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# Analysis of Income Diversity of Commercial Banks In India

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**Abstract**

*The diversity of banking operations has transformed the banking business model in India. Traditional banking was reliant on the interest income generated from disbursement of loans and advances however there has been a transition in the banking business over a decade. The changing facets of service offerings by commercial banking has resulted into upsurge in fee based revenue. Using a sample of 20 major banks the paper aims to identify the banks concentration of non-traditional activities and consequently its impact on reducing the volatility of profits. Section I of the study will focus on the long run trends in the composition and amount of non-interest income. Section II will assess the relationship between the bank product mix, non-interest income and banks stability. The study exhibits that smaller banks are more involved in non interest earning activities relative to their large counterparts. Panel data regression analysis and review of literature supports that technological factor has been influential in driving the non interest income further it is evidenced that there exists a positive relationship between fee based income and banks financial performance.*

***Keywords:*** *Non- Interest Income, Financial Performance, Profitability, Product Mix and Stability*

## Introduction

Banking sector is an integral part of the economy; several reforms have been initiated in banking sector which led to financial innovations. Financial innovation reduces costs, adds value to products and services for satisfying the expectations of the customers. The subject of Banking has dual perspective firstly fulfilling the customer expectations and secondly a socialistic approach through overall economic development. Banking sector reforms have paved innovative avenues of businesses and business practices. Traditionally banking business was restricted to accepting of deposits and providing loans and advances but the opening up of economy in the year 1991 has brought about deregulation and structural changes in the banking sector and has exposed banks to newer challenges. Traditionally banks have been thought of as firms which take deposits and make loans, and profit by the difference between the costs of the former and the earnings from the latter activities. According to Stiroh (2000) European banks have widened their product offerings to become universal banks during the 1990s. Goddard et al (2004) provided that banks are now able to participate in what were previously regarded as inaccessible domestic and foreign markets

The spread of banking system has been a major factor in promoting financial intermediation in the economy and in the growth of financial savings. Also the rising income levels have brought a steady rise in the household sector's savings rate which has rapidly increased the demand for retail financial products. Globalization has made way for the entry of foreign banks in India, these banks with their advanced technology and varied product range posed a major challenge for the Indian banks which compelled them for innovations in their banking business practices. Banks product development and differentiation; innovation and customization; cost reduction; cross selling and technological up gradation are equally important for the growth and sustainability of banking business. Since 1969, tremendous changes have taken place in the banking industry. The banks have shed their traditional functions and have been innovating, improving and coming out with new types of the services to cater to the emerging needs of their customers. First, technological and regulatory changes opened up new sources of non-interest income. Second, non-interest income was believed to provide favorable attributes to a bank's revenue stream. The market size of Indian Banking sector has increased tremendously over a period of time. Financial liberalization has brought about increased competition, banks have begun to diversify their activities and as such non-interest income of banks have acquired greater significance. There is a rapid growth in the non-interest income and the market size of the banking sector. Any income which banks earn from activities other than this core intermediation business is represented as non-interest income. It is usually referred as fee income.

Commercial banks due to the pressures of globalization, competition from other financial institutions are constantly seeking new ways to add value to their services. Customers from different backgrounds have different expectations. The demands of customer are subjective in nature; which poses a major challenge for the banks and therefore flexibility of banks to adapt to changing needs and expectation of customers and bringing out products and services to cater their need is of paramount importance.

India banks have remained flexible throughout the financial turmoil as some banks focused on business and household lending while some on fee based lending which has diversified the business and reduced the banks to risk exposures.

**Brief Review of Literature**

Mabrouk Abir and Mamoghli Chokri (2010) study on Tunisian Banking sector shows that there is a strong relation between innovation and performance of Banks. The study discuses if the process of innovation is continuous and new technologies are introduced over time, innovative banks can continue to earn higher profits on the various new or improved products this literature is aptly relevant for the Indian banks as varied innovations has enabled these banks to increase their bottom line and capture a greater market share whereby gaining competitive advantage. Allen et. al. (2001) study indicates that the traditional intermediation business of accepting deposits and lending has been steadily declining especially in the US and UK.

Empirical studies have showed significant benefits from diversification into non-bank activities. Eisenman (1976), Brewer (1989). Report by Accenture on "Banking 2020" shows that there has been a transformation from product centric to customer centric approach by banks however the innovative banks will be more customers centric and organize their businesses around customer segments rather than around product categories which will ensure the higher revenues by way of fee based incomes and sustainability of commercial banks.

Panayiotis P et al. study is to examine the profitability behavior of bank-specific, industry-related and macroeconomic determinants, using an unbalanced panel dataset of South Eastern European (SEE) credit institutions over the period 1998-2002 established that there existed a positive relationship between the reforms and the performance of the banks. Reforms in the Indian banking sector has been one of the determinants for increased revenues as fee based services showed an exponential growth since post liberalization.

Aggeler and Feldman (1998) study depicted growth in the net interest income of the banks by 12 percent during 1992-97, the larger bank earnings were from non-interest income. There was a rise in the non-interest income by 34 percent as against the interest income during this time period.

Young and Roland (1999) study on the correlation between the product mix and the earnings of commercial banks depicted that fee based income may not be consistent and stable as income arising from traditional banking activities. Further study indicates as the banks move away from its traditional lending business activity the volatility of the income of bank increases.

The study by Saunders and Walters (1994) found that the growth and expansion of banks activities considerably reduces the risk concluding that diversification of business activities results in risk reduction. According to DeYoung and Rice (2004), the banking industry has over the past two decades been transformed by sweeping deregulation and rapid technological advances in information flows, communication infrastructure, and financial markets

Although there has been a shift towards fee based income by larger banks as these banks have realized that diversification will yield higher revenues how so ever smaller banks are yet to embrace the change.

**Research Methods**

The paper examines the variability of each source of non-interest income and its correlation between the other incomes. This paper aims to study the nature of non-interest income, composition of different non-interest incomes in the total income and the extent of earnings from new business activities, further earnings from business activity performed in innovative way.

The other income of the Indian banks comprise of diversified set of fee based income depending upon the banks specific business practices.

The paper is organized in two sections: Section I provides and overview of the different types of non-traditional income and its growth during the 12 years span. Section II: uses a panel regression to analyze relationship between business practices across the industry and the mix of non-interest income.

The study is based on 37 commercial banks comprising of 11 Private sector banks, 19 Public sector banks and 7 Foreign banks. The data is collected for a period of 12 years (2005 to 2016) pertaining to the numerous kinds of fee based incomes of the selected commercial banks. The research work aims to study the change in the trend of the non interest income further it also tests the biases of the banking business for earning specific non-interest income by analyzing the fixed effects using panel data regression method. Random effects have been run to analyze whether the business practices of the banks are related to earning the specific source of fee based incomes also whether the competitors are influential for earning particular fee based income.

**Dependent Variable**

Other income is measured by the composition of the different types of non-interest income earned by the banks depending on the customer base and its business practices. The dependent variable tests whether type of bank have significant relation with its nature of business and its income earning practices. Technology has brought about a complete paradigm shift in the functioning of banks and delivery of banking Services (Ankrah, 2012).

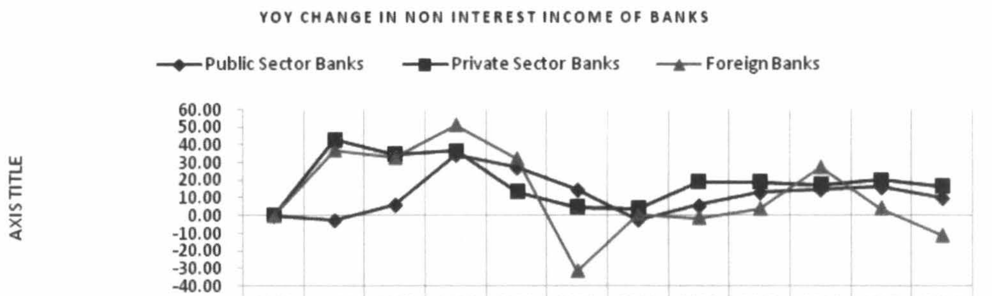
## Independent Variables

Banks should choose appropriate level of nontraditional activities depending upon their business practices based on cost structure, customer base and type of the banks. The major variables affecting the non-traditional income of the banks are categorized for the research as incomes dividend income, profit on sale of fixed assets, profit on sale of investments, lease and hire charges, gain or losses on forward contracts, income from subsidiaries, income from leasing, income from investment operations, fee income, commission income and miscellaneous income. It has been hypothesized that the change in the composition of non-traditional income affects the volatility of the other income of the banks. Two alternative dummy variables of private sector banks and foreign banks were used to measure the change in the composition of other income.

## Analysis and Results

The basic descriptive statistics of the variables are presented in this section. Figure 1: indicates the change in the non interest incomes of the different types of banks from the period 2005 to 2016.

**Figure 1: Year on Year Percentage Growth in Non-Interest Income of Commercial Banks**




| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Public Sector Banks | 0.00 | -2.63 | 6.10 | 34.24 | 27.24 | 14.57 | -2.31 | 5.63 | 13.06 | 14.72 | 15.93 | 9.91 |
| Private Sector Banks | 0.00 | 42.89 | 34.67 | 36.75 | 13.52 | 4.73 | 4.09 | 18.86 | 18.89 | 17.53 | 20.15 | 16.59 |
| Foreign Banks | 0.00 | 37.17 | 33.02 | 51.48 | 32.36 | -31.5 | 0.85 | -1.16 | 3.89 | 27.55 | 4.37 | -11.2 |

YEAR

Source: Capitaline Database

Figure1: indicates overall increase in the non-traditional income for all the banks, however higher volatility of income has been observed for foreign banks as against public and private sector banks however it is observed that diversification performance effect is not uniform across private sector banks, public sector banks and foreign banks.

The panel regression was run on 444 observations to examine the overall effect of revenue mix of all the entities over a period of time. The control variables coefficients appear largely reasonable as one cannot measure business practices and cultural differences of banks. Fixed effect model explores the relationship between the other income and components of different sources of other income within the banks. Initially fixed effects model was used to reduce the level of biases while assessing the relationship between the non-traditional income and the business practices followed by the banks also to examine the causes of changes in the income at banks.

Coefficient of regressors indicate a strong relationship between the other income mix from different sources and the non -traditional income.

Random effect model is based on the assumption variation across entities is assumed to be random and uncorrelated. Random effect was used to assess the differences across the banks in its business practices influencing the income earnings over twelve years' time period. We have assumed that differences existed across the varied commercial banks in terms of their nature of business, structure, technology and customer base which impacts the non interest income mix of the banks.

The basic assumption for random effect estimation is that the random effects are uncorrelated with the other explanatory variables however for testing this assumption Hausman test (1978) is employed to compare the fixed effects estimates and the random effects estimates of coefficients.

| *Non Traditional Income* | *FE Coefficients* | *RE Coefficients* |
|---|---|---|
| Dividend income | 0.979 | 0.973 |
| | (.001)*** | (.001)*** |
| Profit on sale of fixed assets | 0.991 | 0.989 |
| | (.001)*** | (.001)*** |
| Profit on sale of investments | 1.003 | 1.002 |
| | (.001)*** | (.001)*** |
| Lease rent hire charges | 4.204 | 4.200 |
| | (.004)** | (.001)*** |
| Gain on cancel off forward contracts | 1.015 | 1.014 |
| | (.001)*** | (.001)*** |
| Income from subsidiaries | 0.735 | 0.738 |
| | (.255)* | (0.2)* |
| Income from leasing | 1.062 | 0.962 |
| | (.05)** | (.04)** |
| Income from investment operations | 0.695 | 0.693 |
| | (.002)** | (0.02)** |
| Fee income | 1.083 | 1.084 |
| | (.001)*** | (.001)*** |
| Other commission income | 0.996 | 0.998 |
| | (.001)*** | (.001)*** |
| Miscellaneous income | 0.988 | 0.989 |
| | (.001)*** | (.001)*** |
| R2 | 0.99 | 0.94 |

(p values are denoted in the parentheses * ,** and *** denote significant level at 10%, 5% and 1%)

The regression model was extended to select between the fixed effects and random effects model. The objective was to find out whether there is significant correlation between the regressors and the unobserved random effects. To decide between fixed effect model and random effect model Hausman test has been used to test the null hypothesis that there is no association between non-traditional income and the organization structure, culture and practices existed between the commercial banks.

| *Non Traditional Income* | *Fixed effects* | *Random effects* | *Difference* | *S.E* |
|---|---|---|---|---|
| Dividend income | 0.979426 | 0.972781 | 0.006645 | 0.010025 |
| Profit on sale of fixed assets | 0.990632 | 0.98865 | 0.0019818 | 0.01941 |
| Profit on sale of investments | 1.002506 | 1.001948 | 0.0005584 | 0.001846 |
| Lease rent hire charges | 4.204366 | 4.199834 | 0.0045314 | 0.387337 |
| Gain on cancel off forward contracts | 1.014558 | 1.013736 | 0.000822 | 0.004338 |
| Income from subsidiaries | 0.735107 | 0.737719 | -0.0026114 | 0.173089 |
| Income from leasing | 1.06232 | 0.962354 | 0.0999661 | 0.269981 |
| Income from investment operations | 0.695265 | 0.692997 | 0.002268 | 0.060524 |
| Fee income | 1.08306 | 1.084323 | -0.0012634 | 0.049601 |
| Other commission income | 0.996176 | 0.998227 | -0.0020513 | 0.005197 |
| Miscellaneous income | 0.988378 | 0.989155 | -0.0007765 | 0.004518 |

The difference in coefficients not systematic, Prob>chi2 = 1.0000 > Prob>chi2 = .05, random effects is valid which concludes that diversification of business activity is affected by income mix and can be concluded that diversification benefits can be reaped by the banks as long as they explore their specific characteristics, competencies, exposure to risks and business strengths. Based on the results it can be concluded that other income play a crucial part since it permits us to interpret the other variable after controlling for type of banks. The finding reveal that there has a rise in the other income components of the banks as a result technological innovations leading to cost saving and higher efficiency.

## Conclusions

Liberalization has an important effect on the income statements of the banks, there has been a shift from interest income to non interest income. The changing trends in the interest rates has forced banks to venture into new sources of revenues. Reforms, structural changes, deregulation, new technology and financial innovations have changed the facet of the banking sector. Cost efficiency and risk minimization had been crucial for the stability of the banking sector. Recent decade has witnessed higher innovations and reforms in the financial sector causing diversity of banking operations and higher engagement in non-traditional income generating activities.

The paper was an attempt to investigate the trends in the non interest incomes of the major commercial banks irrespective of their nature and size of operations. The study evidences that there has been a transition in the banking business during the previous 11 years' time period in the income mix of the commercial banks. Further combinations of different types of incomes; interest income and non-interest income helps banks in rebalancing risk and enhancing the financial performance. Our study has established that changing trends in the financial sector has resulted in increasing trend in the generation of non-interest income of the banks which can be correlated with the diversification of businesses by the banks. Banks also seek to increase non-interest income because it is considered to have traits that make it different from interest income and thus desirable. In particular, non-interest income could lead a bank to be less risky if it leads to greater diversification. In addition, non-interest income is typically described as more steady or stable than interest income

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