International Journal for Research in Engineering Application & Management (IJREAM)
ISSN : 2454-9150 Vol-04, Issue-10, Jan 2019

Income Analysis of Indian Banks - Bank GroupWise Investigation on Non-Interest Income

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Abstract - Changing trends in customers' needs and active competition in the banking sector are directing banks to search for new ways to generate income. Today banks are choosing to diversify their revenues to reduce risk and increase their profitability; acceptance on various non-interest incomes generating activity along with the traditional banking activity is one of the major steps with this regard. Considering the importance of non-interest income in the banking profits and performance, this study aims to examine whether the diversification effort in India banks for past years positively affects to banks income structure. Banks' management and regulators can use the findings from this research to analyze the role of non-interest income in risk-reduction as well as value creation for their stakeholders

Key words: Indian banking system, non-interest income and interest income.

I. Introduction

A bank to a common man is a financial institution with the preliminary function of managing money; to accomplish this a bank makes loans that are funded by account holder deposits.

Today, traditional banking activities have shown a declining trend in quantitative terms in most of the developed economies (Sastri, Samuel, & Gangadaran, 2004). Increase in global competition along with the rapid change in the financial environment, pressure from regulatory bodies both global and local and the unpredictable nature of interest based income in the banking system has led to the emergence of non-traditional ways of income generation (Ismail, Hanif, Choudhary, & Ahmad, 2015).

With the acceptance of globalization, the needs of the people have changed with time; they seek for immediate gratification and are ready to spend enough money from their earnings to get their work done at the fastest possible time. This has created an impact in the financial market and has led to the popularity of alternate sources of funds in the money market leading to an increase in the efficiency and quality of financial services across the globe (Hakimi, Hamdi, & Djelassi, 2012).

When the banking industry in the developed economies started to diversify and adapt to non-interest income deployment of funds for their survival, a considerable growth was noticed in the industry. The U.S commercial banking industry in the year 2004 accounted over 40 percent of their operating income from non-interest income, (Sastri, Samuel, & Gangadaran, 2004) this has been increasing ever since.

When we take a close look at the Indian financial system, we can understand that it has gone through dramatic changes in both the economic and the financial sector.

The Indian banking system comprises of both private as well as public sector banks with an addition of foreign banks in the recent decade. The financial and the banking sector reforms in the early 1990's under the chairmanship of M.Narasimham gave the banking industry a new and refreshed look. Liberalization in the industry gave way to an expansion of banks' activities and also the adaptation of foreign technology, this leads to increase in competition among existing banks and is also the reason for the shift in the concentration of the flow of funds from the interest based income activities to non-interest income activities.

Today incomes in banks are categorized into interest income and non-interest income. When interest income mainly comprises of all the returns earned from lending activity, non-interest income comprises of three categories of income, that is commission margin, trading margin and income margin (Chowdhury & Chowdhury, 2010).

II. Literature Review

The Banking industry in India was heavily regulated until 1991. With the new banking policy came a liberalized banking system that suited the changing needs of the industry and also grew with fast moving technology.

In the past, the main source of income for banks was interest income, or the income they earned from lending

 DOI : 10.18231/2454-9150.2018.1397

ISSN : 2454-9150 Vol-04, Issue-10, Jan 2019

loans and making advanced payments. However, in recent times banks, rely heavily on other sources of income (Chowdhury & Chowdhury, 2010). In this extremely competitive financial environment, banks are now more concerned about income generation and its sources. They are in search of new ways to create income in addition to their traditional methods (Sharm & Sharma , 2017).

A study by (Stiroh, 2002) focusing on the US banking industry that was the most dynamic at that time indicated that non-interest income played a major role in banking revenues. This can be clearly noted through further studies made by him in the US showing a rise in the growth of non-interest income, which accounted to 43% of net operating revenues in 2001 from only 25% in 1984.

(Oniang'O, 2014) A study conducted in Kenya concluded that there was a positive relationship between non-interest income and profitability of banks in the commercial platform. He suggested that commercial banks should adhere to diversification, to expand business and boost their income and also suggested that Government policies play an important role in encouraging commercial banks to increase their capital and asset structure. These banks are required to make investments in efficient management systems and in technologies that have the ability to boost performance by reducing operation cost. He believed that by adapting to such conditions commercial banks will have the capacity to survive and grow in this competitive environment.

(Ismail, Hanif, Choudhary, & Ahmad, 2015) Investigated the relationship between income diversification and the performance of the banks in Pakistan and found a positive relationship between the two. The paper indicated that more diversification leads to better performance of banks.

(DeYoung & Roland, 2001) Suggested three reasons why non-interest income may increase the volatility of bank earnings. Fee-based banking activities are not relationship-based, therefore reducing any risk arising due to fluctuating interest rates or other economic conditions. The operating leverage is greater in the case of fee-based banking activities when compared to lending activities, making bank revenues more vulnerable. Lastly, fee-based banking activities have minimal fixed asset requirements. Thus, fee-based activities provide greater financial leverage than lending activities.

(Upadhyay, Singh, Singh, & Singh, 2016) Studied, how non-interest income affects the profit-making ability of a bank and concluded that the resulting decrease in the interest income along with the declining credit and interest rate risk had resulted in a tremendous shift in the traditional banking system. (Sastri, Samuel, & Gangadaran, 2004) Suggested that liberalization of the banking sector and the competition that has entered the banking sector has increased the risk in the traditional banking business, therefore, the increase in non-interest income has helped to stabilize income and risk.

The size of the bank has a major impact on the levels of non-interest income (Hakimi, Hamdi, & Djelassi, 2012). They also agreed to the fact that the growth improves the banking profits and reduces the risk of the lending operation. This is also agreed by (Williams & Prather , 2010) in their article "Bank Risk and Return: The Impact of Bank Non-Interest Income" they further added that an increased disclosure of banks non-interest income has lead to a better understanding of the factors affecting bank risk.

Today bank shows high dependence on fee-based income or non-interest income (Chowdhury & Chowdhury, 2010), however (Williams & Prather , 2010) suggest that diversification alone will not help reduce all the risk in the industry it can reduce only a part of the risk, adding to this (Alhassan , 2015) in his article "Income Diversification And Bank Efficiency In An Emerging Market" suggested that the efficiency of diversification into non-interest income generating activities are at lower level in the initial stages, it is only when the firm grows and takes up the risk to achieve higher level diversification the efficiency of investment increase.

The Reserve Bank of India (RBI), advocated banks to consider non-interest incomes as a significant source of income in its report "Trend and Progress of Banking in India, 2002-03". The report states, "The future profitability of public sector banks would depend on their ability to generate greater non-interest income and control operating expenses."

Promoting non-interest income in banks will help them to face global challenges with a more confident approach (Ga, Ravichandran, & Gopinathar , 2016) Few components of Non-Interest Income are as under:

INCOME EARNED FROM REMITTANCE OF BUSINESS	Cheque
	Traveler`s Cheque
	Demand Draft
	Mail Transfer or Mail Orders
	Real Time Gross Settlement
	National Electronic Funds Transfer
	Society for Worldwide Interbank Financial Telecommunication Transfer
INCOME EARNED FROM THIRD PARTY PRODUCT	Mutual Funds
	Insurance Products
	Issue of Credit Card to Customer
INCOME RECEIVED THROUGH CONTINGENT LIABILITY	Letter of Credit
	Bank Guarantee
INCOME FROM	Payment of Pension

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SERVICES RENDERED TO THE GOVERNMENT	Collection and Payment of Public Provident funds
	Government Bond Collection
	Tax Collection
	Payments or Receipts work for Railways and Postal Services
	Sub-Treasury and Treasury Business
	Stamp duty collection
INCOME FROM WEALTH MANAGEMENT SERVICES	Income from Third Party Product 1. Mutual Funds 2. Insurance Products (life and non-life) 3. Stocks & Stocks Trading
	Equity Linked Investment
	Structured Investment Products and Derivatives
	Foreign Exchange
	Sale of gold, silver and other precious metals
INCOME FROM OTHER SOURCES	Demat Account
	Dipository Participants Account

Objectives

This study is conducted to understand the dynamics of interest income and non- interest income in the banking industry. The paper has been undertaken keeping in view the following objectives.

- To analyze the growth of non-interest income as a source of revenue for the banks in India during the study period.
- To analyze the role of non-interest income and the total income of the banking sector during the study period.

III. Methodology

The study is exploratory and descriptive in nature; the data collected for this purpose is from the annual financial report of selected banks, records and documents from the Reserve Bank of India. This research revolves around all public sector banks (State Bank of India and its associates and nationalized banks), private sector banks and foreign banks in India for the period 2008-2009 to 2017 – 2018. The main aim of this paper is to analyze non-interest income of all the banks in India for a study period of 10 years. The tools used for the study include comparative statements and regression analysis.

The study examines the relationship between the total income of a bank and its non-interest income, and the impact it has on each other. The dependent variable for this study is total income and the independent variable is interest income and non-nterest income. A regression analysis for each bank group is performed using Least square method in e-views.

IV. Analysis and Interpretation

Bank Group-wise Analysis of Non-Interest Income

Bank group wise analysis of interest and non-interest income helps us to get a clear picture of the growth of non-interest incomes in each group during the study period.

Analysis of Non-Interest Income in public sector banks in India

Table- 2 shows the comparison of total income, non-interest income and interest income of all the public sector banks in India from the year 2008-2009 to 2017-2018. It can be noted that non-interest income has been gradually increasing during the study period. Percentage of non-interest income was highest at 14.3% in the year 2017-2018, and it was lowest at 9.3% in the year 2013-2014. The average non-interest income of all the public sector banks is Rs.6,15660.08 crore.

Table- 1 **(Amount: Rs. in Crore)**

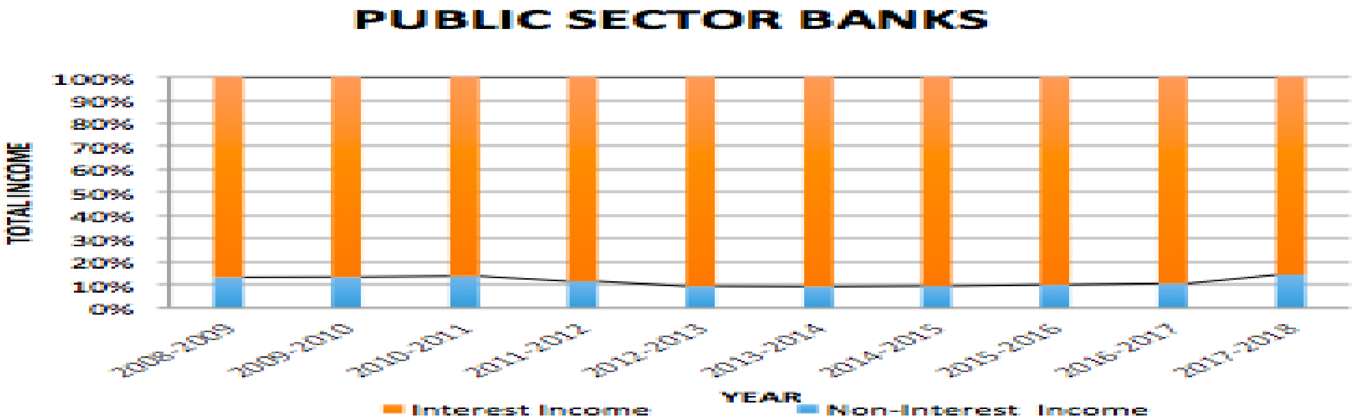
PUBLIC SECTOR BANKS					
Year	**Non-Interest Income**	**Interest Income**	**Total Income**	**Percentage of Non-Interest Income on total income**	**Percentage of Interest Income on total income**
2008-2009	3,27,970.99	21,30,745.62	24,58,716.61	13.3%	86.7%
2009-2010	4,24,662.15	27,30,882.10	31,55,544.25	13.5%	86.5%
2010-2011	4,88,932.30	30,59,825.50	35,48,757.81	13.8%	86.2%
2011-2012	4,79,649.30	36,61,345.10	41,40,994.40	11.6%	88.4%
2012-2013	5,03,996.74	48,47,318.18	53,51,314.91	9.4%	90.6%
2013-2014	5,67,629.57	55,48,717.82	61,16,347.39	9.3%	90.7%
2014-2015	6,51,292.25	62,02,276.91	68,53,569.15	9.5%	90.5%
2015-2016	7,55,974.75	67,61,848.49	75,17,823.24	10.1%	89.9%

 DOI : 10.18231/2454-9150.2018.1397

ISSN : 2454-9150 Vol-04, Issue-10, Jan 2019

2016-2017	8,18,999.37	69,06,437.57	77,25,436.94	10.6%	89.4%
2017-2018	11,37,493.40	68,02,762.09	79,40,255.48	14.3%	85.7%
MEAN	**6,15,660.08**	**48,65,215.94**	**54,80,876.02**		

Chart- 1



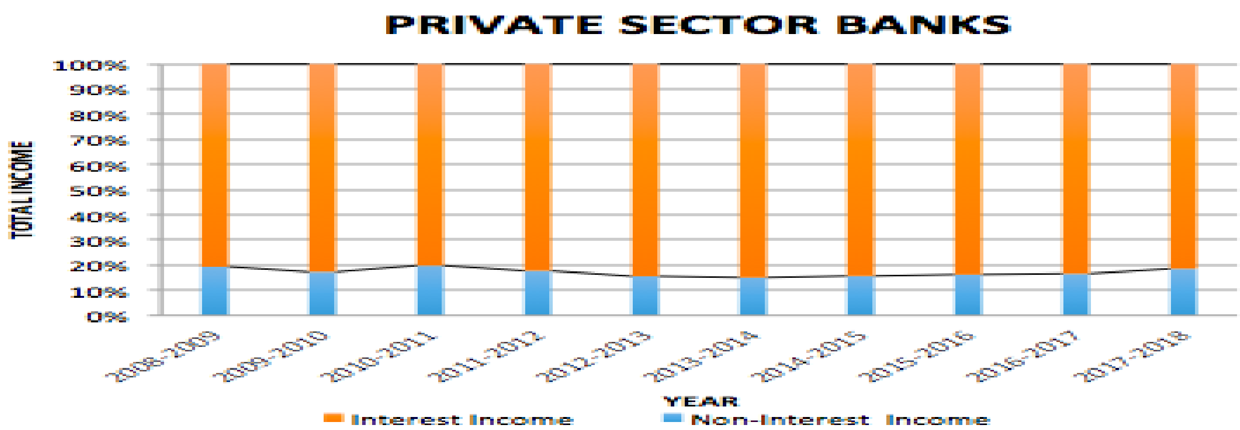
Analysis of Non-Interest Income in private sector banks in India

Table 3 depicts the percentage of non-interest income of all the private sector banks in India from the year 2008-2009 to 2017-2018. Percentage of non-interest income was highest at 19.8% in the year 2010-2011, and it was lowest at 15.2% in the year 2013-2014. The average non-interest income of all the private sector banks is Rs.3,21,444.75 crore.

Table- 2 (Amount: Rs. in Crore)

PRIVATE SECTOR BANKS					
Year	**Non-Interest Income**	**Interest Income**	**Total Income**	**Percentage of Non-Interest Income on total income**	**Percentage of Interest Income on total income**
2008-2009	1,70,063.09	7,09,911.87	8,79,974.96	19.3%	80.7%
2009-2010	1,78,602.06	8,50,713.62	10,29,315.69	17.4%	82.6%
2010-2011	2,04,230.66	8,28,064.30	10,32,294.95	19.8%	80.2%
2011-2012	2,08,733.79	9,67,130.93	11,75,864.72	17.8%	82.2%
2012-2013	2,50,480.43	13,45,554.89	15,96,035.32	15.7%	84.3%
2013-2014	2,97,926.85	16,64,863.83	19,62,790.69	15.2%	84.8%
2014-2015	3,54,742.07	18,91,359.21	22,46,101.28	15.8%	84.2%
2015-2016	4,18,417.46	21,41,454.60	25,59,872.06	16.3%	83.7%
2016-2017	4,96,543.03	24,79,837.75	29,76,380.78	16.7%	83.3%
2017-2018	6,34,708.11	27,91,687.98	34,26,396.08	18.5%	81.5%
MEAN	**3,21,444.75**	**15,67,057.90**	**18,88,502.65**		

Chart- 2



 DOI : 10.18231/2454-9150.2018.1397

ISSN : 2454-9150 Vol-04, Issue-10, Jan 2019

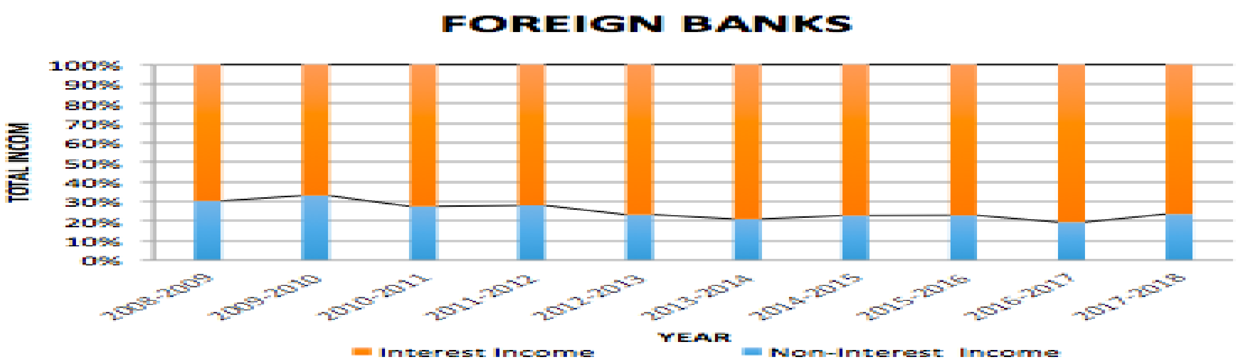
Analysis of Non-Interest Income in foreign banks in India

Table 4 shows a comparison of total income, non-interest income and interest income of all the foreign banks in India from the year 2008-2009 to 2017-2018. Non-interest Income was highest at 32.9% in the year 2009-2010, and it was lowest at 19.3% in the year 2016-2017. The average non-interest income of all the foreign banks is Rs. 1,25,388.99 crore.

Table- 3 (Amount: Rs. in Crore)

FOREIGN BANKS					
Year	**Non-Interest Income**	**Interest Income**	**Total Income**	**Percentage of Non-Interest Income on total income**	**Percentage of Interest Income on total income**
2008-2009	1,05,876.16	2,44,165.37	3,50,041.52	30.2%	69.8%
2009-2010	1,48,939.75	3,03,220.37	4,52,160.12	32.9%	67.1%
2010-2011	99,512.95	2,63,896.59	3,63,409.54	27.4%	72.6%
2011-2012	1,10,118.41	2,84,930.67	3,95,049.08	27.9%	72.1%
2012-2013	1,08,959.47	3,59,966.09	4,68,925.56	23.2%	76.8%
2013-2014	1,12,286.17	4,22,486.40	5,34,772.57	21.0%	79.0%
2014-2015	1,34,892.94	4,57,688.84	5,92,581.78	22.8%	77.2%
2015-2016	1,49,702.30	5,04,453.66	6,54,155.96	22.9%	77.1%
2016-2017	1,25,387.69	5,23,175.19	6,48,562.87	19.3%	80.7%
2017-2018	1,58,214.04	5,13,807.28	6,72,021.32	23.5%	76.5%
MEAN	**1,25,388.99**	**3,87,779.04**	**5,13,168.03**		

Chart- 3



Bank Group-wise Regression Analysis of Non-Interest Income

A regression analysis was performed in order to understand the relationship between total income, which is the dependent variable and non-interest income, which is the independent variable in this case. The analysis was performed for each bank group to understand the relationship between the variables and its impact in each group after a unit root test was performed at a significance level of 10%. Below is the regression test for each bank group using Least square method in e-views. For this analysis, non-interest income is abbreviated as NII and Total income as TI.

Regression analysis of Public Sector Banks.

The regression output on table 5 shows that non-interest income has a significant impact on the performance of public sector banks in India. The p-value 0.0010 and the coefficient value 7.550027 supports the analysis and further implies that there is a strong positive relationship between non-interest income and the total income of public sector banks.

Table- 4

Dependent Variable: TI
Method: Least Squares
Date: 11/09/18 Time: 14:25
Sample: 2008 2017
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	832625.9	975723.4	0.853342	0.4183
NII	7.550027	1.489078	5.070268	0.0010

R-squared	0.762665	Mean dependent var	5480876.
Adjusted R-squared	0.732998	S.D. dependent var	2044223.
S.E. of regression	1056296.	Akaike info criterion	30.75529
Sum squared resid	8.93E+12	Schwarz criterion	30.81581
Log likelihood	-151.7765	Hannan-Quinn criter.	30.68890
F-statistic	25.70762	Durbin-Watson stat	0.725653
Prob(F-statistic)	0.000965		

 DOI : 10.18231/2454-9150.2018.1397

ISSN : 2454-9150 Vol-04, Issue-10, Jan 2019

Regression analysis of Private Sector Banks.

Table- 5

Dependent Variable: TI
Method: Least Squares
Date: 11/09/18 Time: 14:28
Sample: 2008 2017
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	55066.51	129605.4	0.424878	0.6821
NII	5.703736	0.366884	15.54643	0.0000

R-squared	0.967960	Mean dependent var	1888503.
Adjusted R-squared	0.963956	S.D. dependent var	895329.8
S.E. of regression	169981.8	Akaike info criterion	27.10163
Sum squared resid	2.31E+11	Schwarz criterion	27.16214
Log likelihood	-133.5081	Hannan-Quinn criter.	27.03524
F-statistic	241.6915	Durbin-Watson stat	0.891797
Prob(F-statistic)	0.000000		

The test results on table 6 show the regression output of non-interest income and the total income of private sector bank in India. The p-value 0.000010 and the coefficient value 5.703736 imply that non-interest income has a significant impact on the performance of private sector banks in India.

Regression analysis of Foreign Banks

Table- 6

Dependent Variable: TI
Method: Least Squares
Date: 11/09/18 Time: 14:31
Sample: 2008 2017
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-22879.95	180220.1	-0.126956	0.9021
NII	4.275080	1.419176	3.012367	0.0168

R-squared	0.531461	Mean dependent var	513168.0
Adjusted R-squared	0.472894	S.D. dependent var	124224.9
S.E. of regression	90189.84	Akaike info criterion	25.83408
Sum squared resid	6.51E+10	Schwarz criterion	25.89459
Log likelihood	-127.1704	Hannan-Quinn criter.	25.76769
F-statistic	9.074355	Durbin-Watson stat	0.855221
Prob(F-statistic)	0.016753		

The regression test result on table 7 indicates that non-interest income has a significant impact on the performance of foreign banks in India. The p-value 0.0168, which is less than 0.05, supports the analysis and further implies that there is a strong positive relationship between non-interest income and the total income of public sector banks.

When comparing the output of all the banking groups, we can understand that non-interest income and total income share a positive relationship and they move in the same line of growth. Thus, a unit increase in non-interest income can lead to a drastic increase in total income. Also, both the public and private have a strong R squared value indicating that non-interest income can be relieved on to explain a good amount of variations in total income, but when comparing foreign banks with public sector and private sector banks the foreign banks rely less on the non-income, where the R square is explained only 53.1461%.

We can further conclude that positive relationship between non-interest income and total income is the reason for the growth and acceptance of fund based income sources in the Indian banking industry. The impact is seen in the day-to-day progress and the services provided by banks to its customers.

V. Conclusion

The study focused on analyzing the impact of the growth of non-interest income as a source of revenue for all the public sector banks (State Bank of India and its associates and nationalized banks), private sector banks and foreign banks in India. The data analyzed revealed that there is a significant impact of non-interest income on the total income of banks during the study period. This study has not taken into consideration mergers or emergence of new banks within the study period, the data taken from the Reserve Bank of India is a cumulative total of all the banks within in the group for each year during the study period.

Banks today have changed the way in which they operate and this has led to a huge shift in the services rendered and the incomes earned by them as well. This research paper concludes that the income originating from traditional lending activity is still a major part of the income in the Indian banking industry, however banks have started to show a positive approach towards non-interest income in the recent years. The liberalization of banking sector, competition and soft interest rates in India are the major reasons for the increase in non-interest income activities.

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