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A STUDY ON THE RATIO DETERMINANTS OF THE EFFICIENCY OF IDBI BANK

Article Particulars

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Abstract

The Industrial Development Bank of India (IDBI Bank) was established as a wholly-owned subsidiary of Reserve Bank of India in 1964 to provide credit and other financial facilities for development of the fledging Indian Industry. It has undergone various changes from its inception to till date. Therefore, an attempt has been made in this paper is to evaluate the dominating ratios for measuring the efficiency of the IDBI Bank.

Keywords: *IDBI Bank, Operational efficiency, Discriminant Analysis, Wilks Lambda Test*

Introduction

IDBI is now the principal financial institution for coordinating the working of institution for coordinating the working of institutions engaged in financing, promoting or developing industry, assisting the development of such institutions and providing credit and other facilities for the development of industry. The main objective of the Industrial Development Bank is to serve the apex institution for term finance for industry in India.

Objectives of the Study

This research study is pursued with the following objective:

1. To analyse the dominating ratios for measuring the efficiency of the IDBI bank

Review of Literature

The various studies relating to the operational efficiency of banks are given as under:

S.Dasarathan[1] (2013) in his thesis, "A Study on the Operational Efficiency of Urban Cooperative Banks in Tiruchirapalli District" has analysed in detail the deposit mobilization, solvency, liquidity, profitability performance, loans and advances and overdues through ratio analysis.

Saha and Ravishanker[2] (2013) evaluated the efficiency of 25 public sector banks for the period of 1991-92 to 1994-95 and found that the efficiency of the public sector banks improved with time. But they found that the different banks were on the different levels of efficiency scale. Some banks like Oriental Bank of Commerce, Canara Bank, SBI etc were consistently efficient whereas some banks like UCO Bank, Central Bank, Union Bank were relatively less efficient.

Aabhiman Das[3] (2014) in his study on "Efficiency of Public Sector Banks" reveals that banks in the State Bank Group were in general, more efficient than other nationalized banks. It is further observed that the inefficiency that exists in the public sector banks is more as a result of both technical and allocative inefficiency.

Ruchi Trehan and Nitisoni[4] (2015) in their article on "Efficiency and Profitability of Indian Public sector Banks" analyse the technique to generate the technical efficiency scores of individual public sector banks. The banks affiliated to State Bank of India group are more efficient than nationalized banks. The relationship between profitability and efficiency reveals that profitability has significantly influenced the opening efficiency in the Indian public sector banking industry.

Methodology

This study is based on secondary data. The data required for the study have been collected from the annual accounts of the IDBI Bank, books, journals and the like. Discussions have also been held with the officials of the bank. The overall analysis has been done through S.P.S.S. Package – Version 16.0

Period of the Study

This study covers a period of 10 years commencing from 2006-07 to 2015-16.

Analysis of the Study

Dominating Ratios for Measuring the Efficiency of the IDBI Bank – Box's M and Wilks' Lambda Model

In the present days, there are more statistical tools available for identifying the dominating ratios that measure the efficiency of the financial institutions including the bank. Box's M and Wilks' Lambda Model is one among them. It is a technique used to identify the significant ratios for measuring the overall efficiency of the bank.

K means Cluster Analysis classified the conspicuous changes in the financial performance of IDBI Bank within two blocks. The first block comprises the first five years and the second block comprises the remaining five years. This classification forms the basis to discriminate the 47 ratios; the researcher classified the increasing as well as decreasing trend ratios in the previous sections.

Discriminant Analysis

Discriminant analysis is used to predict group membership. This technique is used to classify individual/objects into one of the alternative groups on the basis of a set of predictor variables. The dependent variable in discriminant analysis is categorical and on a nominal scale, whereas the independent or predictor variable are either interval or ratio scale in nature.

Model of Discriminant Analysis

The mathematical form of the discriminant analysis model is:

$Y=b_0+b_1X_1+b_2X_2+b_3X_3+……..+b_kX_k$

Where

X= predictor or independent variable, Y= dependent variable,

B= coefficient of independent variable

The method of estimating b based on the principle that the ratio of between group sum of squares to within group sum of square be maximized. This will make be groups differ as much as possible on the values of the discriminant function. After having estimated the model the b coefficients are used to calculate Y, the discriminant score by substituting the values of Xs in the estimated discriminant model. By using SPSS, the discriminant analysis has been applied.

Identification of Dominating Ratio

In discriminant analysis the researcher first used the Wilks Lambda Test for the validity of the model. Wilks Lambda test is a test, which identifies whether the variables contributes significantly to discriminant function, if the Wilks Lambda value is closer to zero, the model is more contributed by the variable. The test also explains the group membership through Chi-Square test. If the P value is less than 0.05, it concludes the corresponding function explains the group membership well. Table 1 show the Chi-Square and Wilks Lambda values.

Table 1 Wilks' Lambda Test

Source: Computed Secondary Data

Test of Function (s)	Wilk's Lambda	Chi-Square	Df	Sig.
1	0.008	19.346	8	.013

Table 1 shows the significance of the discriminant model. The

value of Wilks Lambda is 0.008 that is 0.8 per cent of the variables not explained by the group of differences. P value is 0.013 which is less than the cutoff point 0.05. Therefore, the researcher concludes that there is a relationship between dependent and independent variables. Hence, the researcher further analyses the other tests for effectiveness of the model.

Table 2 Classification of Results [b]

Source: Computed Secondary Data

		Year	Predicted Group Membership		Total
			2007-2011	2012-2016	
Original	Count	2007-2011	5	0	5
		2012-2016	0	5	5
	%	2007-2011	100.0	.0	100.0
		2012-2016	.0	100.0	100.0

a.100.0 % of original grouped cases correctly classified.

Table 2 shows the classification results of discriminant model. The Overall results explain that 100 per cent of the cases are correctly classified in the model.

Eigen values

Table of Eigen value is often cited in discriminant function analysis. The Eigen values describe the effectiveness of discriminant function. Larger Eigen values indicate that the discriminant function more useful in distinguishing the groups and canonical correlation indicates a function that discriminates well. The Eigen values are presented in the Table 3

Table 3 Eigen Values

Function	Eigen Value	% of Variance	Cumulative %	Canonical Correlation
1	125.013[a]	100.0	100.0	0.996

Source: Computed Secondary Data

a. Function 1 canonical discriminant functions were used in the analysis.

Eigen value indicates the proportion of variance explained. A large Eigen value is associated with a strong function. A high correlation indicates a function that discriminates well. The present correlation is 0.996 is extremely high and also 99.2 per cent of variance are explained by the model.

Table 3 presents, the unstandardized canonical co-efficient of the discriminant model. The purpose of unstandardized canonical discriminant analyses is to find out the best co-efficient estimation to maximize the difference in mean discriminant score between groups.

Table 4 Canonical Discriminant Function Unstandardized Co-efficient

Source: Computed from Secondary data

S.No	Factors	Function
1	Loans to Advances Ratio	-53.143
2	Deposits to Number of employees Ratio	14.167
3	Volume of Business to Number of employees Ratio	2.370
4	Outside Liabilities to Net worth Ratio	4.608
5	Deposits to Owned funds Ratio	-3.421
6	Deposits to Total Asset Ratio	0.124
7	Net NPA to Net Advances Ratio	0.037
8	Cash to Reserve Ratio	10.078
	(Constant)	(-40.538)

The Canonical discriminant function co-efficient indicates the unstandardized scores concerning the independent variables. It is a list of co-efficient of the unstandardized discriminant equation. Each ratio's discriminant score would be computed by entering the raw data for each of the variable in the equation. The equation of discriminant function is D = -40.538+ (Loans to Advances Ratio X -53.143) + (Deposits to Number of employees Ratio X 14.167) + (Volume of Business to Number of employees Ratio X 2.370) + (Outside Liabilities to Net worth Ratio x 4.608) + (Deposits to Owned funds Ratio x -3.421) + (Deposits to Total Asset Ratio x 0.124) + (Net NPA to Net Advances Ratio x 0.037) + (Cash to Reserve Ratio x 10.078)

The standard canonical discriminant Co-efficient can be used to rank the importance of variables in the analysis. A high standardized discriminant function co-efficient describes that the grouped variable differ a lot among the variables in the group.

Table 5 Standardized Canonical Discriminant Function of Co-Efficient

Source: Computed Secondary Data

Particulars	Function
Outside Liabilities to Net worth Ratio	8.812
Deposits to Number of employees Ratio	3.391
Volume of Business to Number of employees Ratio	3.236
Cash to Reserve Ratio	2.648
Deposits to Total Asset Ratio	1.107
Net NPA to Net Advances Ratio	.559
Loans to Advances Ratio	-5.147
Deposits to Owned funds Ratio	-10.475

Table 5 provides an index of the importance of each predictor through standardized regression coefficient. It indicates that outside liabilities to net worth ratio 8.812 is the most important ratio followed by deposit to number of employees ratio 3.391, Volume of Business to Number of employees Ratio 3.236, Cash to Reserve Ratio 2.648, Deposits to Total Asset Ratio 1.107, Net NPA to Net Advances Ratio 0.559, Loans to Advances Ratio -5.147, and Deposits to Owned funds Ratio -10.475. These eight variables are discriminate variable to predict the performer and best performer of the bank as stated earlier.

Conclusion

It can be concluded from the Box's M and Wilks' Lambda Model, the outside liabilities to net worth ratio is the more dominating ratio followed by deposit to number of employee's ratio. Loans to advances ratio and deposits to owned funds ratio are the least dominating ratios for measuring the efficiency of the IDBI Bank.

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