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Relationship between risk profile and disclosure practices of Indian public sector banks

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Abstract
Indian public sector banks account for two thirds of banking business in the country, but they have been under pressure due to their high risk profile. Risk management disclosure is an important tool to increase market discipline and improve the overall risk management status of a bank. The present study tries to establish a relationship between the risk management disclosure scores and risk management variables of largest 10 public sector banks from the period of 2014-2020 using an OLS regression model. The findings show that risk management disclosure scores of public sector banks range from 15-30 out of 40 indicating a scope of improvement. The relationship between risk management variables and risk disclosure is significant with the latter explaining more than 40% variation in the risk management disclosure. There is a need to improve the overall risk management and disclosure practices in public sector banks so as to improve their performance and efficiency.

Keywords – Banking risk, Basel norms, risk disclosure, Indian banks

Introduction
After the financial crisis of 2008-09, regulatory requirements have increased for commercial banks. Central banks have not only become more stringent in supervisory mechanisms, but the disclosure requirement by market regulators and investors have also increased. There are various benefits of increasing risk disclosure for commercial banks which include lack of risk taking behavior, reduction of agency costs, and less information asymmetry(Ellili & Nobanee, 2017). One of the globally accepted risk management and disclosure norms are Basel norms, which are followed by banks across the globe. After the financial crises of 2008-09, Basel committee introduced Basel 3 norms in order to work on the areas which were earlier neglected and caused a global financial turmoil. RBI introduced the framework in 2013 and banks are still struggling to follow the norms completely(Boora & Jangra, 2019).
Since the world is coming out of a global pandemic, it is important to study the risk taking behavior of banks. Indian public sector banks have always been questioned for their poor performance and risk taking behavior. Not only that, risk taking behavior and risk appetite of public sector banks is different from other categories because they have more government control and interference. As a result, they have more pressure to participate in the developmental policies of the government, which puts a pressure on their profitability (Sarkar, Sensarma, & Sharma, 2019). Being one of the fastest growing economies of the world, India provides a lot of opportunities for growth for its commercial banks. This increases the competition and pressure on the public sector banking firms to earn more than their competing private sector and foreign banks. These situations make it important to study their risk taking behavior in detail.
The existing studies on risk management of banks focus on accounting tools like CAMELS and Z score model. However, the existing literature lacks on relationship between the risk management indicators and the disclosure practices of commercial banks. Since all the banks are expected follow the Basel disclosure norms, it is important to analyze whether these disclosure practices are impacted by the risk management behavior of the banks.
The present study establishes a relationship between the quarterly disclosure scores of the Indian public sector banks with their risk management behavior. The study uses OLS regression model to find out the relationship between the two. The main contribution of the

study is to provide an empirical evidence of risk management and disclosure relationship in the context of an emerging economy. The study also contributes by highlighting the variables which are more crucial for improving the disclosure score of Indian public sector banks.

Review of Literature

Banks face various types of risks, credit risk, liquidity risks, market risk, interest rate risk etc. Existing literature has established that proper risk management framework of banks will increase the confidence of investors and market participants. Regulators have been trying to improve the risk management practises in banks, improve their capital efficiency and keeping a check on their risk-taking behaviour and investment in risky assets.

If the risk management practises of banks are not efficient it leads to increase in operating costs and indicate lack of managerial ability, ultimately manifesting into high risks (Sarkar, Sensarma, & Sharma, 2019).Most of the existing studies on risk management practises have focused on either credit risk or market risk. The studies which have been focused on the relationship between the two have only taken a single component of market risk in consideration like interest rate risk or exchange rate risk(Kumar & Agrawal, 2017). After the financial crisis, there is a need to lay more focus on the other categories of risks as well including operating risk and liquidity risk. As far as Indian public sector banks are concerned, they account for more than two-thirds of the total banking assets of the country. Even though they have been well-capitalized, they have been facing problems of non-performing assets(Arora & Singh, 2014). These non-performing assets are main indicator of the credit risk of banks and have been increasing in the recent past in Indian banks. The central bank has initiated many policy measures to solve the issue, but the problem of non-performing assets is still huge in India. This means that risk management practises at Indian banks are still skewed towards the credit risk indicators of banks.

Pillar 3 of Basel 3 norms deal will disclosure requirements of the banks. it was introduced to increase the market discipline among the banking firms(de Jesus, Macedo, & Rodrigues, 2014). Since the banks are regulated by different entities, coming up with a uniform disclosure is always difficult(Asongu, 2013). In India banks have to comply with the disclosure requirements of RBI and stock market regulator, SEBI. As a result, RBI has aligned its quarterly disclosure requirements with the Basel 3 norms.

Research Methodology

The present study uses OLS regression to determine the relationship between risk management practices and disclosure scores. The disclosure scores have been calculated on the basis of a 40 point scale devised by (Giner, et al., 2020), (Naz & Ayub, 2017), (Dhar, 2014) (Santos, et al., 2014) etc. which was Indianized as per the requirements of RBI. The scale is a binary instrument where presence and absence of each item is given either 1 or 0. These 40 items capture all the major pillars of Basel 3 norms, namely capital adequacy, capital structure, credit risk, operating risk, market risk, interest rate risk and other risks.

The scores of 10 largest public sector banks were taken from 2014-2020 for every quarter to arrive at the risk disclosure scores. For measurement of risk management practices and risk profile of these banks, following variables were used in the study.

Abbreviation	Parameter
ROA	Return on Assets
ROE	Return on Equity
LTDR	Loans to deposit ratio
OETA	Operational expenses to total assets
LHTA	Loans to households to total asset ratio

NET PROFIT	Net Profits
CHTA	Cash and Bank Balance to Total Assets
DEPTL	Deposits to total liabilities
CRTA	Capital and Reserves to Total Assets
NII	Non-interest income to interest income
NPATA	Gross NPAs to total assets

Due to the high collinearity between ROA and ROE, (VIF score > 2), ROA was dropped from the study. All the remaining variables were converted into percentage to standardize the values for application in the regression model.

The OLS regression model which was used in the study was as follows:

$$\boldsymbol{Discl_{it} = \beta_1 + \beta_2\, ROE_{it} + \beta_3 LTDR_{it} + \beta_4\, OETA_{it} + \beta_5 LHTA_{it} + \beta_6 NP_{it} + \beta_7 CHTA_{it} + \beta_8 DEPTL_{it} + \beta_9 CRTA_{it} + \beta_{10} NII_{it} + \beta_{11} NPATA_{it} + \varepsilon_{it}}$$

Results and Findings

The table below shows the average disclosure scores of sample public sector banks for their quarterly disclosures for the period of 2014-2020

Public Sector Banks	Average Scores
Bank of Baroda	22.79
State Bank of India	21.50
Punjab National Bank	26.50
Canara Bank	24.33
Bank of India	23.00
Union Bank of India	24.75
Central Bank of India	22.33
Indian Bank	23.79
Indian Overseas Bank	18.63
UCO Bank	15.54
Category Average	22.32

These findings indicate that none of the banks scored more than 30 out of 40 in terms of risk management disclosure. Some banks like UCO Bank and Indian Overseas Bank scored even less than 20. These low scores of the category indicate that public sector banks need to work on their risk management disclosure practices and include more qualitative information for the investors and market regulators.

The table below shows the results of the OLS model for the public sector banks.

Variable	Model Estimate
ROE	-0.030 (0.007).
LTDR	1.173 (0.009).
OETA	0.980 (0.154)
LHTA	-1.360 (0.021)*
NP	0.019 (0.037)*
CHTA	-0.167 (0.118)
DEPTL	1.012 (0.058).
CRTA	-0.898 (0.009).
NII	0.089 (0.139)
NPATA	0.077 (0.017)*
R-Squared:	0.428
Model estimate	29.884 (0.016)*

Significance. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

The results indicate that risk management variables explain more than 42% of the variation in the risk management disclosure scores of public sector banks. Out of the 10 variables selected for the purpose of study, the results are significant for 7 variables. 3 variables which are not significant are non-interest income to interest income, cash holdings to total assets ratio and capital reserves to total assets ratio. The main reason for the same is that these variables relate to balance sheet items and hence do not reflect much in the quarterly disclosures of the commercial banks.

Out of the significant variables, loans to total assets are negatively related to the disclosure scores. This indicates that the decrease in loans cause increase in disclosure scores and vice a versa. Decrease in lending indicates a possibility of liquidity crunch and asset liability mismatch for the public sector banks. as a result, in such situations, banks increase their disclosures to give assurance to market participants that their financial position is sound.

Conclusion

Indian public sector banks have been facing pressure due to government policies and increasing competition. They have been showing signs of high risk taking behavior in recent past. Risk management disclosure is an important instrument for market discipline and as a result, it is important to understand the determinants of risk management disclosure scores.

The present study indicates that risk management variables account for around 40% variation in the disclosure scores indicating a strong and significant relationship between the two. This means that regulators can motivate banks to improve their disclosure scores by keeping a check on their financial performance indicators.

The study also indicates that disclosure scores of public sector banks are very less , especially in case of few loss making banks. The results highlight the importance of more market discipline in the category, so that their disclosure scores can improve and investors can have more confidence in these banks.

Public sector banks are backbone of the Indian economy and as a result, it is important that government and central bank pay more attention to their financial health and market discipline so that these banks can emerge as strong global financial institutions in future.

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