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RESEARCH ARTICLE

FINANCIAL PERFORMANCE OF NBFC'S IN INDIA: CORRELATION & REGRESSION ANALYSIS

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ABSTRACT

This study is conducted to assess the financial performance of NBFC's in India using Correlation and Regression analysis. The study is an econometric one that considers the samples of various types of NBFC's. The main categorisations of the NBFC's are Loan Companies, Investment companies, Infrastructure finance companies, and Asset finance companies. Here, 50 NBFC's were chosen in total with 10 companies in each category. For the section of asset finance, it was further divided into subdivisions such as hire purchase and equipment leasing companies.

Key Words:

NBFC, Financial Performance

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INTRODUCTION

This study is conducted to assess the financial performance of NBFC's in India using Correlation and Regression analysis. The study is an econometric one that considers the samples of various types of NBFC's. The main categorisations of the NBFC's are Loan Companies, Investment companies, Infrastructure finance companies, and Asset finance companies. Here, 50 NBFC's were chosen in total with 10 companies in each category. For the section of asset finance, it was further divided into subdivisions such as hire purchase and equipment leasing companies. Given in the table below is the list of companies that were chosen for the purpose of this study.

Period of study: Obtaining the datasets for the purpose of the study involved a comprehensive search of the databases of IBA, website of RBI and SEBI bulletins, data bank of CMIE, reports and statistical data and tables published on NBFC's in different journals. The study uses the (balance sheet) data for 15 years from the year 2001 to 2015. This period was chosen to represent the upward trend of NBFC's which occurred most in this period of time. This disaggregate study thus takes place at a company level, with the selection of the companies being done based on the availability of relevant data. All the companies chosen above are listed in the RBI's list of NBFC's in India.

Variables of the Study: The following variables have been used for analysing the data in the present study.

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Independent Variables:

- Operating profit margin
- Net profit ratio
- Current ratio
- Debt equity ratio
- Fixed asset turnover ratio
- Asset turnover ratio

Dependent Variables

Return on assets

Descriptive Statistics: Descriptive statistics gives the summary of the data and is the representation of entire data. The descriptive statistics provides the information of minimum, maximum and the average value of study parameters. Descriptive statistical measures such as minimum, maximum, mean and standard deviation of financial parameters of NBFC are depicted in table 1.4.1. From the analysis, it is observed that the average value of all 50 NBFC companies' net profit ratio was 0.54 followed by, current ratio was 19.02, fixed asset turnover ratio was 153.4, asset turnover ratio was 0.59 and return on assets was 0.11. On the basis of the current ratio, the performance of the NBFC was good. However, operating profit ratio and debt-equity ratio were negative. It reveals that NBFC companies did not gain the operating profit during 2001-2015.

Correlation and Regression Analysis: Correlation and regression analysis generally provide the association information between the study parameters (variables).

Specifically, linear relationship between two variables can be ascertained through correlation analysis while regression analysis gives the cause and effect relationship between the variables.

relationship between the independent variables (Operating profit margin, Net profit ratio, Current ratio, Debt equity ratio, Fixed asset turnover ratio, Asset turnover ratio) and dependent variable (Return on assets) is examined.

Table 1. Categories of NBFC's

| Categories | NBFC companies |
|----------------------------------|--|
| Loan Companies | Bajaj Holdings |
| Zean companies | Coral India Finance and Housing |
| | LIC Housing Finance |
| | Dewan housing |
| | GIC housing finance |
| | IFCI Limited |
| | India Infoline (IIFL) |
| | India Home Loans |
| | M&M Financials |
| | GRUH Finance |
| Investment companies | Blue chip investments |
| investment companies | Fortis Healthcare Holdings Pvt. Ltd. |
| | |
| | RELIGARE ENTERPRISES LIMITED |
| | TCI Finance |
| | GSB finance |
| | MukeshBabu Financial Services |
| | JM FINANCIAL LIMITED |
| | Shree Global |
| | Reliance Capital |
| | Power Finance Corporation Ltd |
| Infrastructure finance companies | Rural Electricity Corp. |
| | Shristi infrastructure development corporation limited |
| | Marg projects and infrastructure limited |
| | GMR infrastructure |
| | Crest ventures |
| | Tourism Finance Corp of India |
| | GVK Power and infrastructure |
| | Power Finance corporation |
| | Centrum finance |
| | Nalin Lease finance |
| | Ceejay Finance Ltd |
| Asset finance companies | Ashirwad Capital |
| • | Escorts finance |
| | Shriram transport finance company limited |
| | Cholamandalam investment and finance company limited |
| | Lkp finance |
| | Sakthi finance limited |
| Hire-purchase companies | Kailash auto finance ltd |
| Equipment leasing companies | Manapuram Asset finance Limited |
| | VLS finance Ltd |
| | SUNDARAM FINANCE LIMITED |
| | Magma Fincorp Ltd |
| | Swastika Investsmart |
| | Upasana finance |
| | Pioneer investcorp |
| | |
| | Choice Financial services Glance finance ltd |
| | |
| | Golden Goenka |
| | Capri global |
| | Indus finance Ltd |

Table 2. Descriptive statistics of financial ratios of NBFC

| | Minimum | Maximum | Mean | SD |
|-----------------------------------|-------------|------------|----------|-----------|
| Net profit ratio (NPR) | -173.50 | 52.08 | .54 | 7.69 |
| Current Ratio (CR) | .00 | 1211.00 | 19.02 | 103.46 |
| Operating profit ratio (OPR) | -19000.00 | 2700.00 | -6.96 | 834.57 |
| Debt-Equity ratio (DER) | -6518647.00 | 7898333.99 | -4694.95 | 767077.25 |
| Fixed asset turnover ratio (FATR) | -2.35 | 7778.00 | 153.36 | 726.58 |
| Asset turnover ratio (ATR) | -1.68 | 59.03 | .59 | 3.19 |
| Return on Assets (ROA) | -12.00 | 7.72 | .11 | .62 |

Source: Calculated by Author

Regression analysis is used in the context of the present study in order to identify the factors that account for the failure and success of the NBFC's with regard to their viability, profitability, granting loans and advances, recovery of loans with the amount of NPA. In regression analysis, the

This is important as the objectives of the present research necessitate identification of the relationship between the dependent and independent variables. Regression analysis uses range from the most general problems to the most specific in each instance leading relating to a factor (or factors) to a

specific outcome. In statistics, regression analysis includes any technique for modelling and analysing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. More specifically, regression analysis helps one understand how the typical value of the dependent variable is changes when any of the independent variables are held fixed. Less commonly, the focus is on a quantile or other location parameter of the conditional distribution of the dependent variable. In all cases, the estimation target is a function of the independent variables called the regression function. In the regression analysis, it is also of interest to characterise the variation of the dependent variable around the regression function. In regression analysis, it is also of interest to characterise the variation of the dependent variable around the regression function, which can be described by a probability distribution.

The profitability ratios such as net profit ratio and operating profit ratio were a positive relation with one another. Also, the profitability ratios were a positive relation with return on assets (P<0.01). It could be concluded that profitability ratios increase in value, it leads to enhance the return on assets. Likewise, the fixed asset turnover ratio was a positive relation with asset turnover ratio (p<0.01) and return on assets (p<0.01). Further, asset turnover ratio was a strong positive correlation with return on assets (p<0.01). However, liquidity ratio and solvency ratio did not correlate with any profitability and efficiency ratio.

Hence the alternative hypothesis "There is a significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of loan companies" is partially accepted

Table 3. Correlation analysis of financial ratios of loan companies

| | | NPR | CR | OPR | DER | FATR | ATR | ROA |
|-------|---------|-----|------|--------|------|------|--------|--------|
| NPR | r-value | 1 | .017 | .961** | 018 | 060 | 099 | .426** |
| INFIX | p-value | | .841 | .000 | .870 | .499 | .230 | .000 |
| CR | r-value | | 1 | .031 | .002 | .102 | 085 | 110 |
| CK | p-value | | | .709 | .983 | .256 | .312 | .189 |
| OPR | r-value | | | 1 | 018 | 061 | 098 | .422** |
| OPK | p-value | | | | .875 | .489 | .234 | .000 |
| DED | r-value | | | | 1 | .026 | .062 | .050 |
| DER | p-value | | | | | .828 | .583 | .659 |
| FATR | r-value | | | | | 1 | .490** | .247** |
| FAIK | p-value | | | | | | .000 | .004 |
| ATR | r-value | | | | | | 1 | .704** |
| AIK | p-value | | | | | | | .000 |
| ROA | r-value | | | | | | | 1 |
| KOA | p-value | | | | | | | |

Source: Calculated by Author

Where NPR - Net profit ratio, OPR - Operating profit ratio, CR - Current Ratio, DER - Debt equity ratio, FATR - Fixed asset turnover ratio, ATR - Asset turnover ratio and ROA - Return on assets.

Table 4. Influence of profitability, liquidity, solvency and efficiency ratios on financial performance of loan companies

| Independent variables | Unstandardi | Unstandardized Coefficients | | p-value | Collinearity s | statistics |
|-----------------------------------|-------------|-----------------------------|--------|---------|----------------|------------|
| | Beta (β) | S.E | | | Tolerance | VIF |
| (Constant) | .007 | .018 | .373 | .710 | | |
| Net profit ratio (NPR) | .108 | .085 | 1.271 | .208 | .028 | 36.013 |
| Operating profit ratio (OPR) | .000 | .001 | 379 | .706 | .029 | 34.883 |
| Current Ratio (CR) | .000 | .000 | 242 | .810 | .941 | 1.062 |
| Debt-Equity ratio (DER) | .000 | .000 | .333 | .740 | .994 | 1.006 |
| Fixed asset turnover ratio (FATO) | .000 | .000 | -2.458 | .017* | .852 | 1.173 |
| Asset turnover ratio (ATR) | .256 | .021 | 11.926 | .000** | .629 | 1.590 |

Source: Calculated by Author. Adjusted R-square: 0.684; *p<0.05, **p<0.01. Dependent Variable: Return on Assets (ROA)

Table 5. Correlation analysis of financial ratios of investment companies of NBFC

| | | NPR | CR | OPR | DER | EATD | A TD | ROA |
|------|---------|-----|------|-------|------|------|------|--------|
| | | NFK | | | | | | |
| NPR | r-value | 1 | 018 | 293** | .036 | 046 | 040 | .343** |
| MIK | p-value | | .837 | .001 | .767 | .626 | .644 | .000 |
| CR | r-value | | 1 | .044 | .037 | .018 | 035 | 033 |
| CK | p-value | | | .616 | .759 | | .683 | .700 |
| OPR | r-value | | | 1 | 024 | 106 | 024 | .018 |
| OPK | p-value | | | | .845 | .262 | .779 | .834 |
| DER | r-value | | | | 1 | .027 | .028 | .018 |
| DEK | p-value | | | | | .840 | .814 | .878 |
| FATR | r-value | | | | | 1 | .092 | 074 |
| FAIK | p-value | | | | | | .332 | .434 |
| ATR | r-value | | | | | | 1 | 122 |
| AIK | p-value | | | | | | | .150 |
| ROA | r-value | | | | | | | 1 |
| KOA | p-value | | | | | | | |

Source: Calculated by Author. NPR - Net profit ratio, OPR - Operating profit ratio, CR - Current Ratio, DER - Debt equity ratio, FATR - Fixed asset turnover ratio, ATR - Asset turnover ratio and ROA - Return on assets.

Null hypothesis: H0 - There is no significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of loan companies: Table above provides the correlation analysis of financial parameters of loan companies of Indian NBFC. The effect of profitability, liquidity, solvency and efficiency ratios on the financial performance of loan companies is shown in table 5. In the analysis, the financial performance of the companies is computed on the basis of return on assets. The coefficient of determination (Adjusted R-square = 0.684)

connoted that around 68 per cent of change in the financial performance of loan companies depended on the independent variables such as profitability, liquidity, solvency and efficiency ratios. The significance values (p<0.05) indicated that efficiency ratios such as fixed asset turnover ratio and asset turnover ratio did the significant influence on the performance of loan companies of Indian NBFC while the profitability ratios, liquidity ratio and solvency ratio (p>0.05) did not a significant influence on the financial performance. The regression model for the loan companies of NBFC can be written in the following manner:

ROA= 0.007 + 0.108 (NPR) +0.256 (ATR)

Hence, the null hypothesis is accepted. However, some variables such as Fixed asset turnover ratio and Fixed asset turnover ratio are found to impact Return on Asserts.

on assets. In the regression analysis, financial performance (ROA) of investment companies of NBFC was 55 per cent depend on their profitability, liquidity, solvency and efficiency ratios. Among the ratios, net profit ratio made the significant impact on the financial performance of investment companies while the other ratios like operating profit ratio, current ratio, debt-equity ratio, fixed asset turnover ratio and asset turnover ratio did not a significant influence. In addition, the variation inflation factor (VIF) of all independent variables was around 1. It could be inferred that there was no multi-collinearity problem within the independent variables. Therefore, the regression coefficients possessed the less variance. It could increase the precision of the results. Financial performance of investment companies of NBFC can be denoted as the following manner:

ROA = 0.062 + 0.019 (NPR) + 0.001 (ATR)

Table 6. Influence of profitability, liquidity, solvency and efficiency on financial performance of investment companies

| Independent variables | Unstandardiz | zed Coefficients | t-value | p-value | Collinearity | Collinearity statistics | |
|-----------------------------------|--------------|------------------|---------|---------|--------------|-------------------------|--|
| | Beta (β) | S.E | | | Tolerance | VIF | |
| (Constant) | .062 | .021 | 2.925 | .005 | | | |
| Net profit ratio (NPR) | .019 | .002 | 8.102 | .000** | .963 | 1.038 | |
| Operating profit ratio (OPR) | .000 | .000 | 1.666 | .102 | .932 | 1.073 | |
| Current Ratio (CR) | .000 | .001 | 522 | .604 | .983 | 1.017 | |
| Debt-Equity ratio (DER) | .000 | .000 | 011 | .992 | .991 | 1.010 | |
| Fixed asset turnover ratio (FATR) | .000 | .000 | 294 | .770 | .983 | 1.017 | |
| Asset turnover ratio (ATR) | .001 | .004 | .183 | .856 | .976 | 1.024 | |

Source: Calculated by Author .Adjusted R-square: 0.553; **p<0.01. Dependent Variable: Return on Assets.

Table 7. Correlation analysis of financial ratios of Infrastructure finance companies of NBFC

| | | NPR | CR | OPR | DER | FATR | ATR | ROA |
|------|---------|-----|------|--------|------|------|------|--------|
| NPR | r-value | 1 | .009 | .969** | .012 | .050 | .024 | .367** |
| | p-value | | .912 | .000 | .918 | .600 | .781 | .000 |
| CR | r-value | | 1 | .017 | 005 | 089 | .018 | .002 |
| | p-value | | | .837 | .966 | .343 | .834 | .982 |
| OPR | r-value | | | 1 | .015 | .045 | .042 | .343** |
| | p-value | | | | .895 | .637 | .622 | .000 |
| DER | r-value | | | | 1 | 065 | 013 | 010 |
| | p-value | | | | | .625 | .911 | .934 |
| FATR | r-value | | | | | 1 | .112 | .016 |
| | p-value | | | | | | .230 | .867 |
| ATR | r-value | | | | | | 1 | .782** |
| | p-value | | | | | | | .000 |
| ROA | r-value | | | | | | | 1 |
| | p-value | | | | | | | |

Source: Calculated by Author. NPR - Net profit ratio, OPR - Operating profit ratio, CR - Current Ratio, DER - Debt equity ratio, FATR - Fixed asset turnover ratio, ATR - Asset turnover ratio and ROA - Return on assets.

A Linear relationship between the financial parameters of investment companies of Indian NBFC is depicted in table above. The statistical significance values (p<0.01) interpreted that net profit ratio was correlated with operating profit ratio and return on assets. Further, the Pearson correlation coefficient (r-value) indicated that net profit ratio was a weak positive relation with return on assets (r=0.343) while it was a negative relation with operating profit ratio. But, the liquidity and solvency ratios of investment companies failed to reveal the significant relationship with the other financial ratios. Hence, the null hypothesis is accepted as significant relationship exists only between NPR and OPR, and NPR and ROA.

Null hypothesis: H0 - There is no significant impact of NPR, OPM CR, DER, FATR, and ATR on ROA for investment companies of NBFCs: Table above shows the regression analysis for the independent variables namely, profitability, liquidity, solvency and efficiency ratios of investment companies while the dependent variable is a return

Only NPR tends to impact ROA. Hence the null hypothesis is accepted. Table above provides the correlation analysis of financial ratios of infrastructure finance companies of NBFC. The findings revealed that net profit ratio was correlated with operation profit ratio and return on assets based on the 1 per cent level of significance. Additionally, the Pearson correlation coefficient indicated that net profit ratio was a strong positive correlation with operation profit ratio while it was a weak positive correlation with return on assets. Similarly, operation profit ratio and asset turnover ratio were a positive correlation with return on assets of infrastructure finance companies. Hence the alternative hypothesis, 'There is a significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of Infrastructure finance companies of NBFC' is partially accepted.

Null hypothesis: H0 - There is no significant impact of NPR, OPM CR, DER, FATR, and ATR on ROA for infrastructure finance NBFCs: Table above provides the

effect of profitability, liquidity, solvency and efficiency ratios on the financial performance of infrastructure finance companies of Indian NBFC. The coefficient of determination (Adjusted R-square = 0.684) specified that 64 per cent of the variation in the financial performance of infrastructure finance companies depended on the following independent variables namely, profitability, liquidity, solvency and efficiency ratios. Based on the significance values, net profit ratio and efficiency ratios such as fixed asset turnover ratio and asset turnover ratio did the significant impact on the performance of infrastructure finance companies of Indian NBFC while liquidity and solvency ratios (p>0.05) did not a significant influence on the financial performance (ROA). In the regression model, the multi-collinearity problem occurred in acceptable level (VIF<5).

Financial performance (ROA) as a function of independent variables can be written as,

ROA = 0.028 + 0.048 (NPR) - 0.001 (FATR) + 0.409 (ATR)

As three variables (NPR, FATR, and ATR) has significant impact on ROA, the alternative hypothesis, 'There is a significant impact of NPR, OPM CR, DER, FATR, ATR on ROA for infrastructure finance NBFCs' is accepted.

ratio (r=0.514) and asset turnover ratio (r=0.412). However, current ratio, debt-equity ratio and fixed asset turnover ratio of equipment leasing companies did not relation with any other financial ratios. Hence the null hypothesis is accepted.

Null hypothesis: H0 - There is no significant impact of NPR, OPM CR, DER, FATR, and ATR on ROA for equipment leasing companies of NBFC: The effect of profitability, liquidity, solvency and efficiency on the financial performance of equipment leasing companies of Indian NBFC is shown in table above. The statistical significance value clearly indicated that the independent variables namely, operating profit ratio and asset turnover ratio associated with the financial performance of the equipment leasing companies (p<0.05). However, the other independent variables namely, net profit ratio, current ratio, debt-equity ratio and fixed asset turnover ratio did not influence the financial performance significantly (p>0.05). The adjusted R-square value revealed that around 40 per cent of the changes in financial performance (ROA) of equipment leasing companies depended on the independent variables. Also, the multicollinearity problem between the independent variables was within the control limit (VIF<5).

Table 8. Influence of profitability, liquidity, solvency and efficiency on financial performance of infrastructure finance companies

| Independent variables | Unstandardize | ed Coefficients | d Coefficients t-value | | Collineari | ty statistics |
|-----------------------------------|---------------|-----------------|------------------------|--------|------------|---------------|
| | Beta (β) | S.E | | | Tolerance | VIF |
| (Constant) | .028 | .040 | .689 | .494 | | |
| Net profit ratio (NPR) | .048 | .021 | 2.301 | .026* | .366 | 2.735 |
| Operating profit ratio (OPR) | .000 | .000 | 992 | .326 | .366 | 2.732 |
| Current Ratio (CR) | .000 | .000 | 165 | .870 | .988 | 1.013 |
| Debt-Equity ratio (DER) | .000 | .000 | 083 | .934 | .991 | 1.009 |
| Fixed asset turnover ratio (FATR) | 001 | .000 | -2.196 | .033* | .945 | 1.058 |
| Asset turnover ratio (ATR) | .409 | .041 | 9.966 | .000** | .948 | 1.055 |

Source: Calculated by Author. Adjusted R-square: 0.642; *p<0.05, **p<0.01. Dependent Variable: Return on Assets

Table 9. Correlation analysis of financial ratios of equipment leasing companies of NBFC

| | | NPR | CR | OPR | DER | FATR | ATR | ROA |
|-------|---------|-----|------|--------|------|------|------|--------|
| NIDD | r-value | 1 | 007 | .660** | 076 | 082 | 079 | .450** |
| NPR | p-value | | .937 | .000 | .465 | .374 | .355 | .000 |
| CD | r-value | | 1 | .015 | .005 | 056 | .089 | 027 |
| CR | p-value | | | .859 | .964 | .541 | .294 | .751 |
| OPR — | r-value | | | 1 | 093 | 023 | 014 | .514** |
| | p-value | | | | .371 | .807 | .865 | .000 |
| DER | r-value | | | | 1 | .056 | .045 | .022 |
| DEK | p-value | | | | | .620 | .667 | .834 |
| FATR | r-value | | | | | 1 | .152 | .078 |
| FAIK | p-value | | | | | | .097 | .396 |
| A TD | r-value | | | | | | 1 | .412** |
| ATR | p-value | | | | | | | .000 |
| ROA | r-value | | | | | | | 1 |
| KUA | p-value | | | | | | | |

Source: Calculated by Author. NPR - Net profit ratio, OPR - Operating profit ratio, CR - Current Ratio, DER - Debt equity ratio, FATR - Fixed asset turnover ratio, ATR - Asset turnover ratio and ROA - Return on assets.

Null hypothesis: H0 - There is no significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of equipment leasing companies of NBFC: Correlation analysis of financial ratios of equipment leasing companies of Indian NBFC is provided in table above. From the statistical significance values (p<0.01), it is observed that there was some relation between net profit ratio and operating profit ratio. Also, the Pearson correlation coefficient (r-value) interpreted that net profit ratio was a positive relation with operating profit ratio (r=0.660). Analogously, net profit ratio was a positive correlation with return on assets (r=0.450). Return on assets did the positive relation with operating profit

ROA as a function of profitability, liquidity, solvency and efficiency is as follows:

ROA = -0.174 + 0.160 (NPR) + 0.003 (OPR) + 0.263 (ATR)

Only two variables are found to have significant impact on ROA. Hence the null hypothesis is selected.

Null hypothesis: H09- There is no significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of hire-purchase companies of NBFC: Table above shows correlation analysis of financial ratios of hire-purchase

Table 10. Influence of profitability, liquidity, solvency and efficiency on financial performance of equipment leasing companies

| Independent variables | Unstandardize | Unstandardized Coefficients | | p-value | Collinearity statistics | |
|-----------------------------------|---------------|-----------------------------|---------|---------|-------------------------|-------|
| independent variables | Beta (β) | S.E | t-value | p-value | Tolerance | VIF |
| (Constant) | 174 | .055 | -3.180 | .002 | | |
| Net profit ratio (NPR) | .160 | .108 | 1.484 | .142 | .340 | 2.939 |
| Operating profit ratio (OPR) | .003 | .001 | 2.334 | .022* | .339 | 2.951 |
| Current Ratio (CR) | .000 | .000 | .010 | .992 | .972 | 1.029 |
| Debt-Equity ratio (DER) | .000 | .000 | .484 | .630 | .989 | 1.011 |
| Fixed asset turnover ratio (FATR) | .000 | .000 | .941 | .350 | .982 | 1.019 |
| Asset turnover ratio (ATR) | .263 | .043 | 6.173 | .000** | .925 | 1.081 |

Source: Calculated by Author. Adjusted R-square: 0.403; *p<0.05, **p<0.01. Dependent Variable: Return on Assets

Table 11. Correlation analysis of financial ratios of hire-purchase companies of NBFC

| | | NPR | CR | OPR | DER | FATR | ATR | ROA |
|------|---------|-----|------|-------|------|------|--------|------|
| NPR | r-value | 1 | 025 | 234** | .052 | 016 | 023 | 089 |
| NPK | p-value | | .776 | .005 | .631 | .865 | .787 | .285 |
| CR | r-value | | 1 | .086 | 040 | .035 | .002 | .038 |
| CK | p-value | | | .332 | .717 | .709 | .979 | .661 |
| OPR | r-value | | | 1 | .014 | .029 | .019 | .021 |
| OPK | p-value | | | | .897 | .758 | .818 | .798 |
| | r-value | | | | 1 | 024 | 016 | .027 |
| DEK | p-value | | | | | | .877 | .800 |
| FATR | r-value | | | | | 1 | .484** | 024 |
| FAIK | p-value | | | | | | .000 | .800 |
| ATR | r-value | | | | | | 1 | 011 |
| AIK | p-value | | | | | | | .893 |
| ROA | r-value | • | | | | | | 1 |
| KOA | p-value | | | | | | | |

Source: Calculated by Author. NPR - Net profit ratio, OPR - Operating profit ratio, CR - Current Ratio, DER - Debt equity ratio, FATR - Fixed asset turnover ratio, ATR - Asset turnover ratio and ROA - Return on assets.

Table 12. Influence of profitability, liquidity, solvency and efficiency on financial performance of hire-purchase companies

| Independent variables | Unstandar | dized Coefficients | t-value | p-value | Collinearity | statistics |
|-----------------------------------|-----------|--------------------|---------|---------|--------------|------------|
| independent variables | Beta (β) | S.E | t-value | p-value | Tolerance | VIF |
| (Constant) | .158 | .031 | 5.061 | .000 | | |
| Net profit ratio (NPR) | .064 | .009 | 7.087 | .000** | .540 | 1.850 |
| Operating profit ratio (OPR) | .000 | .000 | -4.415 | .000** | .537 | 1.861 |
| Current Ratio (CR) | 003 | .003 | -1.184 | .241 | .982 | 1.018 |
| Debt-Equity ratio (DER) | .000 | .000 | .289 | .774 | .994 | 1.006 |
| Fixed asset turnover ratio (FATR) | .000 | .000 | .304 | .762 | .750 | 1.333 |
| Asset turnover ratio (ATR) | 007 | .008 | 923 | .360 | .747 | 1.339 |

Source: Calculated by Author. Adjusted R-square: 0.413; **p<0.01. Dependent Variable: Return on Assets

Table 13. Summary Table

| Hypothesis | Type of Statistical test used | Accept/ Reject |
|---|-------------------------------|----------------|
| There is no significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of loan | Correlation | Partially |
| companies | | Accepted |
| There is no significant impact of NPR, OPM CR, DER, FATR, ATR on ROA for loan companies | Regression | Accepted |
| There is no significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of investment companies of NBFCs | Correlation | Accepted |
| There is no significant impact of NPR, OPM CR, DER, FATR, and ATR on ROA for investment companies of NBFCs | Regression | Accepted |

Source: Calculated by Author

companies of NBFC. The findings revealed that net profit ratio and fixed asset turnover ratio were a relationship with operation profit ratio and asset turnover ratio respectively. Further, the Pearson correlation coefficient connoted that net profit ratio was weak negative correlation with operation profit ratio and fixed asset turnover ratio was a positive correlation with assets turnover ratio. Similarly, operation profit ratio and asset turnover ratio were a positive correlation with return on assets of infrastructure finance companies. However, current ratio, debt-equity ratio and return on assets failed to show the significant relationship with other financial ratios. Hence, the null hypothesis is selected.

Null hypothesis: H010- There is no significant impact of NPR, OPM CR, DER, FATR, and ATR on ROA for hire-purchase companies of NBFC: Table above presents the regression analysis for the independent variables namely,

profitability, liquidity, solvency and efficiency ratios of investment companies and the dependent variable is a return on assets. In the regression analysis, financial performance (ROA) of hire-purchase companies of NBFC was 41 per cent depend on their profitability, liquidity, solvency and efficiency ratios. Among the ratios, the profitability ratios namely, net profit ratio and operating profit ratio did the significant influence on the financial performance of hire-purchase companies while the other ratios like current ratio, debt-equity ratio, fixed asset turnover ratio and asset turnover ratio did not a significant influence. In addition, the variation inflation factor (VIF) of all independent variables was around 1. It could be concluded that there was no multi-collinearity problem within the independent variables. Therefore, the regression coefficients possessed the less variance. Then, it inferred that the precision of the results was good. Only two variables (NPR and OPR) are found to have significant impact

on ROA and hence the null hypothesis is accepted. The regression equation for the financial performance (ROA) of hire-purchase companies of NBFC can be written as follows:

ROA = 0.158 + 0.064 (NPR) - 0.003 (CR) - 0.007 (ATR)

SUMMARY OF FINDINGS

Correlation and regression analysis generally provide the association information between the study parameters (variables). Specifically, linear relationship between two variables can be ascertained through correlation analysis while regression analysis gives the cause and effect relationship between the variables. The profitability ratios such as net profit ratio and operating profit ratio were a positive relation with one another. Also, the profitability ratios were a positive relation with return on assets (P<0.01). It could be concluded that profitability ratios increase in value, it leads to enhance the return on assets. Likewise, the fixed asset turnover ratio was a positive relation with asset turnover ratio (p<0.01) and return on assets (p<0.01). Further, asset turnover ratio was a strong positive correlation with return on assets (p<0.01). However, liquidity ratio and solvency ratio did not correlate with any profitability and efficiency ratio. In the analysis, the financial performance of the companies is computed on the basis of return on assets. The coefficient of determination (Adjusted R-square = 0.684) connoted that around 68 per cent of change in the financial performance of loan companies depended on the independent variables such as profitability, liquidity, solvency and efficiency ratios. The significance values (p<0.05) indicated that efficiency ratios such as fixed asset turnover ratio and asset turnover ratio did the significant influence on the performance of loan companies of Indian NBFC while the profitability ratios, liquidity ratio and solvency ratio (p>0.05) did not a significant influence on the financial performance.

A Linear relationship between the financial parameters of investment companies of Indian NBFC is depicted in table above. The statistical significance values (p<0.01) interpreted that net profit ratio was correlated with operating profit ratio and return on assets. Further, the Pearson correlation coefficient (r-value) indicated that net profit ratio was a weak positive relation with return on assets (r=0.343) while it was a negative relation with operating profit ratio. But, the liquidity and solvency ratios of investment companies failed to reveal the significant relationship with the other financial ratios. Hence, the null hypothesis is accepted as significant relationship exists only between NPR and OPR, and NPR and ROA. financial performance (ROA) of investment companies of NBFC was 55 per cent depend on their profitability, liquidity, solvency and efficiency ratios.

Among the ratios, net profit ratio made the significant impact on the financial performance of investment companies while the other ratios like operating profit ratio, current ratio, debtequity ratio, fixed asset turnover ratio and asset turnover ratio did not a significant influence. In addition, the variation inflation factor (VIF) of all independent variables was around 1. It could be inferred that there was no multi-collinearity problem within the independent variables. Therefore, the regression coefficients possessed the less variance. It could increase the precision of the results. The findings revealed that net profit ratio was correlated with operation profit ratio and return on assets based on the 1 per cent level of significance.

Additionally, the Pearson correlation coefficient indicated that net profit ratio was a strong positive correlation with operation profit ratio while it was a weak positive correlation with return on assets. Similarly, operation profit ratio and asset turnover ratio were a positive correlation with return on assets of infrastructure finance companies. Hence the alternative hypothesis, 'There is a significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of Infrastructure finance companies of NBFC' is partially accepted. The coefficient of determination (Adjusted R-square = 0.684) specified that 64 per cent of the variation in the financial performance of infrastructure finance companies depended on the following independent variables namely, profitability, liquidity, solvency and efficiency ratios. Based on the significance values, net profit ratio and efficiency ratios such as fixed asset turnover ratio and asset turnover ratio did the significant impact on the performance of infrastructure finance companies of Indian NBFC while liquidity and solvency ratios (p>0.05) did not a significant influence on the financial performance (ROA). In the regression model, the multicollinearity problem occurred in acceptable level (VIF<5). The statistical significance value clearly indicated that the independent variables namely, operating profit ratio and asset turnover ratio associated with the financial performance of the equipment leasing companies (p<0.05). However, the other independent variables namely, net profit ratio, current ratio, debt-equity ratio and fixed asset turnover ratio did not influence the financial performance significantly (p>0.05). The adjusted R-square value revealed that around 40 per cent of the changes in financial performance (ROA) of equipment leasing companies depended on the independent variables. Also, the multi-collinearity problem between the independent variables was within the control limit (VIF<5).

From the statistical significance values (p<0.01), it is observed that there was some relation between net profit ratio and operating profit ratio. Also, the Pearson correlation coefficient (r-value) interpreted that net profit ratio was a positive relation with operating profit ratio (r=0.660). Analogously, net profit ratio was a positive correlation with return on assets (r=0.450). Return on assets did the positive relation with operating profit ratio (r=0.514) and asset turnover ratio (r=0.412). However, current ratio, debt-equity ratio and fixed asset turnover ratio of equipment leasing companies did not relation with any other financial ratios. The findings revealed that net profit ratio and fixed asset turnover ratio were a relationship with operation profit ratio and asset turnover ratio respectively. Further, the Pearson correlation coefficient connoted that net profit ratio was weak negative correlation with operation profit ratio and fixed asset turnover ratio was a positive correlation with assets turnover ratio. Similarly, operation profit ratio and asset turnover ratio were a positive correlation with return on assets of infrastructure finance companies. However, current ratio, debt-equity ratio and return on assets failed to show the significant relationship with other financial ratios. Financial performance (ROA) of hire-purchase companies of NBFC was 41 per cent depend on their profitability, liquidity, solvency and efficiency ratios. Among the ratios, the profitability ratios namely, net profit ratio and operating profit ratio did the significant influence on the financial performance of hirepurchase companies while the other ratios like current ratio, debt-equity ratio, fixed asset turnover ratio and asset turnover ratio did not a significant influence. In addition, the variation inflation factor (VIF) of all independent variables was around

It could be concluded that there was no multi-collinearity problem within the independent variables. Therefore, the regression coefficients possessed the less variance. Then, it inferred that the precision of the results was good. The descriptive statistics reveal that the financial performance of NBFCs was good on the basis of current ratio. When In the case the loan companies, return on assets was a positive relationship with profitability and efficiency ratios such as net profit ratio, operating profit ratio, fixed asset turnover ratio and assets turnover ratio. Meanwhile, fixed asset turnover ratio and asset turnover ratio could regulate the financial performance of loan companies. Likewise, net profit ratio was a positive relationship with return on assets in the investment companies of Indian NBFCS and it has caused the good financial performance of the companies. In the infrastructure finance companies, net profit ratio has some positive relation with operating profit ratio, and return on assets. In addition, the performance of infrastructure finance companies of NBFC depended on the financial ratios such as net profit ratio, fixed asset turnover ratio and asset turnover ratio etc.

Similarly, the performance of equipment leasing companies depended on the operating profit ratio and asset turnover ratio while the performance of hire-purchase companies of NBFC only influenced by the profitability ratios, such as net profit ratio and operating profit ratio. Correlation statistical test was applied to analyse the significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of loan companies and it was partially accepted. The result of regression statistical test showed that there was no significant impact of NPR, OPM CR, DER, FATR, and ATR on ROA for loan companies. Then, there is no significant relationship between NPR, OPM CR, DER, FATR, ATR and ROA of investment companies of NBFCs according to the result of correlation statistical test. Further it was found that there is no significant impact of NPR, OPM CR, DER, FATR, and ATR on ROA for investment companies of NBFCs on the results of regression statistical test.

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