

**Research Paper****Study of the Impact of Financial Leverage on the Profitability of  
NIFTY 50 Companies****Naveen Kumar<sup>1,\*</sup>, Nidhi Jain<sup>2</sup>****<sup>1,\*</sup>Student, Department of Finance and Business Economics, University of Delhi, New Delhi, India****<sup>2</sup>Associate Professor, Department of Finance and Business Economics, University of Delhi, New Delhi, India****Abstract**

*The primary objective of the present research is to examine the impact of financial leverage on the profitability of the companies. The secondary objective is to analyze if there is any individual significant impact of short-term leverage and long-term leverage on the profitability of the companies. A sample of forty-eight companies from the NIFTY 50 index have been chosen for the study. A company's performance is measured through return on assets (ROA) and financial leverage is measured through total debt ratio, short-term debt ratio, and long-term debt ratio. Ordinary least square or OLS method and Eviews software were used to study the relationship. The study found that financial leverage has a significant, but negative impact on the profitability of a company.*

**Keywords:** Financial leverage, return on assets, ordinary least square, OLS, Eviews, Hypothesis testing**\*Author for Correspondence email id. [kumar.naveen1155@gmail.com](mailto:kumar.naveen1155@gmail.com)**

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**Introduction: Background & Rationale of the Study**

Financial decision is one of the most important decisions to be taken by the management. They have financial implications. A significant role is played by the way a company arranges the finances for its operations. There are two modes of financing –Debt and Equity. In the past, a number of researchers, industrialists, and the people having keen interest in finance have tried to come up with the best financing source for a business which can be either a single source or the best mix of various sources for the respective company. Various theories are developed in search of an optimal structure for a particular company. Among the most popular theories, most discussed theories developed till date are trade-off theory & pecking order theory.

When we talk about the inclusion of debt for the financing activity of a company, it has been observed in the past that most of the time these are particularly the big-size companies that include debt in the mixture of sources from where the company arranges the funds. The financial leverage of the company increases when the company finances using debt. But, when a company chooses to take debt, it has to service debt by paying compulsory interest each period which will be a fixed expense for the company and therefore

it also increases the risk of the company. Large-size firms have comparatively more risk taking ability than smaller ones; hence these are the ones that can bear the business risk arising due to the debt funding.

Interest payments are considered as an expense; hence they reduce tax liability to the company. So, companies use debt to benefit from the tax savings via the expenses in the form of interest paid. Therefore, some of the tax liability of the Company on the profits that are used to pay the interest liability is saved. Debt service liability is fixed and most of the times, it is less than the cost of the equity, so debt is preferred over equity by the companies. Also, cost of equity depends on many factors, therefore it is more flexible as compared to the debt. Equity brings more uncertainty in the picture for the company; hence debt is used to increase the possible return for the common shareholders and also to reduce the WACC which is the weighted average cost of capital, for the company. So, with the use of debt in the capital structure, a company can achieve its primary objective which is wealth maximization of the common shareholder.

### **Brief Review of Literature**

This is not the first time that a study has been carried out to study the impact of financial leverage on the profitability of the companies. There are many prominent studies that have already been carried out in the past.

Wessels and Titman (1988), in their study, observed that the companies that were highly profitable had lower financial leverage as compared to the companies with less profits because the highly profitable companies tend to use their own earnings first before looking outside for capital.

Jelinek (2007) tested the impact of financial leverage, free cash flows and firms' growth rate on the earnings management of the company. The study showed that during the observed five years, firms with high degree of financial leverage had low performance in earnings management.

Rafiq, I. Atiq (2008), in his study, discovered that there was relation between profitability & leverage and also, the growth which is measured as annual percentage change in total assets was directly correlated with leverage, hence, internally generated funds might not be sufficient for growing firms and debt financing might be the only option for their growth.

Rafique (2011), in his study, discovered that leverage in capital structure and profitability was negatively correlated as debt-equity ratio increases, a firm's profitability decreases. He also found that profitability and financial leverage were negatively correlated. Thus one increases, the other one decreases, so the profitability of a company has a negative relation with both capital structure and degree of financial leverage.

Asaolu and Akinlo (2012), their study shows that leverage has negative relation with profitability. They discovered that use of debt in capital structure decreases the profitability, so they suggested that in order to increase profitability, firms are required to reduce their debt.

Soni and Trivedi (2013) published their research paper "Leverage analysis of selected paint companies in India" and their research was with the view that there is no significant relationship between financial leverage and profitability, but there is a significant relationship between operating leverage and the firm's profitability.

Khedkar (2015) revealed that there is a significant negative relation between return on investment (ROI) and operating leverage and that there is a positive relation between ROI and financial leverage but not significant.

Bui (2017) examined the effect of debt ratios on the firm performance and the result showed that there were strong negative effects of financial leverage on the performance of the company.

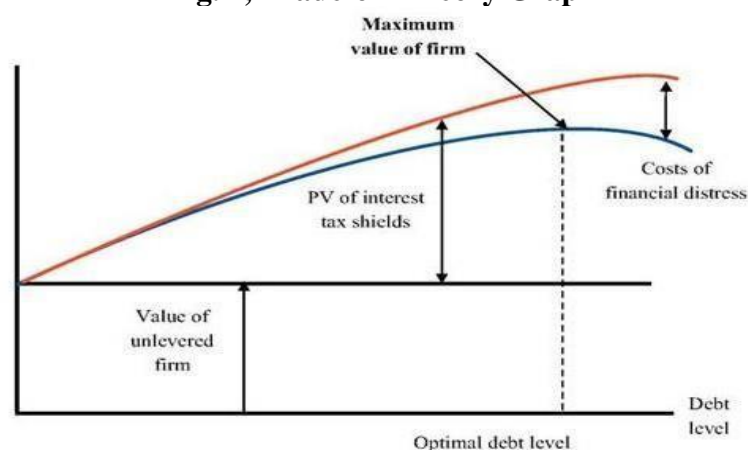
Primary focus of this research paper is to examine the impact of financial leverage on the profitability of the companies which are included in Nifty 50 Index. It has also been analyzed by the author whether the short- term leverage and long- term leverage has any impact on the profitability of the company independently.

### Theoretical Framework

The study is based on the well- known trade-off theory of capital structure. Here, the capital structure refers to mix of equity capital, debt and retained profit which are used by the firms to fund their growth and operations. Ratio of debt and equity having least cost of capital and maximum value for the firm is known as optimal capital structure. A lot of theories have been developed in the past to find the optimal capital structure and the trade-off theory is one among the most popular ones. This theory explains that the amount of debt and equity that a company should use in its capital structure is dependent on the benefits and costs associated with them. In case of debt, benefit being the tax payment that a company saves by paying interest expenses and the cost being the interest expense itself paid by the company. Cost of equity plays an important role here. If the company has not used debt, then the cost of equity will probably reduce but if there's a sufficient use of debt already in the capital structure of the company then the cost of equity is most likely to increase because fixed portion of expense in the form of interest expense, irrespective of its profits and losses, has increased. The graph given in Figure 1 can help us understand the trade-off theory.

Now, we come to understand that there is advantage to incorporating debt in the capital structure i.e. tax benefits of debt and also there are costs of using debt i.e. costs of financial distress including bankruptcy costs and non-bankruptcy costs (e.g. staff leaving, suppliers demanding disadvantageous payment terms, bondholder/stockholder infighting, etc). Marginal benefit declines and marginal cost increases as the level of debt increases in the capital structure. Thus, a company needs to focus on this trade-off while choosing the source of financing.

**Fig. 1, Trade-off Theory Graph**



Furthermore, theoretical framework for this study also includes the statement of the purpose as to with what objective is the study is being done. It also states which hypothesis has been constructed and the

basic foundation of the test equation that has been used for regression.

### Objectives

Major objective of the study is:

To analyze impact of financial leverage on the profitability of the companies included in NIFTY 50 index

Minor objective of the study is:

1. To analyze if there is any individual significant impact of short- term leverage and long- term leverage on the profitability of the company

### Testing of Hypothesis

Hypothesis testing has been done to analyze the impact of leverage on profitability. The following Hypothesis has been constructed for the study:

### Statement of Hypothesis

H<sub>0</sub>: Financial leverage does not have impact on the profitability of the company

H<sub>1</sub>: Financial leverage has impact on the profitability of the company

The Regression model used is as follows:

$$Y_{ROA} = \alpha + \beta_1 X_{TDR} + \varepsilon$$

Dependent variable ( $Y_{ROA}$ ) is Return on Assets (ROA) which is calculated by dividing the Profit after taxes (PAT) + Interest Expenses for that year by Total Assets of the company.

Independent variable ( $X_{TDR}$ ) is leverage, defined by Total Debt Ratio, which is calculated as Total Debt (short -term debt or long- term debt, secured debt or unsecured debt) divided by Total Assets of the company.

Hypothesis testing has been done to analyze the individual impact of short- term leverage & long- term leverage on the profitability of the company.

Following hypothesis has been constructed:

Statement of Hypothesis:

H<sub>0</sub>: Short- term debt ratio and Long- term Debt Ratio does not have impact on the profitability of the company

H<sub>1</sub>: Short- term debt ratio and Long- term Debt Ratio has impact on the profitability of the company

The following regression model is used:

$$Y_{ROA}: \alpha + \beta_1 X_{1LDR} + \beta_2 X_{2SDR} + \varepsilon$$

Here, dependent variable is same as above. However, there are two independent variables:

Long term leverage ( $X_{1LDR}$ ), defined by Long-term Debt Ratio, which is calculated as Long-term Debt (Non-current liabilities) divided by Total assets (or Total Liabilities) of the company.

Short term leverage ( $X_{2SDR}$ ), defined by Short-term Debt Ratio, which is calculated as Short-term Debt (current liabilities) divided by Total Assets (or Total Liabilities) of the company.

For both the models,  $\alpha$  is the intercept and  $\varepsilon$  is the error term

### **Data Analysis**

This section discusses about the data sources from where the data was taken, which data was taken and finally, the methodology used to test the stated hypothesis and to achieve the objective of the study.

### **Sources of Data**

Data for the past 5 years ranging from 1<sup>st</sup> April, 2015 to 31<sup>st</sup> March, 2020 for the companies included in NIFTY 50 index was taken for the purpose of this study (the detailed description is given in the Annexure). All data was taken from prowest data base. Data for two life insurance companies (HDFC Life Insurance and SBI Life Insurance) were excluded from the analysis as the representation of their financial statements is very different from other companies and prowest doesn't provide any required data for these companies. These 48 companies (names of Companies are given in the Annexure) were included because it would give a large enough data set of companies having a large market size which could bear the increased business risk due to financing using debt capital. Because it is not necessary for banks to categorize the liabilities as current or non-current, numbers for non-current liabilities of banks are not available on prowest database. To get these numbers, data of reserve and funds, total capital, current liabilities & provisions were taken and deducted from total liabilities for each bank for all the years.

### **Data**

Data about current liabilities, non-current liabilities, total liabilities, profit after tax, interest expense and total assets was extracted for NIFTY 50 companies for the past 5 years ranging from 1 April 2015 to 31 March 2020. For banks, more data related to reserves and funds, total capital, current liabilities & provisions and total liabilities was also taken. Finally, extracted data was used to calculate Long Term Debt ratio (LDR), Short Term Debt Ratio (SDR), Total Debt Ratio (TDR) and Return on Assets (ROA). Data was formatted to make it useable in Eviews software and final data observations which was important for the study are included in the Annexure at the end of this document.

### **Methodology**

The ordinary least square or OLS method in the study was used and the software used was Eviews. Final data on which work was being done is categorized as panel data which has properties of both cross-sectional data and time series data. Application of regression models on this kind of data is relatively more complex than other normal and simpler econometric models. Because the author had panel data, it was made sure that when data file was opened in Eviews software, the data would categorize under dated panel data.

Panel data may have fixed effects or random effects:

**Fixed effects** – In fixed effect regression model, fixed effect means that each entity would have a fixed intercept different from other entity, but it would not vary over time i.e. time-invariant. Also, the unobserved variables that are unique may have any associations whatsoever with the observed variables.

**Random effects** – Instead of allowing each individual entity to have its own (fixed) intercept, this model assumes that intercept values of all the entities are random and a single mean estimate would apply to all entities. Also, unobserved variables are assumed to have no correlation with (or statistically independent of) the observed variables.

### **Hausman Test:**

Now, the issue was which option to choose among fixed effect or random effect models. Here, Hausman

test would be helpful. Hausman test is a model specification test which gives a p-value with null hypothesis that random effect model should be used. If p-value is greater than 0.5, random effect model should be used and if p-value is less than 0.5, then null is rejected and fixed effect model should be used.

So, after running the Hausman test, the model suggested by it was taken to regress the data to find the result and achieve the objective of this study which is to find whether leverage has impact on profitability of companies and also to find which among the short- term leverage and long- term leverage is important, if any of these make an impact on the profitability.

### Results & their respective Interpretation

This section covers the results of the study and their interpretation. A conclusion section is formed to conclude all the results found in the study and finally the limitations of the study are also mentioned after the final regression results.

A Correlation Matrix was used to observe the impact of different variables  
i.e. ROA, SDR, LDR & TDR on each other

Regression analysis was done to find the impact of leverage as a whole (i.e. totaldebt) and also, Short-term & Long- term leverage separately has on the profitability

### Correlation Matrix

The correlation matrix given below shows the correlation among the different variables  
i.e. ROA, SDR, LDR & TDR:

**Table 1**

	LDR	SDR	TDR	ROA
LDR	1.000000			
SDR	-0.432855	1.000000		
TDR	0.892545	0.020178	1.000000	
ROA	-0.586586	0.039164	-0.630979	1.000000

The Correlation Matrix suggests that Short- term Debt Ratio is negatively correlated with Long term Debt Ratio and positively correlated with Total Debt Ratio (however, correlation is very low). Long term Debt Ratio is highly correlated with total debt ratio. Return on Assets is positively correlated with Short- term Debt Ratio (however, correlation is very low) and highly negative correlated with Long- term Debt Ratio and Total Debt Ratio.

### Regression Analysis

To study the impact of Leverage on Profitability, following Regression Model was constructed:

$$Y_{ROA} = \alpha + \beta_1 X_{TDR} + \epsilon$$

Where,

Dependent variable is Return on Assets (ROA) Independent variable is Total Debt Ratio (TDR)

Resulting equation after estimation in Eviews software (Annexure 1.1) was: -

$$Y_{ROA} = 0.201920 - 0.180696 X_{TDR} + \varepsilon$$

The resulting regression estimation showed that p-value for Total Debt Ratio was 0.0000 which implies that Total Debt Ratio is significant for the profitability (i.e. ROA) of the company. Coefficient for TDR (i.e. - 0.180696) suggests that there is a negative relation between the Total Debt Ratio and the Return on Assets, which was also suggested by the correlation matrix in Table 1. But before finalizing the conclusions, the author was required to run the Hausman test also.

To study the impact of short- term & long- term leverage on profitability, regression model constructed was as follows:

$$Y_{ROA}: \alpha + \beta_1 X_{1LDR} + \beta_2 X_{2SDR} + \varepsilon$$

Where,

Dependent variable is Return on Assets (ROA)

Independent variables are Long- Term Debt Ratio (LDR) and Short- Term Debt Ratio(SDR)

Resulting equation after estimation in Eviews software (Annexure 1.2) was:

$$Y_{ROA}: 0.194796 - 0.180994 X_{1LDR} - 0.151273 X_{2SDR} + \varepsilon$$

The resulting regression estimation showed that p-value for both the LDR and SDR was 0.0000 which means both short- term debt ratio and long- term debt ratio are separately significant for the profitability of the company. Also, the coefficient for LDR was negative which suggests that there is negative relation between Return on Assets and long- term debt ratio is in accordance with the correlation matrix in Table 1. However, the negative coefficient for SDR is against the positive relation of SDR with ROA as suggested by the correlation matrix in Table 1. But, we could also notice from the correlation matrix that the positive correlation is very low between them (i.e. approx 0.04). The author had to run the Hausman test before finalizing the conclusions.

### **Hausman Test**

The data on which the author had to work on was a panel data, so he had to specify the panel specification. Panel specification can be either Random or Fixed. Hausman Test is used to decide which specification was to be used. For Hausman Test, it is necessary to use random effect for estimation of coefficients. Null hypothesis for the Hausman test is that there is no misspecification i.e. random effect is correctly used. If null is not rejected then random effects should be used and if null is rejected, then fixed effects should be used.

### **To study the Impact of Leverage on Profitability**

Hausman test resulted in p-value of 0.3061 (Annexure 2.1), therefore, the author could not reject the null hypothesis and so, random effects were used for the estimation of coefficients across periods for panel specifications for the study of impact of leverage on profitability.

### **To study the impact of short-term & long- term Leverage on Profitability**

Hausman test resulted in p-value of 0.6958 (Annexure 2.2), therefore, null hypothesis could not be rejected and so, random effects were used for the estimation of coefficients across periods for panel specifications for the study of the impact of short -term & long- term leverage on profitability.

### **Final Regression**

After doing the Hausman test, it was known about the effect which was required to use in both cases:

Random effect. Results of regression keeping the panel estimation to random effects across periods is as follows:

To study the impact of leverage on profitability Regression model constructed was as follows:

$$Y_{ROA} = \alpha + \beta_1 X_{TDR} + \varepsilon$$

Where,

Dependent variable is Return on Assets (ROA) Independent variable is Total Debt Ratio (TDR)

Resulting equation after estimation in Eviews software (Annexure 3.1) was: -

$$Y_{ROA} = 0.192347 - 0.163783 X_{TDR} + \varepsilon$$

The resulting regression estimation showed that p-value for Total Debt Ratio is 0.0000 which implies that Total Debt Ratio is significant for the profitability (i.e. ROA) of the company. Coefficient for TDR (i.e. - 0.163783) implies that there is a negative relation between the Total Debt Ratio and the Return on Assets, which was also suggested by the Correlation Matrix in Table 1.

To study the impact of short- term & long- term leverage on profitability Regression model constructed was as follows:

$$Y_{ROA}: \alpha + \beta_1 X_{1LDR} + \beta_2 X_{2SDR} + \varepsilon$$

Where,

Dependent variable is Return on Assets (ROA)

Independent variables are Long- Term Debt Ratio (LDR) and Short-Term Debt Ratio (SDR)

Resulting equation after estimation in Eviews software (Annexure 3.2) was:

$$Y_{ROA}: 0.181697 - 0.170932 X_{1LDR} - 0.111048 X_{2SDR} + \varepsilon$$

The resulting regression estimation showed that p-value for LDR is 0.0000 and SDR is 0.0054 which means both short- term debt ratio and long- term debt ratio are separately significant for the profitability of the company. Also, the coefficient for LDR is negative which implies that there is negative relation between Return on Assets and long -term debt ratio which is in accordance with the correlation matrix in Table 1. However, the negative coefficient for SDR is against the positive relation of SDR with ROA as suggested by the correlation matrix in Table 1. But, we could also notice from the correlation matrix that the positive correlation was very low between them (i.e. approx 0.04).

From the result of both regression models, it can be concluded that total debt ratio, long- term debt ratio & short- term debt ratio have significant impact on the profitability of the company.

## Conclusion

The below Table 2 provides the information about the three independent variables i.e. Total Debt Ratio, Long- term Debt Ratio & Short- term Debt Ratio. The dependent variable is profitability represented by Return on Assets (ROA).

**Table 2**

Variable	Coefficient	p - value
Total Debt Ratio	- 0.163783	0.0000



Long term Debt Ratio	- 0.170932	0.0000
Short term Debt Ratio	- 0.111048	0.0054

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With the results we have, we can conclude the following:

- Total debt ratio has significant impact on the profitability of companies
- Long- term debt ratio has significant impact on the profitability of companies
- Short- term debt ratio has significant impact on the profitability of companies

All 3 coefficients have negative sign which means that there is an inverserelationship between leverage and profitability of the company. There is further discussion on the results obtained and their comparison with the results obtained in researches done earlier in “Summary & Policy Implication”.

### **Limitations of the Study**

There are some limitations as well in the study which are listed below for a better understanding of the study by the reader. The limitations are:

Sampling Bias: Only the companies included in the NIFTY 50 index were considered for the study. Banks and government companies were also included in the sample which acts as a limitation to the study.

Survivorship Bias: The study also faced the survivorship bias. Companies that were earlier in the NIFTY 50 index, but now have been removed from the index were overlooked in this study

### **Summary & Policy Implications**

This section includes the summary of the results obtained and the implication of those results and also, discusses whether it agrees with the theory or not.

Having financial leverage means that there are some fixed income securities like debt which has been used in the capital structure of the company. There is an established study that use of debt in capital structure increases the profitability of the company. Aim of this study was to check if this theory still holds in the Indian market and also to check whether short- term debt and long- term debt separately have significant impact on the profitability of the companies.

All the analysis in this study and the interpretations that can be arrived at by analyzing the data for NIFTY 50 companies i.e. including all banks, and government companies and not separating them from the data because the theory should hold for each and every company irrespective of the sector it belongs to, it was found that total leverage plays a significant role in the profitability of the companies. Therefore, increasing total debt in capital structure would have a significant impact on the profitability of the companies. However, against the theory that leverage increases the profitability, it was found from the correlation matrix and the regression analysis that there is negative relationship and increase of debt would decrease the profitability of the companies.

Similarly, considering the short- term and long- term leverage separately, it was seen that both of them are significant factors to impact the profitability of the companies. That means that even if a company incorporates only either short- term debt or long- term debt in its capital structure, it would have a significant impact on the profitability. Negative coefficients for both short- term and long- term leverage means that company would not be able to increase its profitability with more use of either debt in the

sources of funds for the company. Either type of leverage would harm the profitability of the company.

However, while this study's results are not in favour of the well-known trade-off theory, results are consistent with the theories of some other researcher who have worked on similar projects.

Wessels and Titman (1988), in their study, observed that the companies which are highly profitable have lower financial leverage as compared to the companies with less profits because the highly profitable companies use their own earnings first before looking outside for capital. Jelinek (2007) tests the impact of financial leverage, free cash flows and firms' growth rate on the earnings management of the company. The study shows that during the observed five years, firms with high degree of financial leverage have low performance in earnings management. Rafique (2011), in his study, discovers that leverage in capital structure and profitability is negatively correlated as debt-equity ratio increases, a firm's profitability decreases. He also found that profitability and financial leverage are negatively correlated. Thus one increases, the other one decreases, so the profitability of a company has a negative relation with both capital structure and degree of financial leverage. Bui (2017) examined the effect of debt ratios on the firm performance and the result showed that there were strong negative effects of financial leverage on the performance of the company.

It can be concluded from this study that leverage has a significant, but negative impact on the profitability of a company. As the debt component in the capital structure increases, profitability of the companies decreases.

### **Suggestions for Future Research**

For the future researchers who would like to work around the impact of leverage on profitability, the author has suggested that as he has already studied for the set of companies in NIFTY 50 index, further researches can be done on the dataset basis on the various industries. This would help in observing the impact of leverage on profitability in various industries which later can be compared with impact in other industries.

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## ANNEXURES

### 1. Eviews result of Regression Analysis

#### 1.1 To study the impact of Leverage on Profitability

Dependent Variable: ROA  
 Method: Panel Least Squares  
 Date: 03/14/21 Time: 15:07  
 Sample (adjusted): 3/01/2016 3/01/2020  
 Periods included: 5  
 Cross-sections included: 48  
 Total panel (balanced) observations: 240

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.201920	0.008813	22.91210	0.0000
TDR	-0.180694	0.014401	-12.54741	0.0000
R-squared	0.398135	Mean dependent var		0.099628
Adjusted R-squared	0.395606	S.D. dependent var		0.066698
S.E. of regression	0.051853	Akaike info criterion		-3.072509
Sum squared resid	0.639919	Schwarz criterion		-3.043503
Log likelihood	370.7010	Hannan-Quinn criter.		-3.060822
F-statistic	157.4375	Durbin-Watson stat		0.769150
Prob(F-statistic)	0.000000			

#### 1.2 To study the impact of short- term & long- term Leverage on Profitability

Dependent Variable: ROA  
 Method: Panel Least Squares  
 Date: 03/14/21 Time: 15:28  
 Sample (adjusted): 3/01/2016 3/01/2020  
 Periods included: 5  
 Cross-sections included: 48  
 Total panel (balanced) observations: 240

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.194796	0.011193	17.40412	0.0000
LDR	-0.180994	0.014402	-12.56742	0.0000
SDR	-0.151273	0.031930	-4.737717	0.0000
R-squared	0.400829	Mean dependent var		0.099628
Adjusted R-squared	0.395773	S.D. dependent var		0.066698
S.E. of regression	0.051846	Akaike info criterion		-3.068662
Sum squared resid	0.637054	Schwarz criterion		-3.025154
Log likelihood	371.2394	Hannan-Quinn criter.		-3.051131
F-statistic	79.27338	Durbin-Watson stat		0.773737
Prob(F-statistic)	0.000000			

### 2. Hausman Test Results

## 2.1 To study the impact of Leverage on Profitability

Correlated Random Effects - Hausman Test  
Equation: Untitled  
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.047306	1	0.3061

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
TDR	-0.128693	-0.163783	0.001176	0.3061

## 2.2 To study the impact of short- term & long- term leverage on Profitability

Correlated Random Effects - Hausman Test  
Equation: Untitled  
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.725522	2	0.6958

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LDR	-0.153126	-0.170932	0.001383	0.6321
SDR	-0.084465	-0.111048	0.001014	0.4038

## 3. Final Regression results

### 3.1 To study the impact of Leverage on Profitability

Dependent Variable: ROA Method: Panel EGLS (Cross-section random effects) Date: 03/14/21 Time: 18:41 Sample (adjusted): 3/01/2016 3/01/2020 Periods included: 5 Cross-sections included: 48 Total panel (balanced) observations: 240 Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.192347	0.015602	12.32814	0.0000
TDR	-0.163783	0.024653	-6.643561	0.0000
Effects Specification			S.D.	Rho
Cross-section random			0.047208	0.8068
Idiosyncratic random			0.023104	0.1932
Weighted Statistics				
R-squared	0.156412	Mean dependent var	0.021301	
Adjusted R-squared	0.152867	S.D. dependent var	0.025104	
S.E. of regression	0.023106	Sum squared resid	0.127064	
F-statistic	44.12813	Durbin-Watson stat	1.615104	
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.394648	Mean dependent var	0.099628	
Sum squared resid	0.643627	Durbin-Watson stat	0.779280	

## 3.2 To study the impact of short -term &amp; long- term Leverage on Profitability

Dependent Variable: ROA Method: Panel EGLS (Cross-section random effects) Date: 03/14/21 Time: 18:54 Sample (adjusted): 3/01/2016 3/01/2020 Periods included: 5 Cross-sections included: 48 Total panel (balanced) observations: 240 Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.181697	0.016856	10.77948	0.0000
LDR	-0.170932	0.025158	-6.794391	0.0000
SDR	-0.111048	0.039529	-2.809263	0.0054
Effects Specification				
			S.D.	Rho
Cross-section random			0.047681	0.8110
Idiosyncratic random			0.023018	0.1890
Weighted Statistics				
R-squared	0.164584	Mean dependent var		0.021025
Adjusted R-squared	0.157534	S.D. dependent var		0.025010
S.E. of regression	0.022956	Sum squared resid		0.124892
F-statistic	23.34550	Durbin-Watson stat		1.634234
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.396744	Mean dependent var		0.099628
Sum squared resid	0.641398	Durbin-Watson stat		0.781890

List of NIFTY- 50 Companies with which the Study has been done:

Company's Name	
Adani Ports & Special Economic Zone Ltd.	Hindustan Unilever Ltd.
Asian Paints Ltd.	Housing Development Finance Corpn. Ltd.
Axis Bank Ltd.	I C I C I Bank Ltd.
Bajaj Auto Ltd.	ITC Ltd.
Bajaj Finance Ltd.	Indian Oil Corpn. Ltd.
Bajaj Finserv Ltd.	IndusInd Bank Ltd.
Bharat Petroleum Corpn. Ltd.	Infosys Ltd.
Bharti Airtel Ltd.	JSW Steel Ltd.
Britannia Industries Ltd.	Kotak Mahindra Bank Ltd.
Cipla Ltd.	Larsen & Toubro Ltd.
Coal India Ltd.	Mahindra & Mahindra Ltd.
Divi's Laboratories Ltd.	Maruti Suzuki India Ltd.
Dr. Reddy's Laboratories Ltd.	NTPC Ltd.
Eicher Motors Ltd.	Nestle India Ltd.
G A I L (India) Ltd.	Oil & Natural Gas Corpn. Ltd.
Grasim Industries Ltd.	Power Grid Corporation of India Ltd.
H C L Technologies Ltd.	Reliance Industries Ltd.
H D F C Bank Ltd.	Shree Cement Ltd.
Hero Motocorp Ltd.	State Bank of India
Hindalco Industries Ltd.	Sun Pharmaceutical Industries. Ltd.
Tata Consultancy Services Ltd.	Tata Motors Ltd.

Tata Steel Ltd.	Tech Mahindra Ltd.
Titan Company Ltd.	UPL Ltd.
Ultratech Cement Ltd.	Wipro Ltd.

**Final Data used in this Study:**

SL. No	Company Name	Year	LDR	SDR	TDR	ROA
1	Adani Ports & Special Economic Zone Ltd.	Mar-16	0.4665	0.1969	0.6633	9.78%
1	Adani Ports & Special Economic Zone Ltd.	Mar-17	0.4607	0.1460	0.6067	11.29%
1	Adani Ports & Special Economic Zone Ltd.	Mar-18	0.4839	0.0823	0.5662	9.95%
1	Adani Ports & Special Economic Zone Ltd.	Mar-19	0.4052	0.1756	0.5808	9.21%
1	Adani Ports & Special Economic Zone Ltd.	Mar-20	0.4588	0.1248	0.5836	9.15%
2	Asian Paints Ltd.	Mar-16	0.0535	0.3006	0.3541	16.72%
2	Asian Paints Ltd.	Mar-17	0.0490	0.3156	0.3647	15.75%
2	Asian Paints Ltd.	Mar-18	0.0468	0.3259	0.3727	14.85%
2	Asian Paints Ltd.	Mar-19	0.0772	0.3232	0.4005	13.71%
2	Asian Paints Ltd.	Mar-20	0.0761	0.2781	0.3542	17.21%
3	Axis Bank Ltd.	Mar-16	0.8642	0.0378	0.9019	5.98%
3	Axis Bank Ltd.	Mar-17	0.8626	0.0451	0.9077	5.03%
3	Axis Bank Ltd.	Mar-18	0.8689	0.0398	0.9087	3.99%
3	Axis Bank Ltd.	Mar-19	0.8747	0.0420	0.9166	4.78%
3	Axis Bank Ltd.	Mar-20	0.8593	0.0475	0.9068	4.30%
4	Bajaj Auto Ltd.	Mar-16	0.0329	0.1601	0.1930	22.11%
4	Bajaj Auto Ltd.	Mar-17	0.0346	0.1472	0.1818	17.53%
4	Bajaj Auto Ltd.	Mar-	0.0327	0.1621	0.1947	15.50%

		18				
4	Bajaj Auto Ltd.	Mar-19	0.0289	0.1684	0.1973	15.83%
4	Bajaj Auto Ltd.	Mar-20	0.0302	0.1592	0.1894	18.31%
5	Bajaj Finance Ltd.	Mar-16	0.5616	0.2883	0.8499	7.81%
5	Bajaj Finance Ltd.	Mar-17	0.5447	0.3126	0.8573	7.71%
5	Bajaj Finance Ltd.	Mar-18	0.7585	0.0580	0.8165	8.23%
5	Bajaj Finance Ltd.	Mar-19	0.7960	0.0481	0.8441	8.41%
5	Bajaj Finance Ltd.	Mar-20	0.7534	0.0544	0.8078	8.76%

	Bajaj Finserv Ltd.	Mar-16	0.4266	0.3861	0.8127	5.11%
6	Bajaj Finserv Ltd.	Mar-17	0.4312	0.3873	0.8185	5.22%
6	Bajaj Finserv Ltd.	Mar-18	0.4131	0.3938	0.8069	5.38%
6	Bajaj Finserv Ltd.	Mar-19	0.4857	0.3392	0.8249	5.71%
6	Bajaj Finserv Ltd.	Mar-20	0.5074	0.2905	0.7979	6.09%
7	Bharat Petroleum Corpn. Ltd.	Mar-16	0.3101	0.3570	0.6671	9.47%
7	Bharat Petroleum Corpn. Ltd.	Mar-17	0.2753	0.4302	0.7056	8.29%
7	Bharat Petroleum Corpn. Ltd.	Mar-18	0.3112	0.3754	0.6867	7.80%
7	Bharat Petroleum Corpn. Ltd.	Mar-19	0.3218	0.3855	0.7073	6.55%
7	Bharat Petroleum Corpn. Ltd.	Mar-20	0.3550	0.3944	0.7495	2.82%
8	Bharti Airtel Ltd.	Mar-16	0.4239	0.2664	0.6903	4.54%
8	Bharti Airtel Ltd.	Mar-17	0.4193	0.2767	0.6961	4.20%
8	Bharti Airtel Ltd.	Mar-18	0.3888	0.3156	0.7045	2.87%

8	Bharti Airtel Ltd.	Mar-19	0.368 8	0.3366	0.705 5	3.60%
8	Bharti Airtel Ltd.	Mar-20	0.357 9	0.3672	0.725 1	-6.29%
9	Britannia Industries Ltd.	Mar-16	0.030 1	0.3778	0.407 8	23.45%
9	Britannia Industries Ltd.	Mar-17	0.027 0	0.3247	0.351 7	21.37%
9	Britannia Industries Ltd.	Mar-18	0.035 0	0.3151	0.350 1	19.19%
9	Britannia Industries Ltd.	Mar-19	0.029 5	0.2939	0.323 4	18.38%
9	Britannia Industries Ltd.	Mar-20	0.113 3	0.3252	0.438 5	18.54%
10	Cipla Ltd.	Mar-16	0.069 9	0.3719	0.441 8	7.11%
10	Cipla Ltd.	Mar-17	0.220 9	0.1664	0.387 3	5.66%
10	Cipla Ltd.	Mar-18	0.193 1	0.1736	0.366 7	6.64%
10	Cipla Ltd.	Mar-19	0.201 2	0.1619	0.363 2	6.95%
10	Cipla Ltd.	Mar-20	0.134 1	0.1956	0.329 7	7.25%
11	Coal India Ltd.	Mar-16	0.404 5	0.2918	0.696 3	12.74%
11	Coal India Ltd.	Mar-17	0.409 3	0.3861	0.795 5	7.97%
11	Coal India Ltd.	Mar-18	0.449 0	0.3908	0.839 9	5.82%
11	Coal India Ltd.	Mar-19	0.450 0	0.3524	0.802 4	13.03%
11	Coal India Ltd.	Mar-20	0.457 9	0.3295	0.787 4	11.19%
12	Divi'S Laboratories Ltd.	Mar-16	0.033 4	0.1044	0.137 8	22.66%
12	Divi'S Laboratories Ltd.	Mar-17	0.030 1	0.1065	0.136 6	17.11%
12	Divi'S Laboratories Ltd.	Mar-18	0.213 2	0.0783	0.291 6	10.49%
12	Divi'S Laboratories Ltd.	Mar-19	0.114 1	0.0965	0.210 6	15.37%
12	Divi'S Laboratories Ltd.	Mar-20	0.032	0.1940	0.226	14.62%



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13	Dr. Reddy'S Laboratories Ltd.	Mar-16	0.072 0	0.3114	0.383 4	10.75%
13	Dr. Reddy'S Laboratories Ltd.	Mar-17	0.052 0	0.3862	0.438 1	6.05%
13	Dr. Reddy'S Laboratories Ltd.	Mar-18	0.137 6	0.3057	0.443 2	4.39%
13	Dr. Reddy'S Laboratories Ltd.	Mar-19	0.122 8	0.2636	0.386 4	8.73%
13	Dr. Reddy'S Laboratories Ltd.	Mar-20	0.028 5	0.3110	0.339 6	8.76%
14	Eicher Motors Ltd.	Mar-16	0.169 3	0.2061	0.375 4	19.51%
14	Eicher Motors Ltd.	Mar-17	0.021 0	0.2180	0.239 0	21.09%
14	Eicher Motors Ltd.	Mar-18	0.026 0	0.2375	0.263 5	17.90%
14	Eicher Motors Ltd.	Mar-19	0.034 5	0.1840	0.218 5	17.10%
14	Eicher Motors Ltd.	Mar-20	0.037 2	0.1625	0.199 7	14.54%
15	G A I L (India) Ltd.	Mar-16	0.235 2	0.1671	0.402 3	4.17%
15	G A I L (India) Ltd.	Mar-17	0.206 7	0.1525	0.359 2	7.18%
15	G A I L (India) Ltd.	Mar-18	0.178 5	0.1747	0.353 2	7.72%
15	G A I L (India) Ltd.	Mar-19	0.227 6	0.1463	0.373 9	8.08%
15	G A I L (India) Ltd.	Mar-20	0.233 1	0.1560	0.389 1	9.38%
16	Grasim Industries Ltd.	Mar-16	0.175 4	0.2359	0.411 3	6.75%
16	Grasim Industries Ltd.	Mar-17	0.191 7	0.1712	0.362 9	7.55%
16	Grasim Industries Ltd.	Mar-18	0.399 5	0.1981	0.597 5	3.84%
16	Grasim Industries Ltd.	Mar-19	0.431 0	0.1989	0.629 9	3.62%
16	Grasim Industries Ltd.	Mar-20	0.438 6	0.1869	0.625 5	5.28%
17	H C L Technologies Ltd.	Mar-16	0.049 9	0.2564	0.306 4	14.22%

17	H C L Technologies Ltd.	Mar-17	0.034 8	0.2508	0.285 7	18.71%
17	H C L Technologies Ltd.	Mar-18	0.031 6	0.2163	0.247 9	18.11%
17	H C L Technologies Ltd.	Mar-19	0.081 5	0.2151	0.296 6	17.43%
17	H C L Technologies Ltd.	Mar-20	0.092 8	0.2916	0.384 4	13.82%
18	H D F C Bank Ltd.	Mar-16	0.852 3	0.0500	0.902 3	6.15%
18	H D F C Bank Ltd.	Mar-17	0.831 0	0.0658	0.896 8	5.98%
18	H D F C Bank Ltd.	Mar-18	0.856 5	0.0439	0.900 3	5.52%
18	H D F C Bank Ltd.	Mar-19	0.835 6	0.0452	0.880 7	5.89%
18	H D F C Bank Ltd.	Mar-20	0.843 3	0.0448	0.888 1	5.66%
19	Hero Motocorp Ltd.	Mar-16	0.104 5	0.2574	0.361 9	22.20%
19	Hero Motocorp Ltd.	Mar-17	0.115 7	0.2547	0.370 4	21.34%
19	Hero Motocorp Ltd.	Mar-18	0.125 9	0.2379	0.363 7	19.53%
19	Hero Motocorp Ltd.	Mar-19	0.126 5	0.2190	0.345 5	17.02%
19	Hero Motocorp Ltd.	Mar-20	0.100 2	0.2071	0.307 4	17.48%
20	Hindalco Industries Ltd.	Mar-16	0.512 2	0.2130	0.725 2	2.67%
20	Hindalco Industries Ltd.	Mar-17	0.452 1	0.2490	0.701 1	4.28%
20	Hindalco Industries Ltd.	Mar-18	0.432 0	0.2131	0.645 2	6.43%
20	Hindalco Industries Ltd.	Mar-19	0.428 4	0.2135	0.641 9	5.65%
20	Hindalco Industries Ltd.	Mar-20	0.461 1	0.2110	0.672 1	4.38%
21	Hindustan Unilever Ltd.	Mar-16	0.097 9	0.4677	0.565 5	27.53%
21	Hindustan Unilever Ltd.	Mar-17	0.101 5	0.4806	0.582 2	27.94%
21	Hindustan Unilever Ltd.	Mar-18	0.115	0.4869	0.602	28.58%

			3	2		
21	Hindustan Unilever Ltd.	Mar-19	0.133 8	0.4544	0.588 2	31.77%
21	Hindustan Unilever Ltd.	Mar-20	0.141 3	0.4564	0.597 7	33.50%
22	Housing Development Finance Corpn. Ltd.	Mar-16	0.467 7	0.3989	0.866 6	7.04%
22	Housing Development Finance Corpn. Ltd.	Mar-17	0.518 1	0.3483	0.866 3	6.40%
22	Housing Development Finance Corpn. Ltd.	Mar-18	0.588 4	0.2424	0.830 8	5.49%
22	Housing Development Finance Corpn. Ltd.	Mar-19	0.599 6	0.2236	0.823 2	5.87%
22	Housing Development Finance Corpn. Ltd.	Mar-20	0.591 3	0.2282	0.819 5	6.61%
23	I C I C I Bank Ltd.	Mar-16	0.731 8	0.1625	0.894 3	4.87%
23	I C I C I Bank Ltd.	Mar-17	0.712 1	0.1773	0.889 3	4.67%
23	I C I C I Bank Ltd.	Mar-18	0.726 0	0.1706	0.896 6	3.84%
23	I C I C I Bank Ltd.	Mar-19	0.720 7	0.1821	0.902 8	3.60%
23	I C I C I Bank Ltd.	Mar-20	0.737 2	0.1687	0.906 0	4.04%
24	I T C Ltd.	Mar-16	0.050 1	0.1291	0.179 2	18.25%
24	I T C Ltd.	Mar-17	0.047 2	0.1279	0.175 1	18.54%
24	I T C Ltd.	Mar-18	0.034 1	0.1457	0.179 7	17.97%
24	I T C Ltd.	Mar-19	0.032 0	0.1413	0.173 3	17.89%
24	I T C Ltd.	Mar-20	0.027 8	0.1255	0.153 4	20.17%
25	Indian Oil Corpn. Ltd.	Mar-16	0.264 6	0.4221	0.686 7	5.91%
25	Indian Oil Corpn. Ltd.	Mar-17	0.153 0	0.5230	0.676 0	7.26%
25	Indian Oil Corpn. Ltd.	Mar-18	0.201 8	0.4615	0.663 2	7.33%
25	Indian Oil Corpn. Ltd.	Mar-19	0.241 2	0.4465	0.687 7	5.44%

25	Indian Oil Corpn. Ltd.	Mar-20	0.276 8	0.4554	0.732 1	0.50%
26	Indusind Bank Ltd.	Mar-16	0.825 9	0.0504	0.876 3	6.74%
26	Indusind Bank Ltd.	Mar-17	0.834 4	0.0502	0.884 6	6.27%
26	Indusind Bank Ltd.	Mar-18	0.857 1	0.0354	0.892 5	6.03%
26	Indusind Bank Ltd.	Mar-19	0.871 9	0.0322	0.904 1	6.01%
26	Indusind Bank Ltd.	Mar-20	0.855 5	0.0315	0.887 0	6.89%
27	Infosys Ltd.	Mar-16	0.004 9	0.1788	0.183 7	17.84%
27	Infosys Ltd.	Mar-17	0.004 6	0.1712	0.175 8	17.18%
27	Infosys Ltd.	Mar-18	0.011 3	0.1801	0.191 4	20.05%
27	Infosys Ltd.	Mar-19	0.013 1	0.2243	0.237 4	18.08%
27	Infosys Ltd.	Mar-20	0.065 3	0.2294	0.294 7	18.01%
28	J S W Steel Ltd.	Mar-16	0.506 3	0.2808	0.787 1	3.15%
28	J S W Steel Ltd.	Mar-17	0.455 9	0.3054	0.761 3	7.24%
28	J S W Steel Ltd.	Mar-18	0.433 3	0.2869	0.720 2	9.55%
28	J S W Steel Ltd.	Mar-19	0.376 4	0.3422	0.718 6	9.06%
28	J S W Steel Ltd.	Mar-20	0.430 1	0.3135	0.743 6	5.64%
29	Kotak Mahindra Bank Ltd.	Mar-16	0.746 3	0.1136	0.859 9	6.04%
29	Kotak Mahindra Bank Ltd.	Mar-17	0.743 8	0.1151	0.858 9	5.94%
29	Kotak Mahindra Bank Ltd.	Mar-18	0.740 3	0.1102	0.850 5	5.51%
29	Kotak Mahindra Bank Ltd.	Mar-19	0.737 6	0.1149	0.852 5	5.64%
29	Kotak Mahindra Bank Ltd.	Mar-20	0.735 9	0.1126	0.848 5	5.53%
30	Larsen & Toubro Ltd.	Mar-16	0.315	0.4401	0.756	6.07%

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30	Larsen & Toubro Ltd.	Mar-17	0.333 6	0.4172	0.750 8	6.13%
30	Larsen & Toubro Ltd.	Mar-18	0.316 5	0.4426	0.759 2	6.28%
30	Larsen & Toubro Ltd.	Mar-19	0.279 6	0.4769	0.756 6	6.70%
30	Larsen & Toubro Ltd.	Mar-20	0.286 1	0.4672	0.753 3	6.78%
31	Mahindra & Mahindra Ltd.	Mar-16	0.321 3	0.3611	0.682 5	5.83%
31	Mahindra & Mahindra Ltd.	Mar-17	0.349 7	0.3478	0.697 5	5.62%
31	Mahindra & Mahindra Ltd.	Mar-18	0.327 7	0.3568	0.684 5	7.52%
31	Mahindra & Mahindra Ltd.	Mar-19	0.353 7	0.3582	0.711 9	5.70%
31	Mahindra & Mahindra Ltd.	Mar-20	0.397 0	0.3258	0.722 8	2.66%
32	Maruti Suzuki India Ltd.	Mar-16	0.038 8	0.2547	0.293 6	12.59%
32	Maruti Suzuki India Ltd.	Mar-17	0.042 8	0.2519	0.294 7	14.12%
32	Maruti Suzuki India Ltd.	Mar-18	0.042 2	0.2552	0.297 4	13.31%
32	Maruti Suzuki India Ltd.	Mar-19	0.046 2	0.2208	0.267 0	11.78%
32	Maruti Suzuki India Ltd.	Mar-20	0.050 0	0.1773	0.227 2	8.90%
33	N T P C Ltd.	Mar-16	0.471 1	0.1459	0.617 0	5.82%
33	N T P C Ltd.	Mar-17	0.461 7	0.1653	0.627 0	5.19%
33	N T P C Ltd.	Mar-18	0.478 5	0.1645	0.643 0	4.82%
33	N T P C Ltd.	Mar-19	0.479 2	0.2128	0.692 0	4.88%
33	N T P C Ltd.	Mar-20	0.526 0	0.1722	0.698 2	4.40%
34	Nestle India Ltd.	Mar-16	0.306 7	0.2392	0.545 9	9.13%
34	Nestle India Ltd.	Mar-17	0.331 6	0.1971	0.528 7	15.68%

34	Nestle India Ltd.	Mar-18	0.346 1	0.1991	0.545 2	16.30%
34	Nestle India Ltd.	Mar-19	0.331 1	0.2249	0.556 0	19.47%
34	Nestle India Ltd.	Mar-20	0.432 8	0.2991	0.731 8	27.36%
35	Oil & Natural Gas Corpn. Ltd.	Mar-16	0.335 0	0.1513	0.486 3	4.00%
35	Oil & Natural Gas Corpn. Ltd.	Mar-17	0.308 5	0.2728	0.581 3	6.04%
35	Oil & Natural Gas Corpn. Ltd.	Mar-18	0.337 0	0.2462	0.583 2	5.26%
35	Oil & Natural Gas Corpn. Ltd.	Mar-19	0.342 9	0.2377	0.580 5	6.34%
35	Oil & Natural Gas Corpn. Ltd.	Mar-20	0.394 4	0.2130	0.607 5	2.77%
36	Power Grid Corpn. of India Ltd.	Mar-16	0.624 7	0.1478	0.772 5	5.54%
36	Power Grid Corpn. of India Ltd.	Mar-17	0.627 1	0.1393	0.766 4	6.22%
36	Power Grid Corpn. of India Ltd.	Mar-18	0.620 4	0.1449	0.765 4	6.51%
36	Power Grid Corpn. of India Ltd.	Mar-19	0.624 8	0.1494	0.774 3	6.95%
36	Power Grid Corpn. of India Ltd.	Mar-20	0.628 0	0.1354	0.763 4	6.82%
37	Reliance Industries Ltd.	Mar-16	0.301 3	0.3080	0.609 3	5.36%
37	Reliance Industries Ltd.	Mar-17	0.296 6	0.3297	0.626 4	4.64%
37	Reliance Industries Ltd.	Mar-18	0.251 7	0.3845	0.636 1	5.30%
37	Reliance Industries Ltd.	Mar-19	0.289 0	0.3166	0.605 6	5.48%
37	Reliance Industries Ltd.	Mar-20	0.253 7	0.3542	0.607 9	5.11%
38	Shree Cement Ltd.	Mar-16	0.154 3	0.1227	0.277 0	12.86%
38	Shree Cement Ltd.	Mar-17	0.134 0	0.1778	0.311 9	13.11%
38	Shree Cement Ltd.	Mar-18	0.216 9	0.1959	0.412 8	9.96%
38	Shree Cement Ltd.	Mar-19	0.234	0.1377	0.372	7.81%

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38	Shree Cement Ltd.	Mar-20	0.166 4	0.1712	0.337 6	9.17%
39	State Bank of India	Mar-16	0.852 1	0.0872	0.939 3	5.06%
39	State Bank of India	Mar-17	0.853 2	0.0818	0.935 1	4.32%
39	State Bank of India	Mar-18	0.854 8	0.0803	0.935 0	3.94%
39	State Bank of India	Mar-19	0.862 6	0.0755	0.938 1	4.09%
39	State Bank of India	Mar-20	0.859 3	0.0790	0.938 3	4.27%
40	Sun Pharmaceutical Inds. Ltd.	Mar-16	0.102 1	0.2376	0.339 7	10.62%
40	Sun Pharmaceutical Inds. Ltd.	Mar-17	0.057 8	0.2924	0.350 2	13.13%
40	Sun Pharmaceutical Inds. Ltd.	Mar-18	0.047 9	0.3083	0.356 3	4.61%
40	Sun Pharmaceutical Inds. Ltd.	Mar-19	0.053 4	0.2673	0.320 7	5.67%
40	Sun Pharmaceutical Inds. Ltd.	Mar-20	0.063 1	0.2307	0.293 7	6.44%
41	Tata Consultancy Services Ltd.	Mar-16	0.023 8	0.1800	0.203 8	27.17%
41	Tata Consultancy Services Ltd.	Mar-17	0.026 4	0.1432	0.169 6	25.31%
41	Tata Consultancy Services Ltd.	Mar-18	0.030 8	0.1713	0.202 1	24.19%
41	Tata Consultancy Services Ltd.	Mar-19	0.030 9	0.1954	0.226 3	27.33%
41	Tata Consultancy Services Ltd.	Mar-20	0.082 9	0.2255	0.308 4	27.23%
42	Tata Motors Ltd.	Mar-16	0.328 1	0.3877	0.715 8	5.45%
42	Tata Motors Ltd.	Mar-17	0.391 6	0.4057	0.797 3	3.31%
42	Tata Motors Ltd.	Mar-18	0.299 8	0.4210	0.720 7	3.06%
42	Tata Motors Ltd.	Mar-19	0.356 2	0.4554	0.811 6	-7.60%
42	Tata Motors Ltd.	Mar-20	0.391 4	0.4195	0.811 0	-1.40%

43	Tata Steel Ltd.	Mar-16	0.478 1	0.2715	0.749 6	2.16%
43	Tata Steel Ltd.	Mar-17	0.481 4	0.2914	0.772 8	0.52%
43	Tata Steel Ltd.	Mar-18	0.441 5	0.2678	0.709 3	10.80%
43	Tata Steel Ltd.	Mar-19	0.435 6	0.2640	0.699 6	6.96%
43	Tata Steel Ltd.	Mar-20	0.452 2	0.2481	0.700 4	3.35%
44	Tech Mahindra Ltd.	Mar-16	0.105 4	0.2621	0.367 4	13.11%
44	Tech Mahindra Ltd.	Mar-17	0.113 9	0.2567	0.370 5	10.86%
44	Tech Mahindra Ltd.	Mar-18	0.070 9	0.3101	0.381 0	12.63%
44	Tech Mahindra Ltd.	Mar-19	0.040 8	0.3568	0.397 6	13.02%
44	Tech Mahindra Ltd.	Mar-20	0.085 2	0.3367	0.421 9	10.66%
45	Titan Company Ltd.	Mar-16	0.022 7	0.4327	0.455 4	11.40%
45	Titan Company Ltd.	Mar-17	0.023 1	0.4753	0.498 4	8.61%
45	Titan Company Ltd.	Mar-18	0.017 0	0.4517	0.468 7	12.09%
45	Titan Company Ltd.	Mar-19	0.014 2	0.4733	0.487 5	12.16%
45	Titan Company Ltd.	Mar-20	0.091 2	0.4218	0.513 0	12.13%
46	U P L Ltd.	Mar-16	0.166 1	0.4925	0.658 7	9.02%
46	U P L Ltd.	Mar-17	0.285 8	0.3549	0.640 7	11.27%
46	U P L Ltd.	Mar-18	0.265 6	0.3420	0.607 6	11.58%
46	U P L Ltd.	Mar-19	0.446 5	0.2712	0.717 7	3.82%
46	U P L Ltd.	Mar-20	0.432 9	0.2496	0.682 5	5.22%
47	Ultratech Cement Ltd.	Mar-16	0.208 8	0.2741	0.482 9	7.36%
47	Ultratech Cement Ltd.	Mar-17	0.245	0.1925	0.438	7.74%



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47	Ultratech Cement Ltd.	Mar-18	0.353 1	0.1800	0.533 2	5.90%
47	Ultratech Cement Ltd.	Mar-19	0.377 2	0.1802	0.557 4	5.31%
47	Ultratech Cement Ltd.	Mar-20	0.315 1	0.1888	0.503 9	9.56%
48	Wipro Ltd.	Mar-16	0.064 6	0.2996	0.364 2	12.48%
48	Wipro Ltd.	Mar-17	0.064 1	0.2873	0.351 4	10.98%
48	Wipro Ltd.	Mar-18	0.089 7	0.2825	0.372 2	10.88%
48	Wipro Ltd.	Mar-19	0.064 7	0.2574	0.322 1	11.46%
48	Wipro Ltd.	Mar-20	0.061 1	0.2642	0.325 3	12.50%