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A Comparative Analysis on Credit Risk Management in NBFC Sector and Its Impact on Their Market Capitalisation

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A B S T R A C T

Non banking financial companies are the companies registered under companies act, 1956. Its major function is to business loans and advances, acquisition of share/bonds/debentures/securities. It is regulated by Reserve bank of India. NBFC is all over the news since 2018 and is the biggest reason for the depressed economy. Credit risk management is a attempts to measure the probability of defaults of loans which means borrowers is not in the position to repay the accrued interest and the principle amount. It predicts the defaults earlier according to the circumstances, economic and financial position of the company. It is a practise of mitigating losses by understanding the adequacy of loan loss reserves at any given time and helps to plan ahead to tackle the negative outcome of the company.

Keywords:Credit risk,Market capitalisation,Loan

1. Introduction

Non banking finance companies (NBFC) form a important part of Indian financial markets and plays a important role in the growth of the country, employment generation and wealth creation of many businesses. It is engaged in the business of loans and advances, acquisition of shares, stock, debentures and bonds issued by government or local authority. It helps corporate to fulfil their need of financials as capital or for their operations. Some of the services offered by NBFC are as follows:

- Hire purchase services by NBFC: Suppose the a business owner wants to buy a vehicle but he is not in the position to pay the lump sum amount to pay the vehicle ,so some NFBC like Bajaj auto finance company and Hero Honda motor finance company which provide service to the buyer to pay in instalments and seller deliver the vehicle without transferring the ownership of the machine and later when the amount gets fully paid the buyer got the ownership of vehicle .
- Rural financing by NBFC: Providing attractive finance for commercial vehicle, fertilisers, seeds, farming equipments and machinery to the farmers. For example: Mahindra Finance.
- Trade finance by NBFC: Providing working capital requirement to dealer, supplier and buyer within the country and outside the country.
- Infrastructural funding by NBFC: NBFC provide loan for building real estates, ports, bridges, airport, metros etc.
- Leasing services by NBFC: Many small business cannot afford to buy assets like land ,building and machinery so they lease from the owner of the assets which has fixed period
- Venture capitalist : Venture investor invest in the business in initial age of the business after understanding the proper business model and future growth of the business in the expectation of higher return.
- Micro small and medium enterprises financing: MSMEs are the crucial part of the economy and many are depended on it. They provide finance for the these enterprises.

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2. Research objectives

- To analyse credit risk management of three different companies : Bajaj Finserv, Muthoot Finance , DHFL
- To analyse Impact of NPA on Return on equity
- To study the impact of their market capitalisation on the basis of NPAs
- To study financial ratio to evaluate profitability

3. Brief introduction of the companies

A.Bajaj Finserv ltd.: It is part of Bajaj holding and investment Limited, is an Indian financial services company focused on lending, asset management, wealth management and insurance. Bajaj holding was recognized as NBFC in 2008 with the registration under RBI.The founder was Jamnalal Bajaj.
B. Muthoot finance Ltd: It is NBFC of Indian Finance Corporation. It is market leader for gold financing in the world. Besides financing gold transactions, Muthoot Finance Ltd offers foreign exchange services, money transfers, wealth management services, travel and tourism services. It started as a small lender of gold in Kerala. Muthoot Finance has played an instrumental role in organizing and professionalizing gold collateralized loans in India, a concept which emphasizes mobilising household Gold jewellery as a channel of credit to borrowers. Its headquarter is situated in Kerala, India..
C. DHFL:Dewan Housing Finance Corporation Ltd. is a deposit-taking housing finance company, headquartered in Mumbai with branches in major cities across India. DHFL was established to enable access to economical housing finance to the lower and middle income groups in semi-urban and rural parts of India. At DHFL all their aim is help maximum number of house owner across the nation.

4. Literature review

SrinivasGumparthiSSn.(2010) Studied and analysed “Risk Assessment Model for Assessing NBFCs’ (Asset Financing) Customers” A study was conducted the sampling technique used is census method. All then situations extending credit in this area are considered sample size. The type of data used in assigning appropriate weights aiding the development of the model is primary and various parameters were identified using secondary data. Financial ratios were used to measure the strength of the customer. The research proves that customer with high score and low risk prompt to pay the loan. Liquidity risk and inability to pay the recent liability considered to be most important factor.

SrishtiKhanchandani.(2019) studied “RISK MANAGEMENT OF NON-BANKINGFINANCIAL COMPANIES: A CASE OF INDIA” and attempt to explore with data collected within last 10 year. This study the data collection was based on secondary data and major source of date is the annual report of the non-banking financial companies. Several statistical like regression tool is used to interpret the data. The regression results clearly indicate that Interest Coverage Ratio (ICR) and Asset Turnover Ratio (ATR) has positive impact on Return on Investment (ROI) of Non- Banking Financial Companies. Overall the study found that there is no impact of Current Ratio (CR), Debt- Equity Ratio (DER), Operating Profit Ratio (OPR) and Quick Ratio (QR) on Return on Investment (ROI) of Non Banking Financial Companies. This attempts to explore the relationship of liquidity, operation and credit risk and return of NBFC.

MR RAGHAVA H,(2017) aimed at exploring “A STUDY ON CREDIT RISK MANAGEMENT AT PIRAMAL CAPITAL AND HOUSING FINANCE LIMITED, BENGALURU”. The information was collected through secondary source: Historical data, annual report income statement of the company .The study was limited to Bengaluru .The results study that The NPA against gross loan increasing regularly which not a good sign for the company. For managing risk, company need to focus on credit scoring which help in finding credit worthiness of the clients.

Dr. Geeta Sharma.(2012) researched about the” Consumer Credit Default Predictors and Risk Modeling: A Case Study”, this was combination of exploratory study as well as descriptive study. Data was collected by the primary mean The sampling frame comprised of customers from Madhya Pradesh and Chhattisgarh region to whom loan was disbursed with in a period of six months ranging from January-to-August 2012 by a leading National NBFC. In this study author analyze some factor by the help of two model which help in predicting future default by retail borrower. The two model were logistic regression and discriminant analysis. Result of both the model was same and indicates that NBFC should focus and rely more upon the existing borrower rather than exploring new borrowers and increase proportion of medium term loans in their portfolio and also percentage of single customers as compared to married ones.

5. Research Methodology

The research methodology of would be Quantitative research, I have used statistical tool such as ANOVA and compute data through various financial ratios. Data that I have used is from company’s income and financial statement which got it from company’s annual report for the year 2018-2019 and I have used data from articles, journal and newspaper to analyse the data.

5.1 Hypothesis

H0: There is no significant relationship between NPA and market capitalisation of NBFCs.

H1: there is significant relationship between NPA and market capitalisation of NBFCs

H0: There is no significant relationship between CAR and ROE

H1: There is significant relationship between CAR and ROE

5.2 Research design

The research design that is used in this paper is collecting data from annual report and articles for the company for the analysis of the study. Research is conducted in three steps:

- In first steps I have analysed the measures and methodology adopted by each company to control risk managements according to different type of risk.
- In second steps I have analysed the financial ratios of the company and compare with two –three different factors in accordance to the financial year with the help of line graphs and also in this step hypothesis is tested with the help of ANOVA.
- In third step I have analysed credit score of each company with the help of Atman z score model, which has also given probability of default for each company.

5.3 Limitation of study:

- This study is based on NBFC sector which is restricted to only three companies: Bajaj finserv, Muthoot finance and DHFL.
- The study is conducted with help of statistical tool such as Altman z score model and ANOVA which might not be correct 100% as statistical tools works 80% of time unlike scientific tools.
- The study is based on past three years 2017-2019.
- This study is conducted on the past data basis, does not consider the future aspects or forecasting the risk models.

6. Analysis using Financial Ratios

Return on equity (ROE) %

	2019-2018	2018-2017	2017-2016
Bajaj finserv	24.30	22.81	23.21
Muthoot finance	23.69	25.69	19.93
DHFL	-11.67	14.91	43.11

Return on Assets (ROA) %

	2019-2018	2018-2017	2017-2016
Bajaj finserv	2.92	2.89	2.98
Muthoot finance	5.58	5.61	4.06
DHFL	-0.93	1.25	3.46

Net margin %

	2019-2018	2018-2017	2017-2016
Bajaj finserv	12.61	12.71	14.08
Muthoot finance	27.67	27.19	20.33
DHFL	-7.47	11.26	28.82

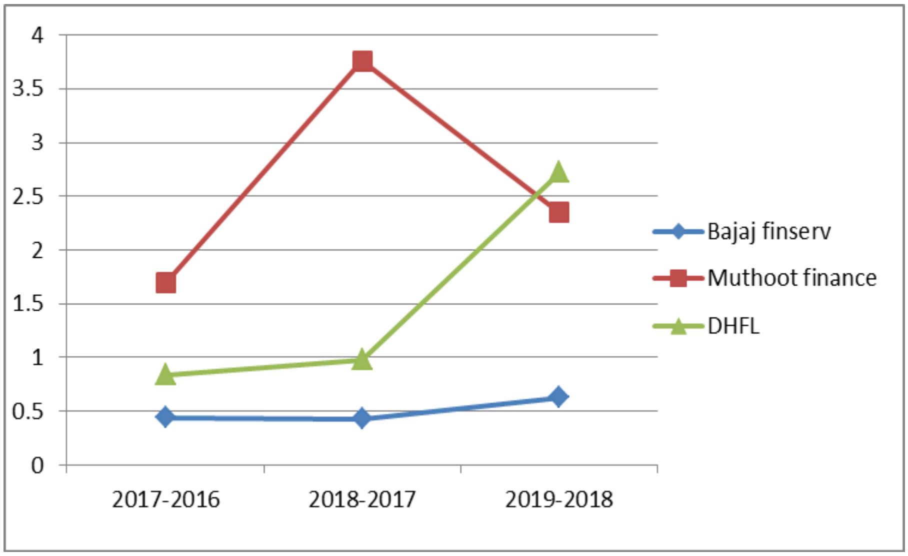
Nonperforming assets (NPA) %

	2019-2018	2018-2017	2017-2016
Bajaj finserv	0.63	0.43	0.44
Muthoot finance	2.35	3.76	1.69
DHFL	2.72	0.98	0.94

Capital adequacy ratio (CAR) %

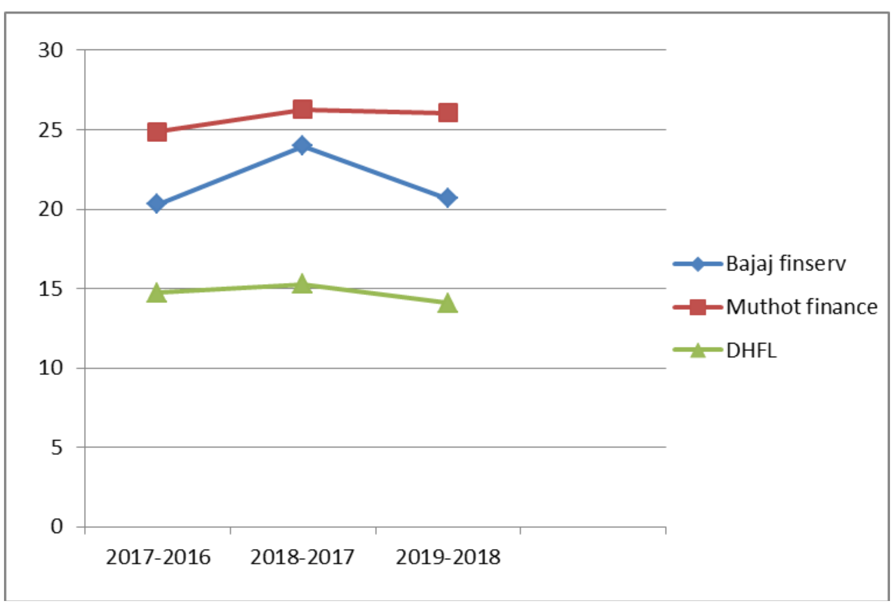
	2019-2018	2018-2017	2017-2016
Bajaj finserv	20.66	23.98	20.30
Muthoot finance	26.05	26.26	24.88
DHFL	14.07	15.29	14.75

6.1 Comparison of NPA of three different companies



Interpretation: We can see from the above chart NPA of Bajaj finance in the financial year 2019-2018 was lowest which is because of their diversified portfolio with diversified customer living in different geography of the country. Muthoot finance NPA was also very much low as compare to the previous year, it is because they ramp up their technology and take gold as collateral in order to avoid NPA.DHFL NPA was highest amongst the three company of steep decline in the housing sector . They are not diversified portfolio NBFC ,they focused on one sector which lead to more NPA.

6.2 Comparing CAR of three of the company

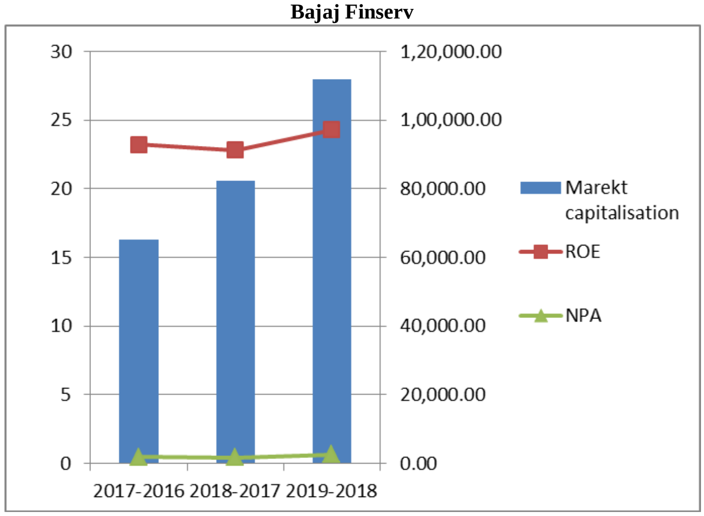


Interpretation:

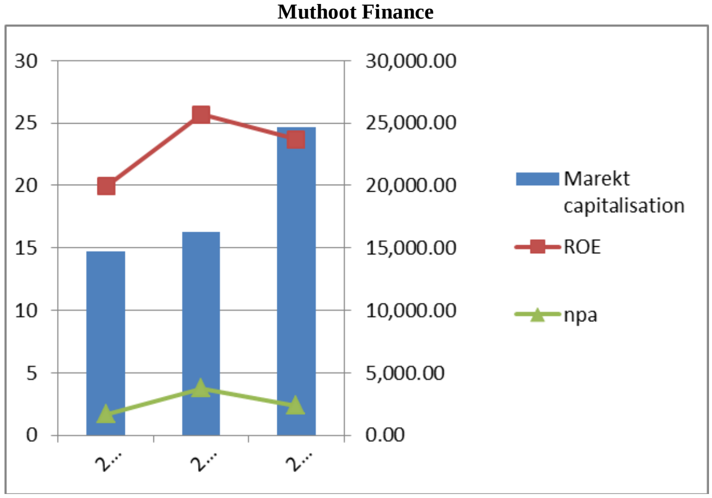
CAR of Muthoot finance is highest as compare to Bajaj finserv and DHFL and DHFL is the lowest in the three of the year. DHFL has lowest capital has with it as a percentage of its total credit exposure.

6.3 Comparing ROE and. market capitalizations for the year last three year

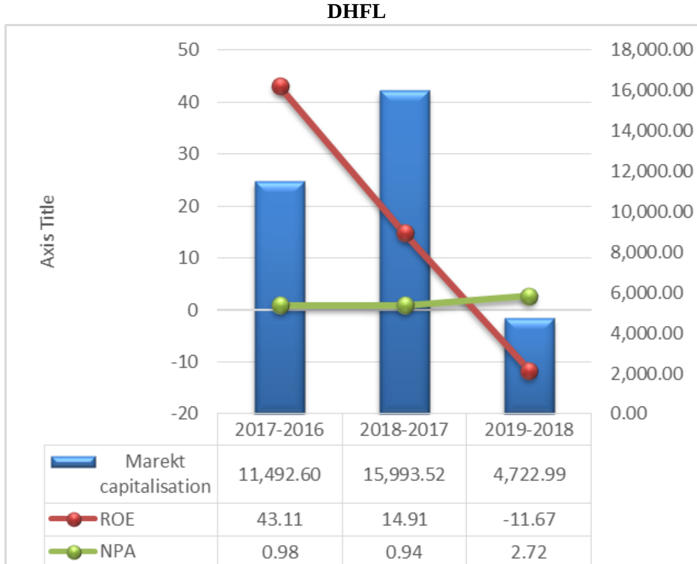
Bajaj Finserv



Muthoot Finance



DHFL



Interpretation: We can see from the above three chart that ROE has direct impact on market capitalization and NPA has indirect relation with market capitalization of a company. We can see when the ROE of Bajaj Finserv is 24.3 in the year 2019-2018 the market capitalization of was in the three year 174488.47 and in the year 2019-2018 DHFL, ROE was -11.67 which affected the market capitalization heavily from 15993.52 to 4772.99. It is not compulsory that highest ROE means highest market capitalization but it affect the market capitalization significantly.

(i.)*Testing hypothesis of two way ANOVA*

H01:The population mean for of the Three of the company are equal
H02:The sample mean for NPA and market capitlaisation are equal
H03:There is no interaction between NPA and market capitalization

	Bajaj Finserv	**Muthoot Finance**	**DHFL**
NPA 2018-2019	0.63	2.35	2.72
2017-2018	0.43	3.76	0.98
2016-2017	0.44	1.69	0.94
Market Capitalization(Cr) 2018-2019	174488.47	24668.7	11492.6
2017-2018	101787.17	16303.7	15993.52
2017-2016	64205.66	14756.6	47722.99

ANOVA

Source of Variation	***SS***	***df***	***MS***	***F***	***P-value***	***F crit***
Sample	1.23E+10	1	1.23E+10	20.79726	0.000654	4.747225
Columns	8.43E+09	2	4.22E+09	7.104553	0.009212	3.885294
Interaction	8.44E+09	2	4.22E+09	7.105057	0.00921	3.885294
Within	7.12E+09	12	5.94E+08			
Total	3.63E+10	17				

Interpretation:
I have form three hypothesis and tested with the help of two way ANOVA in which my major focus would be on H03 ,finding interaction between NPA and market capitalization of three of the company. The ANOVA rules says that if F value is less than Fcrit value then null hypothesis should be not be rejected and if F is more than Fcrit then reject null hypothesis.

Therefore we reject three of the null hypothesis and select alternative hypothesis.

H03:There is no interaction between NPA and market capitalisation
H13: Tere is interaction between NPA and market capitalization

We can see from in interaction row, F > F crit (7.105057>3.885294), which means there is interaction between NPA and market capitalisation of three of the company . NPA of a company is impact market capitalisation.More NPA leads to low market capitlisation of the company . We can see the from the example of DHFL –Its NPA of the year 2019 is 2.72 whoch leads to plunge market capitlisation to 47722.99, lowest in the three year.

(ii). Testing hypothesis of two way ANOVA

H01:The population mean for of the three of the company are equal
H02:The sample mean for ROE and CAR are equal
H03:There is no interaction between ROE and CAR

	Bajaj finserv	Muthoot finance	DHFL
ROE (2018-2019)	24.3	23.69	-11.67
(2017-2018)	22.81	25.69	14.91
(2016-2017)	23.21	19.93	43.11
CAR (2018-2019)	20.66	26.05	14.07
(2017-2018)	23.98	26.26	15.29
(2016-2017)	20.3	24.88	14.75

ANOVA

Source of Variation	*SS*	*Df*	*MS*	*F*	*P-value*	*F crit*
Sample	0.003756	1	0.003755556	2.95E-05	0.995758	4.747225
Columns	292.9922	2	146.4960889	1.149559	0.349327	3.885294
Interaction	16.00564	2	8.002822222	0.062798	0.939439	3.885294
Within	1529.241	12	127.4367333			
Total	1838.242	17				

Interpretation:

I have form three hypothesis and tested with the help of two way ANOVA in which my major focus would be on H03 , finding interaction between ROE and CAR of three of the company. The ANOVA rules says that if F value is less than Fcrit value then null hypothesis should be not be rejected and if F is more than Fcrit then reject null hypothesis.

Therefore we do not reject three of the null hypothesis and reject hypothesis

H03:There is no interaction between ROE and CAR

H13: There is interaction between ROE and CAR

We can see from in interaction row, F < F crit (0.067298<3.885294), which means there is no interaction between ROE and CAR of three of the company . ROE of a company does not impact CAR of the company.

(iii) Altman Z –score model -The Altman Z-score is the yield of a credit-quality test that checks a traded on an open market producing organization's probability of liquidation. The Altman Z-score depends on five monetary proportions that can figure from information found on an organization's yearly. It utilizes profitability, leverage, liquidity, solvency, and activity to foresee whether an organization has a high likelihood of getting insolvent. This methodology can be used to predict the chance of a business organization to move into bankruptcy within a given time, which is mostly about 2 years.

This method is successful in predicting the status of financial distress in any firm. Altman Z score can help in measuring the financial health of a business organization by the use of multiple balance sheet values and corporate income. The Altman Z-Score is a generally utilized measurement with wide applications. It is one of the few credit checking models as of now being used that consolidate quantifiable monetary pointers with a little scope of factors which will assist us with predicting whether a firm will monetarily come up short or go into a liquidation stage.

In this credit risk model five financial ratios have taken :

- Working capital/total assets
- Reserve / Total assets
- PBDIT/Total assets
- Sales / Total assets
- MV of equity/ Total debt

Altman z score model					
		coeffcient	Bajaj finance	Muthoot finance	DHFL
working capital/total assets		1.2	-0.015821853	0.239562829	-0.04730981
reserve/total assets		1.4	0.113518719	0.227970538	0.071107765
PBDIT/total assets		3.3	0.204413674	0.18213188	0.12347789
Sales/total assets		0.999	0.204406141	0.181973256	0.120843324
MV of equity/total debt		0.6	2.285553689	0.418113559	0.052595955
Z score			**2.390039055**	**1.640328771**	**0.602536193**
Probility of bankruptcy			0.008423291	0.050468413	0.5
		>3	Away from bankruptcy		
		1.8 to 3	Danger zone(Alarming)		
		<1.8	Higher chance of bankruptcy		

Interpretation:

By Altman z score model there are five ratios and there are standard rating of the model which is if the company have score more than 3 then the company is away from bankruptcy, if the company score is between 1.8 to 3 then the company is lying in danger zone or alarming situation, if company is having credit score of less than higher chance of bankruptcy .

We can interpretate by Atlman z score that

- Bajaj finserv is not lying is away from danger zone but still company need be cautious about the debt repayments since its score is 2.3 and probability of default is 0.0084 which is equal to nil. So we can say that Bajaj finserv bonds and debentures are safe to invest.
- Muthoot finance is in the danger zone or alarming situation since its score is 1.64 and probability of default is 0.050 which is very less risky. So one can plan to invest in the debenture or bonds of this company
- DHFL is in higher risk of bankruptcy since its score is 0.625 which is in zone of less than 1.8 categories. Probability of default is higher in the case of DHFL since it PD is 0.5 which is very high in comparison to other companies. So bond and debenture of companies are very risky. Company is struggling to pay debts currently.

As DHFL has missed the interest the payment of Rs 960 crore to one of its lender and because of which credit agencies like CARE and ICRA downgraded the bonds of DHFL to the default status. DHFL has also stopped taking fresh deposits and whatever deposit they had from the customer and the existing deposit got freeze with premature withdrawal which created a lack of trust of customers. Another crucial thing was they have stop lending money which signals distress in the company and also government of India issued look out notice against promoters which leads to investor community losses the confidence in the managements which leads to crash in stocks. The stock which is traded in September 2018 is traded at 667 is in 2019 traded at Rs 60 and in 2020 in traded at Rs 16. There were about 165 mutual funds that are exposed to DHFL, they had started withdrawing their money in bonds of mutual fund.

Business model of the company is the money that they are lending to retail customer who seeking loan for housing, they come from mutual funds by selling their debentures and bonds and lent the money at higher rate to the customer. Difference between borrowing and lending is their income but there was fault in the business model (Assets –liability mismatch) ,the money that they have borrowed from mutual fund where short term loan which is have to be repaid within one year and the money that they had lent for 10-15 years of duration which lead to liquidity crunch.

7. Findings

- NPA indirectly affects the market capitalization of the company in negative way. Increase in DHFL NPA of about 189 % leads to reduction 75% in Market Capitalization.
- All the companies have robust mechanism of lending.
- DHFL has highest probability of default because of fault in the business model and also because of slump in housing sector.
- Company with diversified portfolio of assets leads.
- ROE directly impact market capitalization of the company. 4% increase of ROI affects to increase of almost 1.7 times or 170% increase in market capitalization of Bajaj Finserv
- The trend of Return on assets varied from year to year.
- Classification of financial assets in credit risk management in under three stages in three of the company.

8. Conclusion

- Financial institutions especially NBFC and other lending institutions encounter a number of risks both financial and non-financial. However, credit risk was found to be the hazardous and the most common risk among the three prominent types of risk (credit, market, and liquidity risks) companies' encounter in the discharge of their mandate on day-to-day basis.
- The project undertaken has helped in gaining knowledge about the Credit Risk
- Management and impact on market capitalization- Project researched the methodologies adopted by different companies in order to mitigate losses and understand the credit risk model of different company. Company having diversified portfolio always leads as we see from Bajaj finserv.
- This is a economic cycle of borrowing and lending and if this system brakes the whole economy have suffer. The squeeze at the NBFC end and the consequently higher interest rates could hurt the construction sector, auto and jewellery firms, and consumption in fast moving consumer goods (FMCG).One bad decision in NBFC leads to affect different sectors.

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