Original Article

Journal of Social Welfare and Management
Volume 16 Number 1, January - April 2024
DOI: http://dx.doi.org/10.21088/jswm.0975.0231.16124.2

Impact of Income Diversification on Capital Market Investment Decision: A Study on Indian Public Sector Banks

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How to cite this article:

Brajaballav Pal, Saswata Choudhury, Saoni Pal. Impact of Income Diversification on Capital Market Investment Decision: A Study on Indian Public Sector Banks. J Soc Welfare Manag. 2024;16(1):15–19.

Abstract

Income diversification strategy is one of the useful tools of risk management technique. Banks have identified different sources of income apart from their traditional source of income. Capital market is one of such source of income identified by the banks today. Every year banks invest a large volume of fund in capital market. In this study it is attempted to observe the impact of income diversification on the capital market investment decision of the public sector banks in India. For this purpose data are collected from 12 public sector banks for 5 years period from 2017 to 2021. Variants of panel data regression analysis are applied in this study. The result revealed that there is a significant impact of income diversification on the capital market investment of Indian public sector banks.

Keywords: Income Diversification; Performance; Capital Market Investment.

JEL Classification: G21, G11

INTRODUCTION

The strategy of income diversification is considered today as an essential tool of risk diversification. As a financial institution commercial banks are also exploring different channels of revenue diversification to reduce the risk of their asset loss. Traditionally banks' major source of earning is in form of the interest income which arises out of their lending activities. In addition to thatbanks also earn non-interest income from their other services. Though banks today are providing various innovative products and services to their customers but still they are heavily depending upon the interest income for growth, competition and sustainability.

With an objective of diversification of income source, banks are also exploring the channel of capital market investments. Like real estate sector every year Indian banks also invest a large volume of funds in the capital market. From different existing literatures it is observed sometime the income diversification practice helped the banks to reduce their risk and also to improve their performance.

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Received on: 11.12.2023

Accepted on: 02.02.2024

Sometime this kind of income diversification practice went wrong for the banks, with increased risks and adverse financial performance. In this article it is attempted to find out whether there is an impact of income diversification strategy of the public sector banks is affecting their investment decision in the capital market.

REVIEW OF LITERATURE

Ahmed, M. M. (2017) examined whether the focus towards non-interest income improved the financial performance of the Indian banks or not. The result indicated that the increased non-interest income improved the profitability of the banks. Moreover, income diversification helped more the banks with poor asset quality.

Alhassan, A. L. (2015) investigated the non linear association between diversification of income and the bank efficiency. The entire study was based upon 26 Ghanaian banks during the period 2003-2011. Stochastic frontier analysis was applied at the initial stage. Later Tobit regression analysis was applied in this study to find out the impact between the variables. The result of the analysis revealed the connection between the diversification and efficiency of the Ghanaian banks.

Amediku, J. (2012) studied how the income source diversification affected the performance of the Ghanaian banks. The data were collected on 3 major banks in Ghana from the year 2006 to 2010. The result disclosed that the diversification of portfolio helped to improve the banks' performance.

Antao, S., and Karnik, A. (2022) studied the association between non-interest income and bank risk. Data were collected from 24 Asian countries over 25 years. The result revealed that improved non-interest income helped to reduce the banks' risk.

Brahmana, R., Kontesa, M., and Gilbert, R. E. (2018) studied the impact of diversification of income on the performance of Malaysian banks. The study period was during 2005 to 2015. The sample was taken out of 15 banks. Fixed Effects Panel Regression was applied in this study. The result revealed that the diversification of income helps to reduce the risk hence improved the performance of the banks.

Busch, R., and Kick, T. (2009) studied the effect of non-interest income on the performance of German banks. The study period was from 1995 to 2007. Data were collected on German savings bank, cooperative banks and private banks. The result revealed that non-interest income impacted positively on the performance of German banks.

Chiorazzo, V., Milani, C., and Salvini, F. (2008) investigated the connection between profitability and non-interest income of Italian banks. The data were collected from the year 1993 to the year 2003 from the Italian Banking Association. Panel data regression analysis was applied in this study to find out the connection. The result revealed an evidence of connection between the profitability and non-interest income.

Gurbuz, A. O., Yanik, S., and Ayturk, Y. (2013) studied the association between non-interest income and the risk-adjusted performance of the Turkish deposit banks. For the purpose of the study data was collected on 26 banks during 2005-2011. System Generalized Method of Moments Estimators wasapplied onan unbalanced panel dataset in this study. The result revealed that the income diversification improved the risk adjusted performance of the selected banks.

Nguyen, K. N. (2019) studied the connection between revenue diversification and the bank performance. For the purpose of the study data were collected on 26 commercial banks, both listed and unlisted,in Vietnamduring 2010–2018. Generalized Method of Moment modelling techniques is used in this study. The result revealed that increased diversification reduces the profitability of the banks and vice versa.

Ochenge, R. (2022) studied the connection between the diversification ofincome and Kenyan bank performance. For this study data were collected on 30 banks during 2010-2020. The panel data regression analysis revealed that the diversification of revenue helps to improve the banks' performance.

Phan, D. T., Nguyen T. T., and Hoang T. T. (2022) investigated the effect of diversification of income on the performance of business of the Vietnamese commercial banks. The period of study was during 2010-2020. The financial data were collected from 29 commercial banks those were listed with Ho Chi Minh stock exchange. For the purpose of the analysis the GMM regression method was applied. The result revealed that the income diversification was one of the major factors influencing the business performance of the Vietnamese banks.

Sharma, S., and Anand A. (2018) examined the impact of income diversification on the banks' performance of the BRICS countries. Sample was taken out of 169 banks for the period 2001-15. Fixed Effects model of panel data regression analysis was used for empirical analysis. From the result it is observed that income diversification helps to improve performance of the banks.

Vidyarthi, H. (2020) examined the association between diversification of income and the performance of the Indian banks. Data were obtained from 38 BSE listed Indian banks for the period 2005-2016. Data Envelop Analysis and also the panel data regression analysis were applied in this study. The result revealed that limited volume of diversification helps the banks to improve their performance.

Vallascas, F., Crespi, F., and Hagendorff, J. (2012) investigated whether the diversification helped to improve the pliability of banks during crisis periods. This study is based upon Italian banks. The effect of income diversification was analyzed on the bank performance in this regard. The result revealed that the bank's primary lending activities

Research Gap

From the review of existing literatures it is observed that existing studies are mainly focussing upon the impact of income diversification on the bank risks as well as performances. But very limited studies have discussed about the effect of diversification of income on the banks' investment decisions.

Objective of the study

This study is focussing upon to find out whether there is an impact of income diversification on the capital market investment decision of the banks or not.

RESEARCH METHODOLOGY

The entire data are collected on 12 public sector banks for the period of 5 years, starting from 2017 to 2021, from the Reserve Bank of India database. This is because during these 5 years a significant volume of restructuring took place in the Indian banking industry. Volume of Capital Market Investment (CMI) of the banks is used here as the dependent variable. On the other hand, Interest Income (II) and Other Income (OI) are considered here as the independent variables. Interest income of banks is generated from the traditional banking activity i.e., from providing loans to the customers. Whereas the source of other income is from additional, value added services provided banks to their customers. From the dataset summery statistics were obtained initially, thereafter correlation and regression analyses are applied. Variants of Panel Data Regression Analysis are used here for empirical analysis. Moreover, different statistical tests are also used as per the necessity of the study.

ANALYSIS AND FINDINGS

Table 1: Descriptive Statistics

Variables	Observations	Mean	SD	Minimum	Maximum
CMI	60	3716.40	5166.27	105.98	24142.08
II	60	47834.96	59774.72	6973.91	265150.60
OI	60	6947.00	9605.07	23.05	44600.69

From Table 1 it is observed that the average investment in capital market by banks is around Rs. 3,700 Crore during the study period. The minimum investment during this period is standing around Rs. 106 Crore whereas the maximum investment is around Rs. 24,000 Crore. The average interest income during this period is around Rs. 48,000 Crore. The maximum interest earned during this period is around Rs. 2,65,000 Crore whereas he minimum earning under this head is around Rs. 7,000 Crore. The other income of the banks during this period is averaged around Rs. 7,000 Crore. The maximum earning under this head is observed around Rs. 45,000 Crore whereas the minimum earning is standing around Rs. 23 Crore.

Table 2: Correlation Matrix

Variables	CMI	II	OI
CMI	1.00	-	-
II	0.86* (0.00)	1.00	-
OI	0.83* (0.00)	0.83* (0.00)	1.00

From the correlation matrix, portrayed in Table 2, it is observed that capital market investment has significant correlation with the independent variables interest income and other income. Moreover, these correlations, in both the cases, are positive in nature.

Table 3: Regression Analysis (Dependent Variable: CMI)

Model /Variables	Fixed Effects Model	Random Effects Model
Interest Income (II)	-0.069* (0.00)	0.021* (0.04)
Other Income (OI)	0.135* (0.00)	0.209* (0.00)
Constant	6106.614* (0.00)	1212.642 (0.13)
F / Chi-Square	20.37* (0.00)	40.01* (0.00)
R-Square	62.14%	77.98%
Hausman Test	Fixed Effects	
*Significant at 5% level		

Table 3 reveals the results under two models of panel data regression analysis. Hausman test have a preferenceof Fixed Effects model to Random Effects model. The selected model can able to explain around 62% movement of the dependent variable CMI. The p-value (0.00) of F-Statistics (20.37) of the model authenticates its goodness of fit. The model also reveals that both the dependent variables have significant impact on the dependent variable. Interest income has negative impact on the capital market investments whereas other income has positive impact on it.

Table 4: Breusch and Pagan Lagrangian Multiplier Test

-	Variance	SD
CMI	2.67e+07	5166.277
E	1681982	1296.912
U	2119118	1455.719
Chi-Square	6.64* (0.00)	
*Significant at 5% level		

Breusch-Pagan Lagrangian Multiplier Test is applied here to find out the existence of panel effect in the dataset. The resultin Table 4 confirms the existence of panel effect in the dataset, so there is no necessity to use panel ordinary least square method further.

Scope of Future Study

This study is conducted on public sector banks in India. Further study can also be conducted by considering the private sector banks. Moreover, study may be conducted by taking all the commercial banks working in India.

CONCLUSION

This study is conducted to find out whether the banks' income diversification affects the capital market investment decision or not. The result clearly reveals that there is an impact of income diversification on the capital market investment decision of the Indian public sector banks. Theincrease in the interest income helps to reduce the capital market investment and vice-versa. It is due to the complex nature of capital market investment itself. The interest income arises out of the traditional activities of the banks. When banks are reluctant to diversify their business activities, as well as source of income, capital market investment decreases. On the other hand, if banks are trying to diversify their activities so as to diversify their source of income, capital market investment increases. All the incomes generated from the non-traditional activities are headed under other income. The result also clearly justifies that the other income has a favourable impact on the capital market investment of the banks.

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