewed in terms of return to equity shareholders. This ratio is calculated by dividing the profit available for equity shareholders by the equity shareholders' funds or net worth. This ratio can be calculated as follows:-

Return on Equity Shareholders' Fund=

$$\frac{\text{Net Profit after Tax - Preference Dividend}}{\text{Net Worth}} = 100$$

Net profit represents the residual profit left and available for distribution to the equity shareholders after provision has been made for all other financial obligations such as taxation, interest and preference share dividend. Net worth which is also knows as equity shareholders funds refer to equity share capital plus reserves and surplus minus accumulated losses and fictitious assets in the form of miscellaneous expenditures.

The return on equity shareholders fund is the best measure of a company's profit earning capacity. The higher the ratio, the better the performance and prospectus of the company. It provides adequate test to evaluate whether a company has earned satisfactory return for its equity shareholders or not. The Adequacy of the return can be measured by comparing it with the return of the provious year or of companies engaged in similar business or with the overall industry average. The investors can decide to invest or not to invest in the equity shares of a company by comparing it with the normal rate of return in the market.

In the present study, there was no preference share capital issued by paper mills under study. Hence, the profit after tax has been used to calculate this ratio. The return on equity shareholders fund has been calculated and presented in the following table 5.

Table 5

Return on equity of selected Paper Mill Companies under study

(From: 2012-13 to 2016-17)

YEARS	Ballarpur industries	Int paper APPM
2012-13	0.99	-2.62
2013-14	0.62	-4.54
2014-15	1.21	0.03
2015-16	0.62	4.20
2016-17	-39.02	4.53
MEAN	**-7.12**	**0.32**
S.D	**15.95**	**3.61**
C.V	**-2.24**	**11.28**

Source: Computed from Annual Reports and Accounts of selected companies for study.

The above table shows that the return on owner's equity ratio of **Ballarpur industries** showed a decreasing trend during the period of study exempt year 2014-15. It was mainly because of decreasing trend of net profit of the company but the owner's equity showed an increasing trend during the period of study. The return on owner's equity ratio of the company during the year 2012-13 was 0.99 percent which decreased to 0.62 percent in 2013-14. This ratio further increased to 1.21 percent in 2014-15, 0.62 percent in 2015-16 and (-)39.02 percent in 2016-17. The average of the return on owner's equity ratio for the period of study was (-) 7.12 percent which is not satisfactory and it can be suggested that company should control the losses. The return on owner's equity ratio shows the relationship between profit and owner's equity of the company. The coefficient of variation was (-)2.24 percent denoting a fluctuating trend of the ratio which should be controlled in future. It can be suggested that the management of the company should improve the profitability policy to obtain an adequate return on equity.

IP APPM: It can be noted from the table that the return on owner's equity ratio of **IP APPM** Ltd. showed a increasing trend throughout the period of study. It should be noted that the long term borrowings of the company showed an increasing cum decreasing trend. The return on owner's equity ratio of the company was varied from (-)2.62 percent in 2012-13 which increased to 4.53 percent in 2016-17. The average of the return on owner's equity ratio was 0.32 percent which cannot be regarded satisfactory and it can be suggested that to increase the profit for increasing the return on owner's equity ratio. The coefficient of variation was 11.28 percent showing a fluctuating trend. It is suggested that the company should try to control the variation regarding return on owner's equity ratio of the company.

Test of Hypothesis:

Degree of Freedom (at 5% level): 8

Critical Value: 2.306

Calculated Value: 1.02

The Null Hypothesis is accepted because the calculated value (1.02) is less than critical value (2.306). Hence, it is concluded that the difference of return on equity ratio between companies is not significant.

(6)Return on Total Assets Ratio: This ratio measures a relationship between net profit after tax but before interest and total assets. The purpose of calculating this ratio is to find out how efficiently the total assets have been used by the management. The return on total assets can be calculated by using the following formula

$$\textbf{Return on total Assets=} \frac{\textbf{Net Profit after Tax + Interest}}{\textbf{Total Assets}} \times 100$$

Interest on long-term borrowings is added back to profit after tax to consider the real earnings. The term total assets include all fixed and current assets but not the fictitious assets.

As this ratio reveals the profitability of total assets, hence shows how efficiently the assets are utilized by the management. Higher the ratio the more beneficial for the business.. The return on total assets of the paper mills under has been used by using the above formula and presented in the following table 6

Table 6

Return on Total Assets Ratio of selected Paper Mill Companies under study

(From: 2012-13 to 2016-17)

YEARS	Ballarpur industries	Int paper APPM
2012-13	3.60	2.62
2013-14	3.84	0.13
2014-15	3.07	3.60
2015-16	3.38	6.09
2016-17	-5.16	5.71
MEAN	**1.75**	**3.63**
S.D	**7.73**	**3.01**
C.V	**4.42**	**0.83**

Source: Computed from Annual Reports and Accounts of selected companies for study.

The above table shows that the return on total assets ratio of Ballarpur Industries showed an increasing cum decreasing trend during the period of study. It was mainly because of decreasing trend of net profit of the company but the total assets showed an increasing trend during the period of study. The return on total assets ratio of the company during the year 2012-13 was 3.60 percent which increased to 3.84 percent in 2013-14. This ratio decreased to 3.07 percent in 2014-15 but it again increased to 3.38 percent in 2015-16 and turned into loss to (-)5.16 percent in 2016-17. The net profit of Ballarpur Industries ltd. is continuously decreasing while the amount of investment in total assets is consistently increasing leaving return on total assets falling. The average of the return on total assets ratio for the period of study was 1.75 percent which is not satisfactory and it can be suggested that it should increase the profit for increasing the return on total assets. The coefficient of variation was 4.42 percent denoting a constant trend of the ratio which should be maintained in future.

IP APPM: It can be noted from the table that the return on total assets ratio of IP APPM Ltd. showed a increasing cum decreasing trend during the period of study. The return on total assets ratio of the company was varied from 2.62 percent in 2012-13 which increased to 5.71 percent in 2016-17. The net profit of IP APPM showed an increasing cum decreasing trend while its assets are rising at a rapid pace, so its return on total assets is falling. The average of the return on total assets ratio was 3.63 percent which cannot be regarded satisfactory and it can be suggested that it should increase the profit for increasing the return on total assets. The coefficient of variation was 0.83 percent showing a constant trend. It is suggested that the company should try to maintained the variation regarding return on total assets ratio of the company.

Test of Hypothesis:

Degree of Freedom (at 5% level): 8

Critical Value: 2.306

Calculated Value: 1.03

The Null Hypothesis is accepted because the calculated value (1.03) is less than critical value (2.306). Hence, it is concluded that the difference of return on total assets ratio between companies is not significant.

CONCLUSION

Profitability is the ability of a certain investment to earn a return from its use. It's a very important instrument to measure not only the business performance but also overall efficiency. The present study has appliedsix types of profitability measurement tools i.e. Gross Profit Ratio, Operating Profit Ratio, Net Profit Ratio, Return on Capital Employed, and Return on Equity and Return on Total asset Fund. Calculated ratios, further, compared for their averages using t test test has been applied to capture significant difference between companies. Findings leads us to conclude that, there is a statistically significant difference between selected paper mills for their profitability ratios except return on shareholders' fund, where, there is no significant difference has been observed between the companies. We further conclude that, size of company, its capital structure, and brand name are the factors that cause for such differences between companies.

LIMITATION OF THE STUDY

Though proper care has been taken for conducting this study, but it is generally believed that no study is complete in itself. Supporting this generality, this study also suffers with the following limitations:

1. Due to unavailability of appropriate data, the study is related to a period of 5 years only.

2. Only profitability ratio is taken for this study and some ratios could not be calculated due to unavailability of data.

SCOPE FOR FURTHER RESEARCH

As this study has under gone to examine only profitability taking few tools of profitability measurement, hence there is further scope to undertake the study examining liquidity and activity ratios.

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