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PREDICTION OF MANAGERIAL FRAUD IN ICICI BANK

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ABSTRACT

The Indian banking industry has seen various governance scams in the recent years. In the last 3 years, there has been a loss of thousands of crores due to various scams. Our paper reveals the managerial fraud which happened in ICICI bank in 2018. We also try to find out the predictive ability of financial and corporate governance variables to detect fraud so that such fraud doesn't happen in the future. In this paper we found out that it is not easy to predict the managerial fraud in the case of ICICI bank with the help of financial and governance variables as the success rate is half. Better and more stringent monitoring policy is required to avoid such frauds or scams in future.

KEYWORDS: *Banks, Fraud, Financial Ratios, Corporate Governance Variables, Logistic Regression.*

Introduction

Before liberalisation of the Indian economy, the Reserve Bank of India used to play the role of a regulator of the financial sector. Post liberalisation, there was a substantial shift in the role the Reserve Bank of India used to play, from that of a regulator to that of a facilitator. Consequently, it has now begun to only facilitate the free play of market forces leaving banks and financial institutions to determine their own policies. On one hand, multi-dimensional growth has now been observed in the Indian banking sector, while on the other hand, multiple cases of scams and corruption have been extensively covered during this period by the media since 2015. During FY 2018-19 alone, around 6800 cases have been detected according to a report by the Reserve Bank of India, which in total amount to a whopping sum of around Rs. 71,500 crore.

This paper is aimed to analyse the various aspects of Bank frauds. However our study is primarily confined to one of the famous Bank fraud case involving ICICI Bank. Under this case the Central Bureau of Investigation(CBI) has filed a case of criminal conspiracy and fraud against Ms ChandaKochhar and her husband Deepak Kochhar in the high profile Videocon loan case.The agency is primarily examining whether ChandaKochhar made personal gains by irregularities in release of loans to Videocon in 2012.Enforcement Directorate has registered a case of fraud and money laundering against ex CEO of ICICI Bank MS ChandaKochhar and MD of Videocon group Mr VenugopalDhoot.

Review of Literature

Ewa, E. U., &Udoayang, J. O. (2012) were of the view that an effective and efficient Internal control design could detect employee fraud schemes in the banking sector and influences staff attitude towards fraud. Where a weak internal control mechanism exposes the system to fraud and creates opportunity for staff to commit fraud ,on the other hand, a strong internal control mechanism discourages staff fraud. The study concluded that effective and efficient internal control system is necessary to stem the uneasiness in the banking sector.

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Sharma, S., & Choudhury, A. R. (2016) analysed various scenarios where fraud could take place and used unsupervised learning approaches to detect fraudulent acts in areas such as credit cards, financial statements and money laundering. They discussed and analysed various attributes which would be necessary in detection of frauds in banks. They identified that enormous and ever-expanding volumes of data and the growing complexity of systems with changes in business processes and activities lead to continuous evolution of newer fraud schemes by bypassing existing detection techniques.

Agarwal, N., & Sharma, M. (2014) proposed a risk prediction model to predict the fraud risk posed by the merchants to the banks. In that model they used logistic regression technique, deployed using SAS. Their model was based on the merchant-bank relationship in the credit card industry and probability score of default (PF) of each merchant for a possible fraud risk. That PF score help management in advance to anticipate future losses on merchant accounts. Also through this PF score,banks can focus on those merchants who are more risk. Their study revealed that this model can identify 62 percent frauds when the transactions are sorted by the probability of fraud.

Khanna & Arora (2009) studied about the presence of frauds in the banking sector and evaluated the causes that were responsible for occurrence of frauds. Their study showed that the main reasons behind frauds in the banking sector were low adherence to guidelines issued by the RBI for prevention of banking frauds, too much work related pressure on banking employees, lack of adequate staff trainings and stiff market competition. They suggested strict adherence to the RBI guidelines as well as proper working anti-fraud mechanism to be in place.

Boumediene (2014) studied the financial statements of banks in Tunisia in order to find out whether they helped in detection and prediction of managerial frauds. The findings of the study were that financial statements were indeed instrumental in the detection of managerial frauds in the Tunisian banks, with the financial ratios being used to detect them.

Bhasin (2015) was instrumental in throwing light on the increasing trends of banking frauds in India and was able to show that around 60% of the cases of banking fraud occurred because of very limited rotation of roles and responsibilities of banking employees, limited control over management of the account as well as false and fake documentation. Apart from the above findings, nearly 45% of the banking fraud cases were revealed to have been committed by banking employees in the managerial level.

Kingsley (2012) studied frauds in Nigerian banks and identified various reasons for occurrence of the frauds such as work-related pressure on banking staff, financial obligations of the concerned individuals, job-related insecurities, high poverty ratio, complex legal formalities, keeping up standards of living, incorrect commitmentsmade by the managers and stiff competition among banks.

Willson (2006) studied cases of banking frauds in Singapore leading him to emphasise on various causes which includedimproper assignment of duties and responsibilities amongst the staff, dearth of proper supervision by the management, non-compliance of policies, lack of management's proper control over the day-to-day workings of the banks and diminished control over banking activities.

Vousinas (2016) opined that the best tool for managing bank frauds was internal audit. The role played by internal audit in their proper handling formed the basis of the study, which also highlighted various anti-fraud methods to better manage frauds in the banking sector.

Hypothesis Development

Assumptions relating to financial ratios:

H_{01}: The financial ratios of the bank has no impact on Managerial fraud Assumptions relating to Corporate Governance variables-

H_{02}: The corporate governance ratios of the bank has no impact on Managerial fraud

Methodology

The aim of this paper is to study the scam which happened in Industrial Credit and Investment Corporation of India (ICICI) Bank. We also try to find out the predictive ability of key financial and governance variables. We have taken 10 financial variables which indicates the performance, business and growth of the banks (Salem LotfiBoumediene (2014)); (Ravisankar et al. (2011). Whereas, 6 Corporate governance variables are taken for the study which may impact managerial frauds (Vikramaditya S. Khanna et al (2013)); Christopher J. Skousen et al (2008); Vermeer (2003). The Reserve Bank of India (RBI) is the regulatory body for banks in India. It uses the financial ratios to check the performance of the banks. Security Exchange Board of India (SEBI) also regulates the banks which are listed in Stock Exchange. SEBI takes care of the governance aspects of these banks in order to ensure high efficiency and credibility in banking's performance. In our study we have taken sample of 6 banks. The top 3 public sector banks (in terms of capitalisation)– State Bank of India (SBI), Bank of Baroda (BOB) , Punjab National Bank(PNB) and top 3 private sector banks (in terms of capitalisation)– Housing Development Finance Corporation (HDFC) Bank, Kotak Mahindra and Industrial Credit and Investment Corporation of India (ICICI) Bank.

These 6 banks cover 68.29% of Indian banking Industry as per market capitalisation (As on 1st December,2019). [iii] We have taken secondary data for the period FY 2009 to 2018 (10 years). The data for financial variables were collected from Prowess IQ and Governance variables data were collected from the individual Annual reports of these banks (available on their websites). In this sample of 6 banks, there are fraud and non-fraud banks. The fraud banks are the ones where managerial fraud occurred (which has been assigned 1)and non-fraud banks (which has been assigned 0) are such where quantum of managerial fraud was almost negligible. Following variables were taken to run the Logistic Regression test on SPSS:

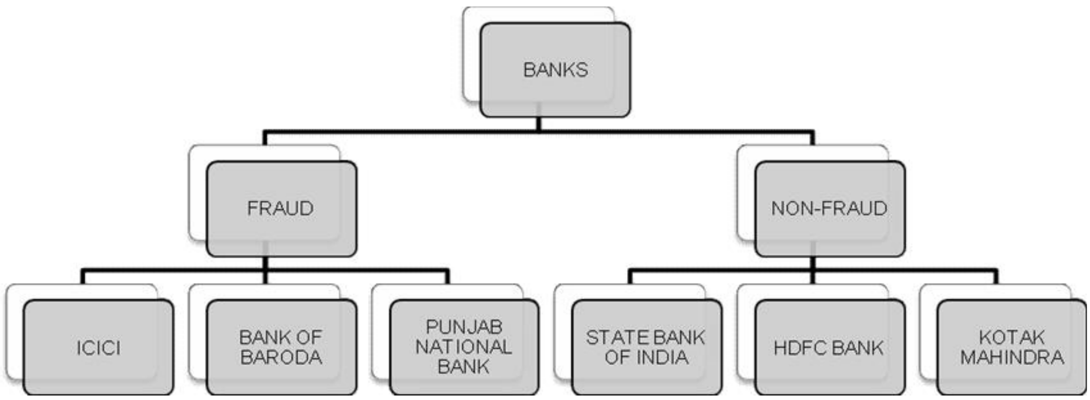
Table 1: Variables in the Study

	Variable	**Definition**
S.No.	Financial Variables	
1	TPE*	Total Assets Per Employee
2	LODR*	Net Loan to Deposit Ratio
3	NIM*	Net Interest margin
4	ROA*	Return on Assets
5	EQUA*	Equity Capital to Assets
6	PLOPE*	Profit/Loss Per Employee
7	CAPADQR*	Capital Adequacy ratio
8	IIWFUND*	Interest income as percentage to working fund
9	NOIIWFUND*	Non-Interest income as percentage to working fund
10	BUSSPER*	Business per employee
	Corporate Governance Variables	
1	WBLOW*	Whistle Blower Policy
2	PENALTY*	Penalty means penalty imposed on banks by RBI or SEBI
3	COMM**	It stands for Committee which includes Remuneration Committee, Risk Management Committee and Shareholder's grievance committee.
4	REPODIS**	It stands for Report and disclosures and it includes Disclosure of grievance, related party disclosure and accounting treatment.
5	BODAC**	It signifies Board of director and audit committee. Various components of Board of Director and Audit committees are taken like composition, meeting, remuneration, code of conduct etc.
6	AWARD**	Award includes awards received for Corporate Governance and other recognitions.

Source: Self Compiled.

*- Absolute values

**- Compilation of score of various sub variables is done to make an Index.



Source: Self Compiled.

- **ICICI Bank-** CBI (Central bureau of Investigation) booked Ms.ChandaKochhar Managing Director and Chief Executive Officer of the bank in January,2019 for allegedly involved in Rs.3,250 Crore loan fraud.[iii]
- **Bank of Baroda-** In 2015, CBI has arrested the General Manager of the bank Mr.S.K.Garg for allegedly involved in Rs.6000 Crore forex scam.[iv]
- **Punjab National Bank**- NiravModi fooled the bank with the help of various bank employees in 2018. The loass from the fraud amounted to Rs.13,600crores.[v]

The Models

The McAteer (2009) methodology is adapted in this paper. Below is the dependent variable Y i.e. Fraud/ Non fraud banks (dichotomous variables) 1 is assigned for fraud banks and 0 for non-fraud banks.

- **Model for Hypothesis 1**

The model below analyses the impact of independent financial variables - Total Assets Per Employee(TPE), Net Loan to Deposit Ratio(LODR), Net Interest margin(NIM), Return on Assets(ROA), Equity Capital to Assets(EQUA), Profit/Loss Per Employee(PLOPE), Capital Adequacy ratio(CAPADQR), Interest income as percentage to working fund(IIWFUND), Non-Interest income as percentage to working fund(NOIIWFUND), Business per employee(BUSSPER) on the dependent variable Y.

Y= f (TPE, LODR, NIM, ROA, EQUA, PLOPE, CAPADQR, IIWFUND, NOIIWFUND, BUSSPER)………………………Eq(1)

- **Model for Hypothesis 2**

The model below analyses the impact of corporate governance variables - Whistle Blower Policy(WBLOW),Penalty(PENALTY),Committee(COMM),Report and disclosures(REPODIS),Board of director and audit committee(BODAC) and Award (AWARD) on the dependent variable Y.

Y= f (WBLOW, PENALTY, COMM, REPODIS, BODAC, AWARD)……….Eq(2)

Note: The assumptions of Multicollinearity, Linearity, Normality, Heteroscedasticity and outliners are taken care of in the above two models.

Result

Result of Model 1

Table2: Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	56.555	10	.000
	Block	56.555	10	.000
	Model	56.555	10	.000

Source: SPSS Output

Result of table 2- Chi Square statistics is 56.555 with 10 degree of freedom has come out to be significant at $p<.001$

Table 3: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	26.623[a]	.610	.814

Source: SPSS Output

Result of table 3- Cox & Snell R^2 is 61.0% whereas Nagelkerke R^2 is 81.4%

Table 4: Classification Table[a]

Observed			Predicted		
			Fraud/NO Fraud		Percentage Correct
			.0	1.0	
Step 1	FRAUD/NO FRAUD	.0	27	3	90.0
		1.0	2	28	93.3
	Overall Percentage				91.7

Source: SPSS Output

Result of table 4- The above classification table shows how well the independent variables predict dependent variables. As can be seen here model has correctly classified 91.7% of the observations.

Table 5: Variables in the Equation

		B	S.E.	Wald	Bootstrap Sig. (2-tailed)
Step 1[a]	TPE	-.506	.198	6.554	.001*
	LODR	33.164	14.175	5.473	.001*
	NIM	-8.246	3.395	5.900	.001*
	ROA	1.264	2.787	.206	.179[b]
	EQUA	29.953	64.904	.213	.168[b]
	PLOPE	3.663	2.633	1.936	.021**
	CAPADQR	1.263	.619	4.169	.002*
	IIWFUND	-.160	1.582	.010	.277[b]
	NOIIWFUND	-.051	.249	.041	.159[b]
	BUSSPER	.407	.161	6.375	.001*
	Constant	.684	8.361	.007	.292[b]

Source: SPSS Output

*p<.01;**p<.05

Result of table 5- Here, 6 out of 10 financial variables (highlighted) are significantly related to managerial fraud. Thus, **Hypothesis 1 is rejected.** This means financial variables has impact on Managerial fraud.

Result of Model 2

Table 6: Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	39.712	6	.000
	Block	39.712	6	.000
	Model	39.712	6	.000

Source: SPSS Output

Result of table 6- Chi Square statistics is 39.712 with 6 degree of freedom has come out to be significant at p<.001

Table 7 : Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	43.466[a]	.484	.645

Source: SPSS Output

Result of table 7- Cox & Snell R^2 is 48.4% whereas Nagelkerke R^2 is 64.5%

Table 8: Classification Table[a]

Observed			Predicted		
			FRAUD/NO FRAUD		Percentage Correct
			0	1	
Step 1	Fraud/No Fraud	0	25	5	83.3
		1	6	24	80.0
	Overall Percentage				81.7

Source: SPSS Output

Result of table 8- The above classification table shows how well the independent variables predict dependent variables. As can be seen here model has correctly classified 81.7% of the observations.

Table 9: Variables in the Equation

		B	S.E.	Wald	Bootstrap Sig. (2-tailed)
Step 1[a]	WBLOW	-21.887	12113.374	.000	.158
	PENALTY	1.172	.787	2.217	.146
	COMM	-2.866	1.274	5.062	.007*
	REPODIS	2.020	.880	5.270	.005*
	BODAC	1.763	1.444	1.491	.022**
	AWARD	.302	.727	.173	.716
	CONSTANT	-.627	12113.380	.000	.969

Source: SPSS Output

*p<.01;**p<.05

Result of table 9- Here, 3 out of 6 governance variables (highlighted) are significantly related to managerial fraud. Thus, **Hypothesis 2 is rejected.** This means corporate governance variables has impact on Managerial fraud.

Summary of Table 5 and 9

Significant Variables	Relation with Managerial Fraud (B Coeffiecient)
Total Assets Per Employee(TPE)	NEGATIVE
Net Loan to Deposit Ratio(LODR)	POSITIVE
Net Interest margin(NIM)	NEGATIVE
Profit/Loss Per Employee(PLOPE)	POSITIVE
Capital Adequacy ratio(CAPADQR)	POSITIVE
Business per employee(BUSSPER)	POSITIVE
Committee(COMM)	NEGATIVE
Report and disclosures(REPODIS)	POSITIVE
Board of director and audit committee(BODAC)	POSITIVE

Source: Self Compiled.

From our results we can observe that:

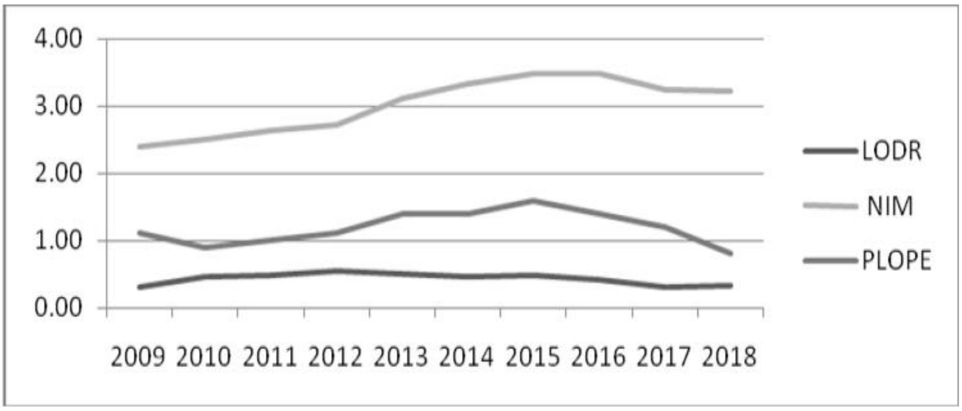
- When there is increase in Total Assets Per Employee, Net Interest margin, Committee compliance the Managerial fraud decreases.
- When there is increase in Net Loan to Deposit Ratio, Profit/Loss Per Employee, Capital Adequacy ratio, Business per employee, Report and disclosures &Board of director and audit committee the Managerial fraud increases.

This clearly signifies that certain governance indicators like proper disclosures and reporting, adequate Board of director, meetings, audit committee etc. does not guarantee reduction of fraud.

Conclusion

We have seen the relation between various significant variables with managerial fraud. Let us now compare these results with data of ICICI Bank over the last 10 years.

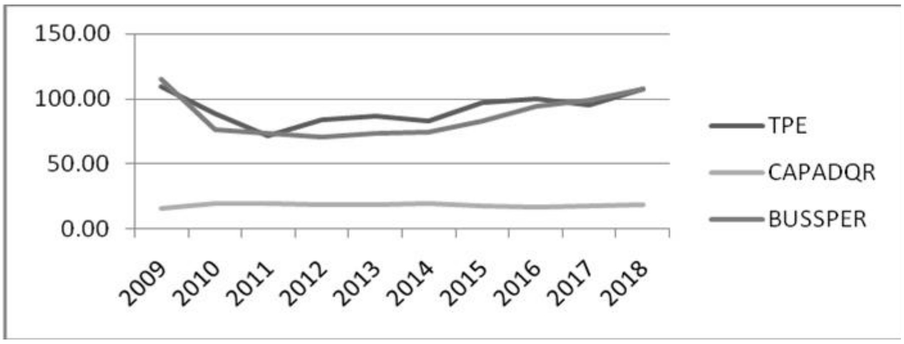
Chart 1: Chart showing pattern of Net Loan to Deposit Ratio , Net Interest Margin, Profit/Loss Per Employee of ICICI bank over the last 10 years.



Source: Self Compiled.

- Our result says that there is positive relation between LODR and managerial fraud. In the case of ICICI bank it is seen that there slight increase in LODR the years ahead of fraud detection so, this variable was helpful in predicting ICICI fraud.
- Our result says that there is negative relation between NIM and managerial fraud. In the case of ICICI bank it is seen that there slight dip in NIM, the year ahead of fraud detection so, this variable was helpful in predicting ICICI fraud.
- Our result says that there is positive relation between PLOPE and managerial fraud. In the case of ICICI bank it is seen that there was continuous dip few years before fraud was unveiled. So, this variable was not helpful in predicting ICICI fraud.

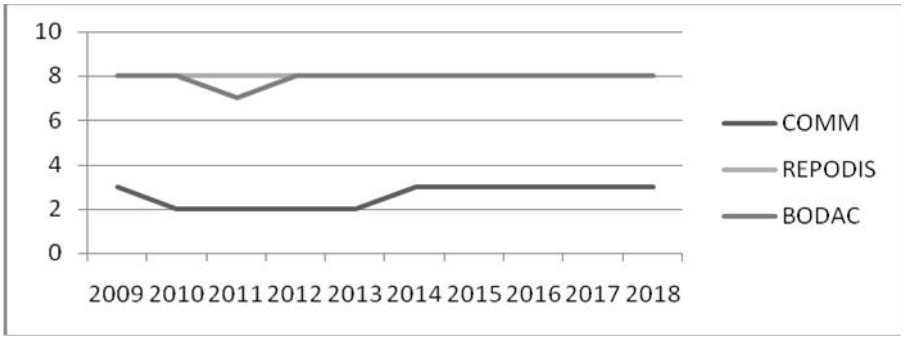
Chart 2: Chart showing pattern of Total Assets per employee, Capital Adequacy ratio and Business per employee of ICICI bank over the last 10 years.



Source: Self Compiled.

- Our result says that there is negative relation between TPE and managerial fraud. In the case of ICICI bank it is seen that there increasing trend in TPE. So, this variable was not helpful in predicting ICICI fraud.
- Our result says that there is positive relation between CAPADQR and managerial fraud. In the case of ICICI bank it is seen that there is slight increasing trend in CAPADQR. So, this variable was helpful in predicting ICICI fraud.
- Our result says that there is positive relation between BUSSPER and managerial fraud. In the case of ICICI bank it is seen that there increasing trend in BUSSPER. So, this variable was helpful in predicting ICICI fraud.

Chart 3: Chart showing pattern of Committee compliance, Report and disclosures &Board of director and audit committee compliance of ICICI bank over the last 10 years.



Source: Self Compiled.

- Our result says that there is negative relation between COMM and managerial fraud. In the case of ICICI bank it is seen that there is constant trend in COMM. So, this variable was not helpful in predicting ICICI fraud.
- Our result says that there is positive relation between REPODIS and managerial fraud. In the case of ICICI bank it is seen that there is constant trend in REPODIS. So, this variable was not helpful in predicting ICICI fraud.
- Our result says that there is positive relation between BODAC and managerial fraud. In the case of ICICI bank it is seen that there is constant trend in BODAC. So, this variable was not helpful in predicting ICICI fraud.

Thus, in the case of ICICI Bank we saw that only 4 out of 9 significant variables could predict the possibility of fraud which is near to 50% predictability. So, we can clearly say that data can't always help us in predicting frauds. Managerial fraud is an individual's act which can be controlled only by more surveillance and more transparency in means of working. Apart from that RBI and/or SEBI should try on developing programs which enhances the credibility level of the managers especially at the top level.

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