Fundamental Analysis Using One Way Anova - A Study on Selected FMCG Companies in India

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Abstract

In which company to invest or purchase shares is an important question for every investor. Fundamental analysis can help such investor to select company/s to invest. In this study our focus is on FMCG sector. For analysis seven leading FMCG companies have been selected. Such companies are Britannia, Dabur, Godrej, HUL, ITC, Marico and Nestle. Different profitability ratios like Net Profit Margin, Total Assets Turnover Ratio, Operating Profit Margin, Earnings per share, Dividend per share, Dividend Pay-out ratio, Return on Capital Employed, Return on Equity have been used in this study. Du Pont 5 points analysis is being used to calculate ROE for measuring joint effect of ratios. From the study we found that Nestle, ITC and HUL are profitable sectors where investor can invest. After considering the joint effect of ratios we found that Godrej is the risky profitable concern of the selected companies. Though there is significant difference in variables of the selected companies.

Key Words: Fundamental analysis, Profitability ratios, Descriptive Statistics, One way ANOVA

JEL CODE: G32, G33, G35

Introduction

At present scenario, we are badly affected by COVID 19 CORONA VIRUS and in lockdown in our houses. The economy (world as well as Indian) is totally stopped. The share prices are falling day by day. Investors (Indian as well as foreign) thinking is it right time to purchase the shares? They are also thinking that whether to purchase shares or to save money to fight against this deadly virus. But those who are investing their fund in shares, they go for fundamental analysis. It is a holistic analysis of business. The investor who intends to invest their funds for long term (say 5 to 10 years) must understand that company or business from various perspectives. Investor notices the daily short term noise in the stock market regarding the share prices and focus on business performance. In long term the stock price of the good company must increase and it creates value to its shareholders. Therefore, fundamental analysis tries to evaluate the share prices of the company considering the economic and financial factors from balance sheets, profit & loss account, micro economic indicators and also the behaviour of the investor.

Generally, through two types of approaches fundamental analysis is

done. They are Top-Down approach and Bottom Up approach. Sometimes Top-Down approach is replaced by sequential top down approach. In these approaches first of all we have to analyse the securities markets and the economy as a whole. Next we have to analyse the industry the industry with in which the company belongs. Finally, we have to analyse the company itself.

Forecasting industry is depends upon the forecasting of economy. On the other hand, forecasting of company depends upon both the industry and economy. Therefore, we have to first analyse companies that predicts the prospects of industry and finally it strengthen the visions of the economy. Thus, fundamental analysis consists of economic analysis, industry analysis and company analysis.

Economic Analysis: Before investing in shares the investor must analyse the economy and its influences on stock prices. So it is important to measure the effect of their focus on the performance of the company where the investors wish to invest. Economic analysis is the study of economic trends. Growth rate in GDP or GNP, foreign trade, employment are the indicators of economic trends.

Industry Analysis: Industry analysis is very important for the investors because he/she must analyse the industry in which the company belongs. If the investor thinks that there is a chance of growth in the industry then he/she can invest in the company through stock market. In industry analysis the investor must analyse the economic, political and market factors that influence the industry to develop. Suppliers and buyers of the products, competitors' situation, likelihood of new market entrants are the major factors of industry analysis. These factors are divided into four categories.

(a)Beginning Stage: This is known for innovations and technological developments. Rapid increase in production and rapid increasing demand are the indicators of this stage. In this stage profit are very high and few companies operating their business.

(b)Expansion Stage: The survivors of the beginning stage are doing business in this stage. Competitor exists in this stage. In this stage growth rate of the companies is much lower than beginning stage. In this stage the price of the product as well as production are remain stable.

(c)Stabilization Stage: In this stage the growth rate of the company is stagnant. More competitors exist in the market and difficult to increase prices in this stage.

(d)Declining Stage: In this stage the sales volume of the industry decreases due to decline in sales of the company. In this stage earning profits become more challenging.

In our study we selected Fast Moving Consumer Goods (FMCG) industry for fundamental analysis. FMCG industry is the fourth largest sector of Indian economy. It contributes more to the GDP of India. Product like milk, meat, fruits, vegetable, diary, packaged foods, chocolate, candies, soft drinks, toiletries and cleaning products come under this industry. Different studies have already been made on FMCG industry in India. This study, however provides a new look on fundamental analysis in this sector.

Company Analysis: Britannia: Britannia industries Ltd. manufacturing food products in India. During 2004 to 2018 the market capitalisation of the company moved from Rs. 2400 crore to Rs. 76000 crore. In 2017-18 the net sales of the company was Rs. 9905.60 crore. The net profit of the company in the year 2017-18 was 1777.40 crore.

Dabur: Dabur India Limited is well known FMCG company in India. In 2014, first time Dabur launches India's first Ayurvedic Medical journal. In 2015 there was an agreement between Dabur and Starcom Media Vest Group (SMG). On 26th September 2017 Dabur announced its alliance with Amazon to make its product global. From 2018, Dabur manufacturing products like cosmetic, Body and health products.

Godrej: Godrej consumer product is a famous FMCG company in India. It serves consumers of India over 122 years. This group enjoy the patronage of 1.15 billion consumers globally. Now Godrej expands their products to the emerging markets of Asia, Africa and Latin America.

HUL: Hindustan Unilever Limited is the largest FMCG company in India over 80 years. Around 18000 people are working in the company. HUL is the subsidiary of Unilever, the largest supplier of food. Now HUL is selling their products in 190 countries. It has around 67% shareholding in HUL.

ITC: ITC Ltd. is another popular FMCG company in India. ITC Ltd. produces food, personal care products, education and stationery products, agarbaties, cigarettes etc. It is one of the leading marketers in FMCG. It market capitalisation is nearly US$50 billion. Gross sales value US $ 10.8 billion. 6 billion people's livelihoods are maintained by ITC.

Marico: Marico Ltd. is another India's leading consumer goods companies providing consumer products and services in the areas of health, beauty and wellness. It has emerging markets around 25 countries in Asia and Africa. In 2017, it own Flame award. In 2016, it own International business PR awards. Marico's market capitalisation is 25000 crore.

Nestle: Nestle India is consumer goods company. 8th

March, 2018 its famous product Maggi completed 35 years of business in India. It produces mill & nutrition, beverage, chocolate and confectionery items. Marico is selling products in many countries in Asia and Africa.

Literature Review:

S. Bansal, G. Singh (2017) conducted a study on Indian FMCG companies. The main objective of the study was to examine the fundamental analysis of the selected FMCG companies. In this analysis he used one way ANOVA test. He found that there is significant difference between the selected variables (Net profit margin, ROCE, EPS, DPS, Dividend pay-out ratio) of the selected companies.

A. Puwar, K. Jalan et.al.(2017) conducted a study on financial analysis of 12 pharmaceuticals Indian companies using Du Pont analysis with 3 points model and 5 points model. They have shown that the growth in ROE value of Torrent Pharmaceuticals was tremendous even though the Sun Pharma, the leading company in India having highest assets making , losses for its investors.

H. Desai made a study on earning per share in FMCG sector of India. For his study he collected earning per share ratio of 14 FMCG companies for a period of 10 years (2005 to 2014) from the annual reports. After that the researcher used Mann-Kendall trend detection test to find out the trend. The researcher found no such trend in this analysis.

In 2017 S.M.I. Haque and A. Afzal conducted a study on two FMCG companies. The study period of the study was 2011-12 to 2015-16. The objective of the study was to evaluate the financial performance of the selected companies. The results of the study were i) sound return for shareholders, ii) satisfactory liquidity position, iii) firms were not in trading on equity and iv) liquidity and profitability are positively associated with sales.

Khamrui (2012) made a study of two popular FMCG companies – ITC and HUL. In this study he computed different profitability ratios and made a comparison between them considering ROI as the dependent variable. The study revealed that both profitability and liquidity have significant impact on profitability.

Joshi (2013) conducted the study on three major FMCG companies – HUL, Colgate Palmolive & ITC- Agro Tech Foods. In this study he focused on various profitability ratios like Net operating profit, net profit margin, PAT to net worth, cash profit to net profit etc. He used mean and ANOVA test. He concluded that there have been vast differences among the selected ratios.

Research Gap: After prolong study of literature on financial performance analysis of companies it is clear that there are different angles of the evaluation of financial performances. In those studies so many relationships were established considering the FMCG sectors. But analysing the financial performance / profitability with the help of Du Pont analysis was not done yet in FMCG sector. Therefore, to cover the gap in earlier studies, the present work is considered to provide an insight into the fundamental analysis of selected FMCG companies. In the present study we used the Du Pont model in deeper sense by divided ROE into 3 points analysis and 5 points analysis also used one way ANOVA test. Apart from this test homogeneity, robustness of the data has also been tested. In between difference among the variables, Post Hoc Tukey HSD test has been done. And I think it will strengthen the fundamental analysis approach in future.

Research Methodology:

Research Statement: Fundamental analysis using one way ANOVA – A study on selected FMCG companies in India.

Hypothesis of the study:

H0-Null Hypothesis- There is no significant difference between the variables (ratios) of the selected FMCG companies. Symbolically we can write $\mu1 = \mu2 = \mu3 = \mu4 = \mu5 = \mu6 = \mu7 = \mu8$

H1-Alternative Hypothesis- There is significant difference between the variables (ratios) of the selected FMCG companies. Symbolically we can write $\mu1 \neq \mu2 \neq \mu3 \neq \mu4 \neq \mu5 \neq \mu6 \neq \mu7 \neq \mu8$

About the research problem: The present study focuses on the profitability analysis of selected Indian companies in FMCG sector for a period of 15 years from 2004 to 2018. One of the important factors affecting the functioning of the company is the size of the unit. I have tried to use Du Pont model to analyse profitability of the selected FMCG companies. In this study my focus is on difference in profitability variables of the selected companies. For this reason One way ANOVA test has been done.

Research Design: The present study titled "Fundamental analysis using one way ANOVA – A study on selected FMCG companies in India" is an analytical, conclusion oriented and hypothesis testing type of research study. In this study we used different ratios like total assets turnover ratio (i.e. net sales / total assets). The efficiency of the business can be measured with the help of this ratio. To measure the solvency position of the business i.e. the capability of the company to meet its long term debts, we used interest coverage ratio (EBIT / Interest Expense) and equity multiplier (total assets / total debt). Finally, to

measure the profitability of the company i.e. the company's ability to generate revenue / earnings as compared to the expenses of the company, we used net profit margin (net profit / net sales), Return on equity (net income / average shareholders fund) and operating profit margin (EBIT / net sales). Other profitability ratios like earnings per share, dividend per share, dividend pay-out ratio and return on capital employed of the selected companies has been considered for fundamental analysis.

Du Pont analysis: In our study we used Du Pont 5 points model to calculate ROE of the selected companies. ROE has been computed by multiplying 5 ratios with each other to get a composite ratio. Such ratios are Total assets turnover ratio, Equity multiplier, Operating profit margin, Tax retention rate and Interest expense rate. The joint effect of five ratios can nullify the effect of one or two ratios and help investors to take appropriate decision.

Objectives of the Study: The Objectives of the present study are as follows;

i) To analyse the profitability of the selected FMCG companies of India by comparing different profitability ratios.

ii) To analyse whether there is any difference between the variables (ratios) of the selected FMCG companies.

Nature and source of data: The present study is based on the secondary data and such data have been collected from Capitaline data base from the University of Burdwan. Other information have been collected from annul reports of the company and also from internet as per requirement.

Period of the study: The present study covers a period of 15 years from 2003-04 to 2017-18.

Sample Design: In the present study I used purposive sample technique to select the leading FMCG companies from the FMCG industry.

Population: The population consisted popular FMCG companies in India.

Sampling units and sample size: For the present study 7 FMCG companies have been selected as the sampling units. These companies are listed in the BSE and NSE or both in India. Out of many companies only the top seven companies have been selected in this study. Then all units of population are classified on the basis of size of the company.

Tools and Techniques: In the present study we used Ratio analysis and different techniques of average (mean), standard deviation. For testing the difference between variables Descriptive statistics and one way ANOVA test have been used. For homogeneity and robustness of the variables we used Levene Statistics, Welch and Brown Forsythe test respectively. In this analysis mean chart has been used.

Findings of the Study:

Net Profit Margin (NPM): It is the ratio of Net Profit after tax and Net sales. It portrays that how much the company earned from its net sales. Higher net profit margin indicates the efficiency of management in transforming sales into profit. In Table- 1 Net profit margin of 7 FMCG companies has been computed. From the table it is clear that ITC (23.67 cr.) registered the highest mean net profit margin (NPM) among the selected companies under study. It depicts the good sign from the management of the company and helps the company to maximise its shareholders' profit. The variation of NPM is also minimum in case of Nestle than other companies. The alarming fact is that Britannia (5.87 cr.) registered the lowest mean net profit margin among the selected companies.

TABLE – 1 Descriptive Statistics

NPM

Companies	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BRITANNIA	15	5.8750	1.75927	.45424	4.9007	6.8492	3.07	9.38
DABUR	15	12.7768	3.05594	.78904	11.0845	14.4691	5.63	16.02
GODREJ	15	14.8506	2.55537	.65979	13.4354	16.2657	9.03	19.46
HUL	15	13.0675	2.07361	.53540	11.9191	14.2158	10.64	17.68
ITC	15	23.6741	1.47913	.38191	22.8550	24.4932	20.82	25.88
MARICO	15	10.2051	2.60594	.67285	8.7620	11.6482	6.90	15.46
NESTLE	15	11.9534	.97148	.25083	11.4154	12.4914	9.60	13.18
Total	105	13.2003	5.47434	.53424	12.1409	14.2598	3.07	25.88

For testing whether there is any difference between the selected variables of the selected companies, we conducted one way ANOVA test. From the ANOVA table it is clear that in case of NPM the F value is 93.236 with its P-value is 0.00 which is less than 0.05. Therefore, we can say that the difference in the mean values of NPM of the selected FMCG companies is statistically significant.

ANOVA

NPM

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2652.108	6	442.018	93.236	.000
Within Groups	464.605	98	4.741		
Total	3116.713	104			

However it is not clear that which of the various pairs of means of NPM of the selected companies, the difference is significant. For this reason we made Post Hoc Tukey HSD test. If we look at the multiple comparisons table, we can see that significance values have been generated for the mean differences of NPM between pairs of values of the selected companies. The Tukey HSD (Honest Significant Difference) portrays that except Dabur & Godrej group (P=0.135), Dabur & HUL group (P=1.00), Dabur & Nestle group (P=0.944), Godrej & HUL group (P=0.283), HUL & Nestle group (P=0.800) and Marico & Nestle group (P=0.306), all other groups are statistically significant. The P value in those cases is more than 0.05.

Total Assets Turnover Ratio (TATR): Total assets turnover ratio is the ratio between Total assets and Net sales of the company. It indicates the efficiency of the company to convert their assets into sales. Higher total assets turnover ratio signifies that the company is more efficient in converting their assets into sales. Contrary, lower assets turnover ratio indicates the inefficiency of the company in managing their assets properly. In Table- 2 Total assets turnover ratio of 7 selected FMCG companies has been computed. From the table it is clear that Nestle (5.986 cr.) depicted the highest mean assets turnover ratio among the selected companies. On the other hand, ITC registered the lowest mean assets turnover ratio. In case of Godrej (4.129 cr.) more variation in assets turnover ratio is observed and in case of ITC (0.148) the variation is lowest.

TABLE – 2 Descriptive Statistics of TATR

TATR

Companies	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BRITANNIA	15	4.4627	1.37056	.35388	3.7037	5.2217	2.56	7.32
DABUR	15	2.9200	.75220	.19422	2.5034	3.3366	2.00	4.53
GODREJ	15	4.7760	4.12935	1.06619	2.4892	7.0628	1.29	13.74
HUL	15	5.6627	1.81764	.46931	4.6561	6.6692	2.93	8.62
ITC	15	1.9200	.14900	.03847	1.8375	2.0025	1.62	2.17
MARICO	15	2.7273	.95722	.24715	2.1972	3.2574	1.41	4.38
NESTLE	15	5.9860	2.89517	.74753	4.3827	7.5893	1.95	10.00
Total	105	4.0650	2.53589	.24748	3.5742	4.5557	1.29	13.74

From ANOVA table we can say that in case of FATR, F value is 7.95 with its P value is 0.00. The P value is less than 0.05. Hence the difference in the mean values of FATR of the selected FMCG companies is statistically significant.

ANOVA

TATR

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	219.118	6	36.520	7.959	.000
Within Groups	449.680	98	4.589		
Total	668.798	104			

From Post Hoc Tukey HSD test of multiple comparisons of FATR depicts that except Britannia and Dabur group (P=0.439), Britannia and Godrej group (P=1.00), Britannia and HUL group (P=0.724), Britannia & Marico group (P=0.295), Britannia & Nestle group (P=0.455), Dabur and Godrej group (P=0.221), Dabur and ITC group (P=0.860), Dabur and Marico group (P=1.00), Godrej and HUL group (P0.916), Godrej and Marico group (P=0.132), Godrej & Nestle group (P= 0.716), HUL and Nestle group (P=1.00), ITC & Marico group (P=0.945), all other groups are statistically significant. The p value of such groups is less than 0.05.

Operating Profit Margin (OPM):Operating Profit Margin is the ratio between earnings before interest & tax and net sales. In Table- 3 such ratio of the selected companies has been computed. Operating profit margin is a better meaningful parameter to judge the company's earning ability to pay off its actual expenses because in it interest and tax deductions are included. From table it is clear that the mean operating profit margin of ITC (39.08 cr.) is highest and of Britannia (11.407 cr.) it is lowest. The variation of operating profit margin of Godrej, HUL and Nestle is similar. Due to higher interest charges the operating profit margin of Britannia is lowest. Hence importance should be given towards the improvement of their revenue as compare to their expenditure, otherwise the company making loss in future.

TABLE – 3 Descriptive Statistics of OPM

OPM

Companies	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BRITANNIA	15	11.4080	4.59235	1.18574	8.8648	13.9511	4.89	21.28
DABUR	15	17.6886	3.41510	.88178	15.7974	19.5798	11.17	22.53
GODREJ	15	20.7850	2.85008	.73589	19.2067	22.3634	16.69	26.91
HUL	15	18.8785	2.45613	.63417	17.5184	20.2387	15.94	23.46
ITC	15	39.0834	2.90517	.75011	37.4745	40.6922	34.73	44.65
MARICO	15	14.8999	3.91508	1.01087	12.7319	17.0680	9.06	21.56
NESTLE	15	19.9340	2.06313	.53270	18.7915	21.0765	14.24	22.46
Total	105	20.3825	8.82639	.86137	18.6744	22.0906	4.89	44.65

From ANOVA table it is clear that the F value of OPM is 109.813 whereas P value is 0.00 (less than 0.05). It signifies that the difference in mean value of OPM of the selected companies is statistically significant.

ANOVA

OPM

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7053.080	6	1175.513	109.813	.000
Within Groups	1049.055	98	10.705		
Total	8102.135	104			

From Post Hoc Tukey HSD test of multiple comparisons of OPM depicts that except Britannia & Marico group (P=0.063), Dabur & Godrej group (P=0.140), Dabur & HUL group (P=0.954), Dabur & Marico (P=0.239), Dabur & Nestle (P= 0.499), Godrej & HUL (P=0.685), Godrej & Nestle group (P=0.992), HUL & Nestle group (P=0.974), all other groups are statistically significant. The P value of such groups is less than 0.05.

Earnings Per Shares (EPS): Earnings per share is the ratio between Net Income and No. of equity shares. Through EPS we judge the profitability of the company. The company having higher EPS signifies that the earning capability of the company is good. On the other hand lower EPS portrays the less earning capability of the company. In Table- 4 EPS of the selected companies has been computed. Table- 4 shows that the mean EPS of Nestle (55.164 cr.) is highest and the same in case of Marico (1.978 cr.) is lowest. The variation in mean in case of Nestle is maximum and the same in case of Dabur is minimum of the selected companies in the study. Therefore, importance should be given towards the improvement of EPS of Marico, Dabur, ITC and HUL. Instead of using equity capital debt capital can be used to increase EPS.

TABLE – 4 Descriptive Statistics of EPS

EPS

Companies	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BRITANNIA	15	18.7607	15.12974	3.90648	10.3821	27.1392	7.41	58.35
DABUR	15	2.0780	1.37266	.35442	1.3178	2.8382	.37	4.88
GODREJ	15	9.1140	6.50859	1.68051	5.5097	12.7183	1.70	20.55
HUL	15	9.8540	4.01899	1.03770	7.6284	12.0796	4.78	17.01
ITC	15	3.5253	2.18213	.56342	2.3169	4.7338	1.08	7.14
MARICO	15	1.9780	1.57753	.40732	1.1044	2.8516	.41	4.93
NESTLE	15	55.1640	34.30745	8.85814	36.1652	74.1628	16.53	111.55
Total	105	14.3534	22.56091	2.20172	9.9873	18.7195	.37	111.55

From ANOVA table it is clear that the F value of EPS is 25.577 whereas the P value is 0.00 (less than 0.05). Thus it signifies that the difference in mean value of EPS of the selected companies is statistically significant.

ANOVA

EPS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	32305.620	6	5384.270	25.577	.000
Within Groups	20629.820	98	210.508		
Total	52935.439	104			

The Post Hoc Tukey HSD test of multiple comparisons of EPS suggests that in most of the groups are statistically insignificant. The groups like Britannia & Dabur, Britannia & Marico, Britannia & Nestle, Dabur & Nestle, Godrej & Nestle, HUL & Nestle and Marico & Nestle are statistically significant because their P value is less than 0.05.

Dividend Per Share (DPS):In Table- 5, Dividend per share of the selected companies has been shown. Dividend per share is the ratio between total dividend paid to equity shareholders / total no of equity shares. It also measures the profitability of the company. Higher the ratio better is the position of the company. Higher DPS increases the goodwill of the company. Shareholders evaluate this ratio at the time of investment in the company. From Table- 5 it is clear that Nestle (37.1 cr.) registered the highest mean DPS and Marico (1.014) showed the lowest mean DPS among the selected companies. The variation in DPS is maximum in case of Nestle and the same is minimum in case of Dabur. Hence the management of Marico, Dabur, Godrej etc. must take some preventive steps to improve DPS.

TABLE – 5 Descriptive Statistics of DPS

DPS

Companies	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BRITANNIA	15	15.1333	8.55125	2.20792	10.3978	19.8689	6.50	40.00
DABUR	15	1.7233	.52944	.13670	1.4301	2.0165	.50	2.50
GODREJ	15	2.8667	2.47102	.63802	1.4983	4.2351	.00	5.75
HUL	15	8.7667	4.54292	1.17298	6.2509	11.2825	5.00	18.50
ITC	15	9.1600	7.87022	2.03208	4.8016	13.5184	2.65	31.00
MARICO	15	1.0147	1.32955	.34329	.2784	1.7509	.00	4.25
NESTLE	15	37.1000	14.94538	3.85888	28.8235	45.3765	14.00	63.00
Total	105	10.8235	13.79679	1.34643	8.1535	13.4935	.00	63.00

From ANOVA table it is clear that the F value of DPS is 43.312 and its P value is 0.00 (less than 0.05). Thus the difference in mean value of DPS of the selected companies is statistically significant.

ANOVA

DPS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14375.465	6	2395.911	43.312	.000
Within Groups	5421.088	98	55.317		
Total	19796.554	104			

From Post Hoc Tukey HSD test of multiple comparisons of DPS depicts that except Britannia & HUL group (P=0.234), Britannia & ITC group (P=0.305), Dabur & Godrej group (P=1.00), Dabur & HUL group (P=0.139), Dabur & ITC group (P= 0.10), Dabur & Marico group (P=1.00), Godrej & HUL group (P= 0.320), Godrej & ITC group (P=0.246), Godrej & Marico group (P= 0.993), HUL & ITC group (P= 1.00), HUL & Marico group (P= 0.075), ITC & Marico group (P= 0.052), all other groups are statistically significant. The P value of such group is less than 0.05.

Dividend Pay-out Ratio (DPR): Dividend pay-out ratio is the ratio of dividend per share and earnings per share. It measures the percentage of net income distributed to the shareholders in the form of dividends. Higher the ratio better is the return to the shareholders of the company and vice-versa. In Table- 6 DPR of the selected companies has been computed. From the table it is clear that HUL (88.72 cr.) showed the highest mean DPR and Marico (32.63 cr.) registered the lowest mean DPR. The variation in DPR in

case of Dabur is minimum whereas the same in case of HUL is maximum among the selected companies in study. Marico and Britannia must take initiative to improve their DPR in the future.

TABLE - 6 **Descriptive Statistics of DPR**

DPR

Companies	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BRITANNIA	15	37.0107	15.75820	4.06875	28.2841	45.7373	9.91	59.63
DABUR	15	47.7440	8.62650	2.22735	42.9668	52.5212	22.45	60.99
GODREJ	15	58.6307	23.88412	6.16685	45.4041	71.8573	27.05	89.00
HUL	15	88.7187	21.16882	5.46577	76.9958	100.4416	66.75	127.35
ITC	15	54.9333	22.50228	5.81006	42.4720	67.3947	28.00	111.00
MARICO	15	32.6300	16.05744	4.14601	23.7377	41.5223	7.61	68.42
NESTLE	15	77.0527	19.25500	4.97162	66.3896	87.7157	45.06	107.07
Total	105	56.6743	26.32459	2.56902	51.5798	61.7687	7.61	127.35

ANOVA table shows that the F value of DPR is 17.622 whereas P value is 0.00 (less than 0.05). Thus the difference in mean value of DPR of the selected companies is statistically significant.

ANOVA

DPR

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	37402.720	6	6233.787	17.622	.000
Within Groups	34667.595	98	353.751		
Total	72070.315	104			

The post Hoc Tukey HSD test of multiple comparisons of DPR shows that except Britannia & Dabur group (P=0.706), Britannia & ITC group (P=0.134), Britannia & Marico group (P=0.995), Dabur & Godrej group (P=0.692), Dabur & ITC group (P= 0.942), Dabur & Marico group (P=0.305), Godrej & ITC group (P=0.998), Godrej & Nestle group (P=0.114), HUL & Nestle group (P= 0.619), all other groups are statistically significant. The P value of such groups is less than 0.05.

Return on Capital Employed (ROCE): In Table- 7 ROCE of the selected companies has been computed. ROCE is calculated by EBIT by Capital employed and multiply 100. This ratio indicates how efficiently the company manage the long term funds. Higher the ratio better is the management of the company to use long term funds and vice-versa. It is another indicator of profitability of the concern. From the table it is clear that the mean ROCE of Nestle (102.03 cr.) is highest and the same in case of Marico (33.195 cr.) of the selected companies is lowest. The variation in ROCE is minimum in case of ITC whereas the same in case of Godrej is maximum. For improvement of ROCE importance should be given to Marico, Britannia and Dabur.

TABLE - 7 Descriptive Statistics of ROCE

ROCE

Companies	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BRITANNIA	15	37.2973	17.44338	4.50386	27.6375	46.9572	19.81	75.91
DABUR	15	47.2013	17.31204	4.46995	37.6142	56.7884	17.60	80.43
GODREJ	15	78.9620	61.24469	15.81331	45.0458	112.8782	22.23	198.12
HUL	15	88.5087	26.26986	6.78285	73.9609	103.0564	43.62	121.52
ITC	15	43.9780	5.52276	1.42597	40.9196	47.0364	37.38	52.14
MARICO	15	33.1953	4.84826	1.25182	30.5105	35.8802	26.52	41.22
NESTLE	15	102.0340	50.93828	13.15221	73.8253	130.2427	30.52	174.16
Total	105	61.5967	41.17830	4.01859	53.6277	69.5657	17.60	198.12

The ANOVA table depicts that the F value of ROCE is 10.408 and P value is 0.00 (less than 0.05). Hence there is difference in mean value of ROCE of the selected companies and such differences are statistically significant.

ANOVA

ROCE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	68635.873	6	11439.312	10.408	.000
Within Groups	107711.941	98	1099.101		
Total	176347.814	104			

From the Post Hoc Tukey HSD test of multiple comparisons of ROCE depicts that except Britannia & Dabur group (P=0.983), Britannia & ITC group (P=0.998), Britannia & Marico group (P=0.983)(P=1.00), Dabur & Marico group (P=0.908), Godrej & HUL group (P=0.986), Godrej & ITC group (P=0.069), Godrej & Nestle group (P=0.481), HUL & Nestle group (P=0.921), ITC & Marico group (P=0.973), all other groups are statistically significant. The P value of such groups is less than 0.05.

Return on Equity (ROE):Return on equity is nothing but the earnings, the shareholders are getting from company by investing their money. Previously, we emphasised on ROA. ROA can be calculated in the following way. ROA= Net Income/Sales*Sales/ Total Assets= Net Income/Total Assets.

In this case both profitability and efficiency of the organisation are impacted. In Du Pont model the first shifts from ROA to ROE was made. ROE is one of the powerful indicators of profitability. In this study we used Du Pont 5 points model. For computing ROE we straight forward multiply equity multiplier (i.e. Total assets/Total equity or Financial leverage), Total assets turnover ratio, Operating profit margin, Tax retention rate (i.e. Subtracting tax rate from 1) and Interest expense rate (i.e. EBIT*TART/ Interest coverage ratio). From table it is clear that Godrej (728.89 cr.) scored the highest mean ROE and ITC (54.73 cr.) registered lowest ROE. The variation in ROE in case of Dabur is minimum whereas the same in case of Godrej is highest. The result of ROE is different from other profitability ratios discussed earlier may be due to incorporation of various aforesaid factors.

TABLE - 8 Descriptive Statistics of ROE

ROE

Companies	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
BRITANNIA	15	127.9159	163.53704	42.22508	37.3521	218.4797	5.22	632.90
DABUR	15	93.8247	57.81191	14.92697	61.8095	125.8398	15.08	203.50
GODREJ	15	728.8961	1099.04557	283.77235	120.2650	1337.5273	14.84	4151.74
HUL	15	88.1429	90.15103	23.27690	38.2189	138.0668	.52	302.04
ITC	15	54.7332	59.82942	15.44789	21.6008	87.8657	8.09	249.11
MARICO	15	139.0517	140.94367	36.39150	60.9997	217.1037	17.99	471.20
NESTLE	15	60.4079	70.90162	18.30672	21.1439	99.6719	1.94	278.37
Total	105	184.7103	471.44317	46.00814	93.4745	275.9462	.52	4151.74

From ANOVA table it is clear that the F value of ROE is 4.824 and P value is 0.00 (less than 0.05). It signifies that the difference in mean value of ROE of the selected companies is statistically significant.

ANOVA

ROE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5270687.090	6	878447.848	4.824	.000
Within Groups	17844213.486	98	182083.811		
Total	23114900.576	104			

From the Post Hoc Tukey HSD test of multiple comparisons of ROE we can conclude that the most of the groups except Britannia & Godrej group (P=0.004), Dabur & Godrej group (P=0.002), Godrej & HUL group (P=0.002), Godrej & ITC group (P=0.001), Godrej & Marico group (P=0.005), Godrej & Nestle group (P=0.001) are statistically insignificant. The P value of such groups is more than 0.05.

The homogeneity of variances of the designated variables of the selected companies, the Levene Statistic is less than 0.05. Therefore, the requirement of homogeneity of variances has been met. The Welch test of equality of means (robustness) of the used variables (except in case ROE of the selected companies due to conglomeration of different factors in calculation of ROE using Du Pont model) is statistically significant (P value less than 0.05) and also Brown Forsythe test of equality of means (P value is less than 0.05) of the selected variables of the companies is statistically significant ('F' is asymptotically distributed).

Conclusion: From the above discussion and ANOVA tables it is found that the null hypothesis i.e. H0 is rejected and H1 i.e. alternative hypothesis is accepted. $\mu 1 \neq \mu 2 \neq \mu 3 \neq \mu 4 \neq \mu 5 \neq \mu 6 \neq \mu 7 \neq \mu 8$. There are differences in mean values of the selected variables of the companies under study.

But in many cases the in between differences of different ratios are statistically insignificant. As in most of the cases the differences persist so we can conclude that there is significant difference between the selected ratios of the companies under study.

From the above discussion we can see that in case of Net profit margin ITC scored highest and Britannia is the lowest among the selected companies in the study. The mean total assets turnover ratio of Nestle is highest and the same in case of ITC is lowest. ITC has highest mean operating profit margin and Britannia has lowest mean operating margin. Nestle has highest mean earning per share and DPS whereas Marico has also lowest mean EPS, DPS, DPR and ROCE. HUL registered highest mean DPR. The ROCE of Nestle is highest among the seven 7 FMCG

companies in the study. In case of ROE using Du Pont 5 points model Godrej registered the highest and ITC registered the lowest mean ROE. From ROE point of view Godrej is the risky company among the selected companies. Investors are getting much interested to invest in Godrej at a low interest rate. Godrej confirmed the profitability of the investors. Though, investors can choose Nestle, ITC and HUL to invest their funds in future.

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