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IMPACT OF CAPITAL STRUCTURE AND TURNOVER RATIOS ON SHAREHOLDERS' RETURN: A STUDY OF PHARMACEUTICAL INDUSTRY IN INDIA

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Abstract: The study investigated the relationship of capital structure and turnover ratios on shareholders' returns of National Stock Exchange listed pharmaceutical firms in India during the sixteen year period from 1999 to 2014. Previous studies showed that there is a positive, negative or no relationship of capital structure and turnover on profitability. The present study used return on assets and return on equity as the measures of shareholders' returns. The results revealed that, pharmaceutical companies have higher return on equity and more stable ROA, and the capital structure as well as turnover ratios influence shareholders' returns in a better way when it is measured as return on asset compared to return on equity. The study finds that there is negative impact of LTD to Equity on shareholders' return. Debt equity ratio is said to have significant and negative impact on return on asset and insignificant and positive impact on return on equity. The study reveals that there is found to be insignificant and positive impact of LTD to total assets on shareholders' returns. Moreover, significant and negative impact of DAR on shareholders' returns is observed. There is negative and insignificant influence of total assets turnover ratio, and growth rate of total assets is positively and significantly influenced both ROA and ROE. However, the positive impact of SIZE is insignificant with ROA and with ROE. The study also finds that there is insignificant and negative impact of inventory turnover ratio on shareholders' returns. Receivables turnover ratio is negatively and insignificantly related to ROA and is positively and significantly related to ROE. Total assets turnover ratio has positive and significant impact on shareholders' returns. There is positive impact of working capital turnover ratio on shareholders' returns, but it is insignificant.

Key words : Pharmaceuticals, Capital structure, Linear multiple regression, Shareholders' returns, Turnover ratios.

Introduction

Capital structure decision is the choice by a firm of the mixture of sources of debt financing and equity financing. In the words of Ross, Westerfield, & Jordan (2001), a firm's capital structure decision is 'the choice of how much debt a firm should have relative to equity'. They argued that capital structure reflects a firm's borrowing policy. It refers to the mix of long term debt and equity financing (Brealey, Myers, & Marcus, 2009). Abor (2005) defined capital structure as a 'mix of different securities'. The above definitions agree that the firm's capital structure decision is its choice of debt-equity ratio. The main crust of capital structure decisions is the search for the optimal capital structure which is the level of capital that maximizes profitability and shareholders' value. The search for the optimal capital structure has led to theories like the trade-off, pecking order and agency theories. Ross et al (2009) supported the idea that, 'Managers should choose the capital structure that they believe will have the highest firm value, because this capital structure will be most beneficial to the firm's

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shareholders'. The goal of financial decisions is to 'maximize the market value of existing owners' equity' (Ross, Westerfield, & Jordan, 2001). To date, there is still no consensus on what the optimal capital structure should be.

According to static trade-off theory, an optimal capital structure exists for firm by maintaining a balance between benefits (interest tax shields) and the cost of financial distress (bankruptcy and agency costs) of debts. Using this optimal capital structure, the value of the firm could be increased due to its lowest cost of capital. Since all firms' managers try to get the optimal capital structure with least possible cost, this led to the emergence of the pecking order theory by Myers and Majluf (1984). Pecking order theory assumes that there is no an optimal capital structure for a firm. The theory suggests that firms will initially rely on internally generated funds, and then they will turn to debt if additional funds are needed and finally they will issue equity to cover the remaining. Thus, static trade-off theory assumes a positive relationship between capital structure and firm performance while pecking order theory claims a negative relationship between them.

Jensen and Meckling (1976) had developed agency theory where agency costs are defined as the sum of the monitoring expenditures by the principal, bonding costs by the agent, and a residual loss. They pointed out that the conflict of interest may generate agency cost. Conflict between managers and shareholders arises when managers take the action in their own interest at the expense of shareholders. They argue that managers use the free cash flow available to fulfill their personal interest instead of investing in positive Net Present Value projects that would benefit the shareholders. In order to mitigate this agency conflict, Grossman and Hart (1982) argue that high leverage encourages manager to act in the interest of equity holders and hence reduce agency cost and, debt can be used as a disciplinary device to control manager from wastage of firm's resources. This position is agreed by Harris and Raviv (1991); Graham and Harvey (2001). Since Jensen and Meckling's argument regarding capital structure has influence on firm performance, several researchers have followed this extension and have conducted studies aimed at examining the relationship between capital structure and firm performance. Thus, higher leverage is expected to lower the agency costs, reduce the inefficiency and thereby lead to improvement in firm's performance.

Several empirical studies indicate a negative relationship between capital structure and performance (Rajan and Zingales, 1995; Booth et al., 2001; Deesomsak et al. 2004; Huang and Song, 2006; Narendar, et. al. 2007; Karadeniz et al., 2009; Chakraborty, 2010) while several scholars report a positive relationship between financing choices and firm performance (Grossman and Hart,1982; Harris and Raviv, 1991; Champion, 1999; Gosh et al., 2000; Graham and Harvey, 2001; Hadlock and James, 2002; Frank and Goyal, 2003; Berger and Bonaccors di Patti, 2006; Kyereboah-Coleman, 2007; King and Santor, 2008; Chowdhury and Chowdhury, 2010; Omorogie and Erah, 2010; Aman, 2011). A number of studies find either poor or no significant relation between debt level and performance (Tang and Jang, 2007; Ebaid, 2009).

With these mixed and conflicting results, the quest for examining the relationship between capital structure and firm performance has remained a puzzle and empirical study continues. Similarly, the impact of turnover ratios on shareholders returns did not receive considerable attention so far. Nweze (2011) opines that debtor's ratio consists of debtors' turnover and the collection period. The debtor's turnover gives the number of times debts are collected during the years. The higher the debtor's turnover, the better the company is collecting quickly from

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customers. These funds can then be invested for a return. The drop in the debtor's turnover ratio indicates a serious problem in collecting the amount from customers. Therefore, a careful analysis of the company's credit policy is required. Okwuosa (2005) adds that the total asset turnover indicates the efficiency of the enterprise in utilizing the total assets to generate income. The more the number of times total assets turnover, the more efficient the enterprises will be in the utilization of assets to generate income. Osisioma (2000) states that this ratio measures the efficiency of the use of the capital invested in the assets by relating the value of sales to the total assets employed in the business. The ratio is measure of the efficiency of the use of capital, since the total assets include plant and other fixed assets as well as current assets. It helps management to determine whether the sales volume is sufficient relative to the capital commitment in the business.

Since today, it is widely accepted that the primary role of managers is to maximize the wealth of shareholders using the efficient allocation of resources and therefore, it is very important to explore the relationship between the capital structure and shareholders returns, and turnover ratios and shareholders returns in Indian context.

1. **Significance Of The Study:**

Finance literature has recorded that the capital structure impacts shareholders' return. Operating cycle of a business has an impact on the profitability of the business. Turnover ratios determine the number of times the operating cycle repeats in a financial year. Higher the turnover ratios lower the operating cycle time. Therefore, higher turnover ratios will have positive impact on shareholders' return. This study deals with the influence of capital structure ratios and turnover ratios on shareholders returns.

2. **Objectives Of The Study**

The main objective of this study is to explore the impact of capital structure and turnover ratios on shareholders returns of selected companies in India. The specific objectives of the study are as follows:

- To study the impact of capital structure ratios on shareholders returns.
- To analyse the impact of turnover ratios on shareholders returns.
- To determine the effect of control variables on shareholders returns.

3. **Methodology**

4.1 Sample and Data

The study is conducted on 18 pharmaceutical companies in India which are the constituents of CNX 200 index. The pharmaceutical companies included in the study are with more than 10 years of financial data. The required financial data is sourced from Prowess database (Version 4), the most reliable corporate database of Centre for Monitoring Indian Economy (CMIE) for a period of 16 years from 1999 to 2014. The companies under study are given in Appendix 1.

4.2 Tools Of Analysis

For the purpose of analyzing the financial variables of automobile industry, statistical and mathematical tools like arithmetic mean, standard deviation/SD, and coefficient of variation/CV have been used. Ordinary Least Square (OLS) multiple regression analysis is used in the study to investigate the impact of capital structure ratios and turnover ratios on shareholders' returns. For running the regression SPSS (17-version) is used. SPSS regression output provides Durbin-Watson (D-W) statistic and Variance Inflation Factor (VIF). Durbin–Watson (D-W) statistic is used to detect the presence of autocorrelation in the residuals from a regression analysis. As a rough rule of thumb, if D-W is less than 1.0, there may be cause for alarm. Small values of D-W indicate successive error terms are, on average, close in value to one another, or positively correlated. If D-W is greater than 2 successive error terms are, on average, much different in value to one

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another, i.e., negatively correlated. If D-W is between 1 and 2, we have considered that there is no auto correlation. There may be the presence of multi-collinearity among independent variables when more than two independent variables are used in the regression. Variance Inflation Factors (VIF) values are used in the study to detect the presence of multi-collinearity. If VIF is less than 10 (rule of thumb), it is considered that there is no presence of multi-collinearity.

4.3 Hypotheses of The Study

Capital structure ratios indicate the relative proportion of equity and debt used to finance a company's assets. Debt financing can be used as a monitoring mechanism. Similarly, due to its advantage of interest tax shield, earnings can be enhanced. The agency cost theory predicts that higher leverage is expected to lower agency costs, reduce inefficiency and thereby lead to improvement in firm's performance. Therefore, a positive relationship is expected between capital structure ratios and shareholders returns.

Turnover ratios determine the number of times the operating cycle repeats in a financial year. Operating cycle of a business has an impact on the profitability of the business. Higher the turnover ratios lower the operating cycle time and higher will the profits. Therefore, we expect that there is a positive relationship between turnover ratios and shareholders returns.

4.4 Variable Construction

Different studies have used different methods for measuring explanatory and dependent variables. The interpretation of the results largely depends upon the definitions of selected variables. On the basis of review of empirical research and theoretical literature available on the subject and on own judgement, the following variables have been identified:

4.5measures Of Dependent/ Explained Variables

The study uses two measures of shareholders' return as dependent variables viz., return on asset (ROA) and return on equity (ROE). ROA measures the profitability of a firm and the effectiveness with which the firm has utilized its assets. The higher the ROA, the more profitable and effective is the use of assets of the firm and the more is the shareholders' returns. ROE measures the profitability of a firm and the return on funds provided by shareholders. The higher the ROE, the more profitable and effective is the use of funds provided by shareholders of the firm and the more is the shareholders' returns. ROA is calculated as "net profit after tax divided by total assets excluding fictitious assets", following Abor (2007), whereas ROE is calculated as "net profit after tax divided by shareholders' equity ".

The impact of capital structure ratios on shareholders' return is studied by taking ROA as the dependent variable under model I and model III and by taking ROE as the dependent variable under model II and model IV. In all these four models, size measured as natural log of sales (SIZE), annual growth of total assets (GROWTH), and total assets turnover ratios (TATR) have been used as control variables.

The impact of turnover ratios on shareholders' return is studied by taking ROA and ROE as the dependent variables in model V and model VI respectively. In these two models, two variables viz., Total Debt (Excluding current liabilities) divided by Debt plus Equity (DER), and annual growth of total assets (GROWTH) have been used as control variables.

4.6 Measures Of Explanatory Variables

4.6.1. The influence of capital structure ratios on shareholders' return has been studied under four different models by defining capital structure ratios in two ways. In Model I and model II, Long Term Debt

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(LTD) to Equity and Total Debt to Debt plus Equity (DER) are used as the independent variables where ROA and ROE have been used as the dependent variables respectively. In Model III and model IV, Long Term Debt (LTD) to Total Asset (TA) and Total Debt to Total Assets (DAR) have been used as the independent variables where ROA and ROE have been used as the dependent variables respectively.

The four models are tested on 243 pooled observations of all 18 pharmaceutical companies.

The capital structure measures used in the study are:

i.Long-term debt to equity ratio (LTDtoEquity): It is computed as long-term debt divided by shareholders equity. Long-term debt is inclusive of long-term borrowings and deferred tax liability. Shareholders equity is inclusive of total paid-up share capital and reserves and surplus excluding revaluation reserves less fictitious assets.

ii. Total debt to Debt plus equity ratio (DER): It is computed as total debt divided by shareholders equity. Total debt is inclusive of total borrowings, deferred tax liability and excluding current liabilities. DER is computed as total debt (excluding current liabilities) divided by the sum of total debt and shareholders' equity.

iii. Long term debt to total assets ratio (LTDtoTA): It is computed as long-term debt scaled by total assets. Long-term debt is inclusive of long-term borrowings and deferred tax liability. Total asset is exclusive of fictitious assets.

iv. Total Debt to total assets ratio (DAR): It is computed as total debt (excluding current liabilities) scaled by total assets.

The four models used in the study of investigating the influence of capital structure ratios on shareholders' return are as given below:

$$ROA_{it} = \alpha_{it} + \beta_1 LTDtoEquity_{it} + \beta_2 DER_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 TATR_{it} + \varepsilon_{it} \text{ --------- I}$$

$$ROE_{it} = \alpha_{it} + \beta_1 LTDtoEquity_{it} + \beta_2 DER_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 TATR_{it} + \varepsilon_{it} \text{ ------- -II}$$

$$ROA_{it} = \alpha_{it} + \beta_1 LTDtoTA_{it} + \beta_2 DAR_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 TATR_{it} + \varepsilon_{it} \text{ ---------- III}$$

$$ROE_{it} = \alpha_{it} + \beta_1 LTDtoTA_{it} + \beta_2 DAR_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 TATR_{it} + \varepsilon_{it} \text{ ---------- IV}$$

4.6.2 The influence of turnover ratios on shareholders' return has been studied under two different models. In Model V, Inventory turnover ratio, Receivables turnover ratio, Total assets turnover ratio, and working capital turnover ratio are used as the independent variables where ROA has been used as the dependent variable. In Model VI, same set of turnover ratios are used as the independent variables where ROE has been used as the dependent variable.

The two models are tested on 245 pooled observations of all 18 pharmaceutical companies.

The turnover ratios used in the study are:

i. Inventory Turnover Ratio (ITR): It is calculated by taking the cost of goods sold and dividing it by the average inventory. A low inventory turnover ratio indicates slow sales and low profits and vice versa.

ii. Receivables Turnover Ratio (RTR): It is computed as the ratio of credit sales to average receivables. The receivables turnover ratio measures the effect of the collection of accounts receivables on sales. A high receivables turnover ratio indicates that the credit collection policy is good and contributes to higher profitability.

iii. Working Capital Turnover Ratio (WCTR): It is computed as the ratio of cost of sales to working capital. Working capital is the excess

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of current assets over current liabilities. This ratio shows how efficiently the management is using the current assets at its disposal to generate sales. A high working capital turnover ratio indicates efficient utilization of working capital and higher profitability.

iv. Total Assets Turnover Ratio (TATR): It is computed as the ratio of cost of sales to total assets. This ratio shows how efficiently the management is using the realizable assets at its disposal to promote sales. Total asset turnover measures overall investment efficiency by aggregating the joint impact of both short- and long-term assets.

The two models used in studying the influence of turnover ratios on shareholders' return are as given below:

$$ROA_{it} = \alpha_{it} + \beta_1 ITR_{it} + \beta_2 RTR_{it} + \beta_3 TATR_{it} + \beta_4 WCTR_{it} + \beta_5 DER_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it} \text{ --V}$$

$$ROE_{it} = \alpha_{it} + \beta_1 ITR_{it} + \beta_2 RTR_{it} + \beta_3 TATR_{it} + \beta_4 WCTR_{it} + \beta_5 DER + \beta_4 GROWTH_{it} + \varepsilon_{it} \text{ --VI}$$

4. Empirical Results And Analysis

4.1 Capital Structure Ratios And Shareholders' Returns

The analysis of the impact of capital structure ratios on shareholders' returns is done with the help of descriptive analysis, correlation analysis and regression analysis. Table-1reports that ROA for the companies belonging to pharmaceutical industry (243 observations) has an average value of 10.96, a standard deviation of 7.79 and a coefficient of variation of 71.07%. The average ROE is 20.27, with a standard deviation of 16.73, and a coefficient of variation of 82.5%. LTD to Equity has an average value of 0.43, a standard deviation of 0.53 and a coefficient of variation of 123.2%. The average, standard deviation and a coefficient of variation of DER are 0.30, 0.21 and 70% respectively. LTD to TA has an average value of 0.16, a standard deviation of 0.14 and a coefficient of variation of 87.5%. The average, standard deviation and a coefficient of variation of DAR are 0.24, 0.18 and 75% respectively. TATR has an average value of 0.66, a standard deviation of 0.68 and a coefficient of variation of 103.03%, SIZE measured by natural log of sales has the average, standard deviation and a coefficient of variation of 9.36, 0.98 and 10.47% respectively. The average of GROWTH rate of assets is 27.26, with a standard deviation of 52.96 and a coefficient of variation of 194.3%.

From table-1, it is clear that these pharmaceutical companies have more return on equity compared to return on asset and the risk of variations is also more in case of ROE compared to ROA. However, pharmaceutical companies have stable ROA in comparison with ROE. Among capital structure ratios, pharmaceutical companies have more long term debt to equity in average and in instability. Among control variables, average growth of assets is the highest compared to other variables and it is more instable.

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Table-1: Descriptive Analysis			
Capital structure related variables (191 observations)			
Dependent Variables	Mean	SD	CV
ROA	10.96	7.79	71.07%
ROE	20.27	16.73	82.5%
Independent Variables			
LTD to Equity	0.43	0.53	123.2%
DER	0.30	0.21	70%
LTDtoTA	0.16	0.14	87.5%
DAR	0.24	0.18	75%
TATR	0.66	0.68	103.03%
SIZE	9.36	0.98	10.47%
GROWTH	27.26	52.96	194.3%

Pearson correlation analysis as per table-2 reveals that LTD to Equity and DER are negatively and significantly related to ROA and ROE. The relationship of TATR is positive and insignificant with ROA and is negative and insignificant with ROE. SIZE is positive and insignificant with ROA and ROE. GROWTH is positively and significantly related to ROA and ROE.

From table-2, it is clear that in case of pharmaceutical industry, all capital structure related variables are found to be moderately and negatively correlated with ROA and ROE. But the two control variables viz., total assets turnover ratio and size have very low or no correlation with ROA and ROE. The control variable GROWTH has moderate and significant positive correlation with ROA and ROE.

Table-2: Pearson's Correlation (243 observations)		
	Correlation with ROA (p-value at5% level of significance)	Correlation with ROE (p-value at5% level of significance)
LTD to Equity	-.455(.000)	-.354(.000)
DER	-.491(.000)	-.266(.000)
LTDTA	-.398(.000)	-.206(.001)
DAR	-.487(.000)	-.269(.000)
TATR	.000(.500)	-.048(.226)
SIZE	.061(.170)	.031(.316)
GROWTH	.285(.000)	.221(.000)

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Table-3 MODEL SUMMARY, ANOVA and Regression Results of Model I with ROA as the					
		Variables	Beta Coefficients	p-value of Beta Coefficients	VIF
R	.584[a]	(Constant)	13.37	.004	
R Square	.341	LTD to Equity	-2.52	.079	3.44
Adjusted R Square	.327	DER	-12.97	.000	3.51
Durbin-Watson	1.396	TATR	-0.13	.842	1.12
F	24.501	SIZE	0.16	.728	1.13
Sig.	.000[a]	GROWTH	0.04	.000	1.02
MODEL SUMMARY, ANOVA and Regression Results of Model II with ROE as the dependent					
		Variables	Beta Coefficients	p-value of Beta Coefficients	VIF
R	.436[a]	(Constant)	20.087	.064	
R Square	.190	LTD to Equity	-14.687	.000	3.441
Adjusted R Square	.173	DER	9.310	.280	3.505
Durbin-Watson	1.139	TATR	-1.118	.466	1.120
F	11.118	SIZE	.245	.817	1.128
Sig.	.000[a]	GROWTH	.076	.000	1.021

Table- 3 shows that model I with two capital structure ratios i.e., LTD to Equity and DER and three control variables i.e., TATR, SIZE and GROWTH significantly explain about 32.7% of the variation in ROA as measured by its Adjusted R Square and p-value of F test. Model II with ROE as dependent variable and two capital structure ratios i.e., LTD to Equity and DER and three control variables i.e., TATR, SIZE and GROWTH explain about 17.3% of the variation in ROE as measured by its Adjusted R Square and p-value of F test. The negative impact of LTD to Equity is insignificant with ROA and significant with ROE. DER is found significantly negative with ROA and insignificantly positive with ROE. TATR is found insignificantly negative with ROA and with ROE. The positive impact of SIZE is insignificant with ROA and with ROE. The relationship of GROWTH is positive and significant with ROA and ROE. Model I is the model of best fit as its explanatory power is more compared to model II as explained by its R Square and Adjusted R Square.

From table-3, it is clear that in case of pharmaceutical industry, there is significant and negative impact of LTD to Equity and DER on shareholders' returns which means that the higher the amount of total debt, the lesser will be the shareholders' returns. The influence of total assets turnover ratio on ROA and ROE is negative and insignificant. Similarly, the influence of size on ROA and ROE is positive and insignificant. There is positive and significant relationship between shareholders' returns and growth rate of assets.

Table-4 shows that model III with two capital structure ratios i.e., LTD to TA and DAR and three control variables i.e., TATR, SIZE and GROWTH significantly explain about 32.4% of the variation in ROA as measured by its Adjusted R Square and p-value of F test. Model IV with two capital structure ratios i.e.,

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LTD to TA and DAR and three control variables i.e., TATR, SIZE and GROWTH significantly explain about 11.7% of the variation in ROA as measured by its Adjusted R Square and p-value of F test. The positive impact of LTD to TA is insignificant on ROA and ROE. The negative influence of DAR is significant on ROA and ROE. The influence of TATR is negative and insignificant on ROA and ROE. SIZE is found positive and insignificant with ROA and negative and insignificant with ROE. GROWTH is directly and significantly related to ROA and ROE. Model I (32.7%) is the model of best fit as its explanatory power is more compared to model II (17.3%), model III (32.4%) and model IV (11.7%).

Table-4 MODEL SUMMARY, ANOVA and Regression Results of Model III with ROA as the dependent variable

		Variables	Beta Coefficients	p-value of Beta Coefficients	VIF
R	.581[a]	(Constant)	15.405	.001	
R Square	.338	LTDTA	10.684	.106	5.342
Adjusted R Square	.324	DAR	-29.993	.000	5.362
Durbin-Watson	1.348	TATR	-.169	.794	1.124
F	24.177	SIZE	.000	1.000	1.130
Sig.	.000[a]	GROWTH	.044	.000	1.018
MODEL SUMMARY, ANOVA and Regression Results of Model IV with ROE as the dependent variable					
		Variables	Beta Coefficients	p-value of Beta Coefficients	VIF
R	.367[a]	(Constant)	28.41	0.01	
R Square	.135	LTDTA	20.19	0.21	5.34
Adjusted R Square	.117	DAR	-41.93	0.00	5.36
Durbin-Watson	1.082	TATR	-1.35	0.40	1.12
F	7.394	SIZE	-0.24	0.82	1.13
Sig.	.000[a]	GROWTH	0.07	0.00	1.02

From table-4, it is clear that in case of pharmaceutical industry, there is insignificant and positive impact of LTD to total assets on shareholders' returns. There is significant and negative impact of DAR on shareholders' returns which means that the higher the amount of total debt, the lesser will be the shareholders' returns.

5.2turnover Ratios and Shareholders' Returns

The analysis of the impact of turnover ratios on shareholders' returns is done with the help of descriptive analysis, correlation analysis and regression analysis. Table-5 shows that shows that ROA for the companies belonging to pharmaceutical industry has an average value of 11.02, a standard deviation of 7.77 and a coefficient of variation of 70.5%. The average ROE is 20.38 with a standard deviation of 16.59 and a coefficient of variation of 81.4%. ITR has an average value of 2.66, a standard deviation of 0.94 and a coefficient of variation of 35.3%. The average, standard deviation and a coefficient of variation of RTR are 5.54, 3.49 and 62.996% respectively. TATR has an average value of 0.60, standard deviation of 0.23 and a coefficient of variation of 38.33%. WCTR has the average, standard deviation and a coefficient of variation of 3.52, 0.79 and 306.5% respectively. The average of DER is 0.30, with a standard deviation of 0.21 and a coefficient of variation of 70%. The average, standard deviation and a coefficient of variation of GROWTH is 27.18, 52.70 and 193.9% respectively.

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Table-5: Descriptive Analysis			
Turnover ratios (245 observations)			
Dependent Variables	Mean	SD	CV
ROA	11.02	7.77	70.5%
ROE	20.38	16.59	81.4%
Independent Variables			
ITR	2.66	0.94	35.3%
RTR	5.54	3.49	62.996%
TATR	0.60	0.23	38.33%
WCTR	3.52	0.79	306.5%
DER	0.30	0.21	70%
GROWTH	27.18	52.70	193.9%

From table-5, it is clear that these pharmaceutical companies have more return on equity compared to return on asset and the risk of variations is also more in case of ROE compared to ROA. However, pharmaceutical companies have stable ROA in comparison with ROE. Among turnover ratios, pharmaceutical companies have higher average receivables turnover ratio. Also, pharmaceutical companies have higher risk of in receivables turnover ratio. Moreover, working capital turnover ratio is more instable in this industry. The study finds that there is less risk of variation in total assets turnover ratio and more stability in inventory turnover ratio. Among control variables, average growth of assets is the highest compared to DER and it is more instable.

Pearson correlation analysis in table-6 shows that ITR is negatively and insignificantly related to ROA and is positively and insignificantly related to ROE. RTR is positively and insignificantly related to ROA and is positively and significantly related to ROE. The positive impact of TATR is insignificant on ROA and significant on ROE. WCTR is positively and insignificantly related to ROA and ROE. The control variable DER is found to have negative and significant relationship with ROA and ROE. GROWTH is found to have positive and significant relationship with ROA and ROE.

Table-6: Pearson's Correlation (245 observations)		
	Correlation with ROA (p-value at5% level of significance)	Correlation with ROE (p-value at5% level of significance)
ITR	-.089(.083)	.000(.499)
RTR	.089(.083)	.218(.000)
TATR	.074(.123)	.121(.030)
WCTR	.009(.443)	.011(.433)
DER	-.500(.000)	-.275(.000)
GROWTH	.281(.000)	.219(.000)

From table-6, it is clear that in case of pharmaceutical industry, there is low or no correlation of inventory turnover ratio, receivables turnover ratio, total assets turnover ratio, and working capital turnover ratio with shareholders' returns measured as ROA. There is moderate positive correlation of receivables turnover ratio and total assets turnover ratio with shareholders' returns measured as ROE. There is a weak or no correlation of inventory turnover ratio and working capital turnover ratio with ROE. The

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control variable viz., DER has a strong and negative correlation with ROA and a moderate and negative correlation with ROE. The control variable growth of assets has moderate positive and significant correlation with shareholders' returns.

Table-7 shows that model V with four turnover ratios i.e., ITR, RTR, TATR, and WCTR and two control variables i.e., DER and GROWTH significantly explain about 36% of the variation in ROA as measured by its Adjusted R Square and p-value of F test. Model VI with four turnover ratios i.e., ITR, RTR, TATR, and WCTR and two control variables i.e., DER and GROWTH significantly explain about 16.1% of the variation in ROA as measured by its Adjusted R Square and p-value of F test. Table shows that ITR is negatively and insignificantly associated with ROA and ROE. RTR has negative and insignificant association with ROA and has positive and significant association with ROE. TATR has positive and significant association with ROA and ROE. The positive impact of WCTR is insignificant on ROA and ROE. The control variable DER is negatively and significantly associated with ROA and ROE. GROWTH is significantly positive with ROA and ROE.

Table-7 MODEL SUMMARY, ANOVA and Regression Results of Model V with ROA as the dependent variable

		Variables	Coefficients	p-value	VIF
R	.613[a]	(Constant)	13.24	.000	
R Square	.376	ITR	-0.31	.494	1.13
Adjusted R Square	.360	RTR	-0.12	.324	1.14
Durbin-Watson	1.397	TATR	6.19	.001	1.10
F	23.922	WCTR	0.05	.164	1.04
Sig.	.000[a]	DER	-19.82	.000	1.16
		GROWTH	0.05	.000	1.04
MODEL SUMMARY, ANOVA and Regression Results of Model VI with ROE as the dependent variable					
		Variables	Coefficients	p-value	VIF
R	.426[a]	(Constant)	13.89	.000	
R Square	.182	ITR	-0.34	.757	1.13
Adjusted R Square	.161	RTR	0.69	.021	1.14
Durbin-Watson	1.185	TATR	12.19	.007	1.10
F	8.811	WCTR	0.04	.690	1.04
Sig.	.000[a]	DER	-20.46	.000	1.16
		GROWTH	0.08	.000	1.04

From table-7, it is clear that in case of pharmaceutical industry, there is insignificant and negative impact of inventory turnover ratio on ROA and ROE. Receivables turnover ratio is negatively and insignificantly related to ROA and is positively and significantly related to ROE. Total assets turnover ratio has positive and significant impact on shareholders' returns which means that higher are these ratios, the higher will be the shareholders' returns. There is positive impact of working capital turnover ratio on shareholders' returns, but it is insignificant. The control variable DER is found to have negative and significant influence on ROA, and ROE.. Another control variable, growth rate of total assets has positive and significant impact on ROA and ROE which means that the higher the growth rate of total assets the higher will be the shareholders' returns. There is no problem of multi-collinearity as the VIF is less than 10 in case of all variables.

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5. Summary and Conclusion

This study aims to investigate the impact of capital structure ratios expressed by long term debt to equity, total debt to debt and equity, long term debt to total assets and total debt to total assets ratios and turnover ratios expressed by inventory turnover ratio, receivables turnover ratio, total assets turnover ratio and working capital turnover ratio on shareholders' returns expressed by ROA and ROE in Indian context. The study is conducted on 18 pharmaceutical companies listed in National Stock Exchange of India which are the constituents of CNX 200 Index for the 16 year period from 1999-2014. The results showed that in case of pharmaceutical industry, the capital structure variables as well as turnover ratios used in the study influence shareholders' returns in a better way when it is measured as return on asset compared to return on equity. The explanatory power of the models is as evidenced from Adjusted R Square of the models. We can also conclude that pharmaceutical companies have higher ROE and more stable ROA than ROE.

It is evidenced that in case of pharmaceutical industry, LTD to Equity is negatively and insignificantly associated with ROA and is negatively and significantly associated with ROE. DER is found to have significant and negative association with ROA and insignificant and positive association with ROE. There is found to be insignificant and positive impact of LTD to total assets on shareholders' returns. Moreover, significant and negative impact of DAR on shareholders' returns is observed which means that the higher the amount of total debt, the lesser will be the shareholders' returns. There is negative and insignificant influence of total assets turnover ratio, and growth rate of total assets is positively and significantly influenced both ROA and ROE. However, the positive impact of SIZE is insignificant with ROA and with ROE. Model I is the model of best fit as its explanatory power is more compared to model II as explained by its R Square and Adjusted R Square. The study also finds that in case of pharmaceutical industry, there is insignificant and negative impact of inventory turnover ratio on shareholders' returns. Receivables turnover ratio is negatively and insignificantly related to ROA and is positively and significantly related to ROE. Total assets turnover ratio has positive and significant impact on shareholders' returns which means that higher are these ratios, the higher will be the shareholders' returns. There is positive impact of working capital turnover ratio on shareholders' returns, but it is insignificant. The control variable DER is found to have negative and significant influence on ROA, and ROE. Another control variable, growth rate of total assets has positive and significant impact on share holders' returns which means that the higher the growth rate of total assets the higher will be the shareholders' returns.

Future study can be concentrated on examining the impact of other capital structure and turnover ratios on shareholders' returns. Future study can also be on other measures of shareholders' returns. A similar study can be extended to other industries, other Index companies as well.

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Appendix-1: Names of companies used in the study	
S. No	**Names of Pharmaceutical Companies**
1	Ajanta Pharmaceuticals Ltd.
2	Aurobindo Pharma Ltd.
3	Biocon Ltd.
4	Cadila Healthcare Ltd.
5	Cipla Ltd.
6	Divi's Laboratories Ltd.
7	Dr. Reddy's Laboratories Ltd.
8	Glaxosmithkline Pharmaceuticals Ltd.
9	Glenmark Pharmaceuticals Ltd.
10	Ipca Laboratories Ltd.
11	Jubilant Life Sciences Ltd.
12	Lupin Ltd.
13	NATCO Pharma Ltd.
14	Pfizer Ltd.
15	Piramal Enterprises Ltd.
16	Sun Pharmaceutical Industries Ltd.
17	Torrent Pharmaceuticals Ltd.
18	Wockhardt Ltd.