

The Interdependent Relationship between Interest and Non-Interest Income of Indian Banks: A Study of Diversification of Income, Risk, and Traditional vs. Non-Traditional Banking Activities.

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Abstract

The contribution of interest income to revenue has been one of the cores for Indian banking sector which is similar to other economies. In quest to reduce their risk exposure and earn other sources of income the Indian banks have turned into non-interest income sources. The purpose of this article is to focus on Indian banks inter and intra-income dynamics' and how this affects their potential income diversification and risk in traditional vs. non-traditional banking activities. In particular, we assess the question of income diversification strategies in Indian banks, what is the share of non-interest income in the total income of banks, and whether a more diversified portfolio helps to reduce the risks of the banks. In particular, the analysis of several surveys was performed to investigate the issue of the impact of changes in the yield curve on the income of banks and the convergence of banks towards interest or non-interest income as a result of these changes. In addition, we address the issues of the degree of non-interest income in enhancing the safety and soundness of financial institutions during turmoil as well as the influence of policy on both interest and non-interest income. This study seeks to fill the gap and provide internally consistent coherent relations of interest and non-interest income courses to the Indian banking system.

Keywords: *Bank, Interest, Non-Interest Income, Income Diversification, Non-Traditional Banking.*

I. Introduction

The history of banking in India can be linked with primitive banking systems and the indigenous bankers who had a critical role to play in the financial systems of the country [1]. This initial banking systems involved local monied people, who were money lenders and shroffs, and offered the residents credit and various financial products. However, with the development of the Indian economy, it was understood that there was a greater need for an organized and efficient banking system [2]. The nationalization of banking institutions in India was a turning point with regard to the development of the Indian banking sector [3]. This process started with the year of 1969 when the state of India took over 14 major commercial banks and in the year 1980 six more were nationalized [4]. The chief aim of the bank nationalization was the direction of these limited financial resources in the banking system into the course of deliberate economic growth and to guarantee the availability of other means of credit to those most disadvantaged people.

On one hand, the nationalization of banks resulted in some level of financial deepening and geographical expansion of branches but on the other hand it posed several problems, like inefficiency and stagnation of this industry [3]. Another important chapter in the development of banking industry in India opened with the reform strategy of the 1990s, because of which the space for private banks came into existence [5]. This was expected to help in boosting the level of competition and innovation in the banking industry and improving the efficiency and profitability of the banks.

Consequently, diversification of businesses took place within the Indian banking sector wherein the gradual rise of non-interest income was observed [4]. Emphasis on non-interest income activities has been noted to enhance the business position of the Indian banks, though the extent of the development is not uniform among various categories of banks [6].

At present, the Reserve Bank of India assists in the progress of the banking sector, including development aimed at the economy and society of India, through well-defined limitations within which, risks are minimized while fostering growth [7]. Banks in India facilitate the flow of money between the lenders and the borrowers serving as the principal function of a bank [8]. This process, known as financial intermediation, consists of collecting the funds of individuals and companies that have an excess of them and placing them to individuals and companies that require funds [9]. The major income of a bank comes from earning the interest income.

When we talk about interest income in banking, it mainly relates to loans and investments as mentioned in the seminal works [10]. The quintessential paradigm of every bank is that it is in the business of lending money and earning interest that is its chief revenue, and cash, the generating asset [11]. They have a key role in the economy where they accept money known as deposits from people who have funds, consolidate and then disburse to those that are in need of money [9]. Logical deduction would argue that interest income is earned simply from “the spread” [12]. A customer will receive interest on the amounts which are saved in a savings account and these interest rates differ from one bank to the other [13]. More, banks also receive interest payments from the borrowers they loan out funds, which also add to the interest income of the banks [9]. However, income outside the management of such funds such as income ee-learances income has commissions, and income foreign income, within banking is more sources [11]. Although noninterest income becomes increasingly contributing factors in the total revenue in the advanced economies, in the Indian banking industry its share in the total income was 25% [12]. According to [11], non-interest income is defined as the income of the bank and the creditor, which was obtained largely from revenue collected with regards to various fees, including those levied on deposits and transactions, insufficient funds or overdraft fees, as well as a fixed fee for servicing the account on a monthly basis. Further, it has been worthwhile noting that the Indian banks have been for some time now expanding their bases in non-interest income, beside the interest earning business [14]. It is any income other than interest income made by banks and various studies have already been conducted to show the connection between NII and performance of the banks [15]. Other forms of non-interest income consist of: - Account maintenance fees - Charges for ATM services - Fees for processing loans - Fees for advice on investments - Selling of banking mother products members e.g. insurance, mutual funds and etc. The crucial roles of both interest and non-interest income in the overall financial performance of the bank must not be overlooked either.

The foremost revenue stream continues to be the interest income which naturally arises through their primary activity of making loans and advances to borrowers [9]. On the contrary, non-interest income is equally important in enhancing and expanding the revenue capacity of a bank outside of interest earning activities [16]. Such diversification aids in smoothening the income of bank where there are risks related to the business cycle or interest rate movements, and this leads to better performance [6]. In addition, the interrelationship between interest and non-interest income sources lessens the risks of an aggressive business strategy and preserves prospects for steady growth [17]. This is so because the interaction of interest and non-interest income in Indian banks should be analysed for some reasons. Industries first of all shifted the sources of obtaining revenue from the traditional interest income to the rather non – conventional and innovative sources of non – interest income [18]. As this process has been confirmed to affect the stability and performance of banks such as many works demonstrate it, risk-adjusted profitability is improved with an increase in the share of the non-interest income [19]. A number of other studies suggest that diversification of bank activities can on the contrary affect bank performance negatively, as factors of income diversification and non-interest income growth, in increased levels, tend to expose the institution to higher risks [20]. Thereby, analysis of the dependence between the types of income as well as the dependence of the net interest margin on other income types can be useful for obtaining the insight of net income composition for Indian banks in order to do trade off net income and risk.

This particular study involving Indian banks’ income pattern, interest and non-interest, and how they interrelate will be useful to diverse beneficiaries that is, managers of the banks, Governments and investors. In this case, for example, the bank management may appreciate the consequences of income diversification as it relates to a bank’s stability and performance and thus makes it possible for them to make strategic decisions relating to the diversification of income generating activities of the banks [21]. The study also serves its purposes to policymakers since it identifies and evaluates different income sources and their associated risks risks and/or benefits, and this information could help in developing regulations or principles which would encourage a safe and effective banking industry [22]. In addition, the investor can use the result of this assessment to measure risks in returns in various banks and examine which levels of investment are suitable for them depending on the level of risk which they are willing to take [23]. On balance, this particular study on income diversification in Indian banks will also turn out to be helpful to a number of stakeholders in the banking industry.

II. Literature Review

The approach to the Indian banking sector has changed from a singular focus on profit generation to diversification of incomes over the recent past. Understanding the dynamics of interest and non-interest income interdependence subsystem has curbed the banks from the risks as well as optimized their profitability. Therefore having such understanding at this juncture is of extreme importance to the Indian banks. In this respect, it will be necessary to commence by defining the constructs of income diversification in banking considering the nature of interest and non-interest income and other related theoretical models of risk and diversification. After that, attention will be directed to the factors of interest income sources, factors affecting the interest income, trends and patterns of interest income generation mechanisms in the Indian banking sector. This literature review seeks to address an overview of the relationship between interest and non-interest income generation and their relationship to Indian banks as well as reasons for its fluctuation.

Theoretical Framework

Income diversification in banking is different from income concentration in relying on a single line of financial products and services as revenue sustaining lines of business against the perils of market volatility. This can include, active and passive lending, issuing deposit accounts, providing investment opportunities such as mutual funds or insurance and other banking activities. As stated, the rationale is economic as it advocates against risk concentration. Risk concentration is addressing a particular threat in line of offering by spreading it out to explain the low risk of downturn of that particular sector or product type that may be harvested in the future. The income diversification concept also applies in the context of the theoretical framework as one of the examples of pragmatic usage of the risk management studies that regard diversification as a necessary evil.

The theoretical framework is more of an aid in explaining how and why banks are inclined to go for income diversification and in assessing the effectiveness of such diversification as a risk control strategy [24]. Additionally, it makes it possible to trace the habitual tendency of the institutions in finance, whereby there is normally an increasing tendency for them to engage in diversification strategies following a shift in the economic dynamics [25]. Because of the theoretical framework of income diversification, researchers will be able to leverage the existing theories and empirical data to evaluate the effects of diversification on the bank's stability and profitability [26].

Concept of interest and non-interest income in most circumstances

In the field of finance and accounting, the treatment of interest and non-interest income can be supported by the prevailing theories and concepts with regards to comparing and contrasting the various research efforts. Interest income, which can be the simple or the compound interest on loans, on investments in securities and on other income, is more comprehended owing to financial principles that explain the time value for money, the risk and return trade-off, compound interest and others. These conceptual pillars enable the detailed assessment and measurement of returns generated from various forms of investments, which is very key in enhancing the profitability of financial institutions [37]. Unlike the above example, non-interest income which entails earning fees, commissions, charges for the provision of services is understood through non interest earning strategies and practices that include market conditions, pricing, and the services being provided to the clients. These two types of income are crucial if one is to understand all the facets of the financial position of an institution and the ways in which it intends to position itself, or its strategic outlook.

Here is where the conceptual framework cannot be bypassed; it gives the concepts and the definitions, which are further used to explain the research and assess the data in relation to the broader theoretical context [27]. The conceptual framework integrates other theories and empirical data with practice so as to form a comprehensive approach that is needed in relation to the diverse sources of financial income and the related aspects of the organization's sustainability and growth [26].

Theoretical models of banking diversification and risk

Theoretical models are of great essence when analysing and helping explain the complex interaction between diversification efforts and the risk associated with the financial institution in question within the context of banking diversification and risk. This theory has been useful in the investigation as it explains how diversification orientation is likely to reduce or increase risks within banks [28]. This section covers basic concepts and their definitions which are necessary for the given analysis, especially diversification types (geographical, income, or asset diversification) and different measures of risk including credit, market, and operational risk [29]. Additionally, within this matrix, researchers are allowed to use particular lenses to collect, analyze or present the data and this allows the emergence of patterns and

themes in the data collected. For example, the Modigliani-Miller theorem can be invoked to oppose the long-standing view of diversification as a risk-reducing tool, instead proposing that in certain markets, adequate diversification may not be achieved at all [25]. By employing a coherent and effective theoretical perspective, scholars are capable of amassing and marshalling diverse theoretical aspects to the complex interaction of diversification and associated risks within the banking sector, thereby extending theories such as the Portfolio Theory or the Capital Asset Pricing Model on the ways banks can diversify risks through investment strategies [24][27]. During the years that followed the economic crisis, a number of these financial bodies have necessarily shifted focus to growing the noninterest income due to its dependency on a more stable revenue base [30]. This pivot is evident in the substantial proportion that noninterest income contributes to total bank operating revenue as was the case in the 1st quarter of 2018 where it was \$68 billion whose total was \$200 billion accounting for 34% of the total income [30]. The plain banking business model, creating a revenue primarily by providing loans and earning interest, has now been found to operate side by side with other avenues of earning revenue [30]. This diversification strategy, encompassing such revenues as service charges as well as fees from new and improved banking services, does not only expand the revenue mix, but also helps reduce risk since it is acceptable that non-interest income is more predictable than interest income exists [31]. Notwithstanding that, the general picture indicates that noninterest income has become stable and has even reported growth from 2005 to 2018, although most growth remained slower than total operating revenue, [30]. The increasing dependence of the banking sector on noninterest income, which encompasses services like mortgage servicing fees, mutual fund sales and investment banking is seen as a response to changes in the environment where relatively high-interest income has been replaced by relatively low-interest income due to low prevailing rates [31],[30]. This adjustment is not only a response to the market but also a proactive pursuit of new technologies and market opportunities that have arisen in recent years [31]. The relationship between interest income and noninterest income in commercial banks, therefore, represents a very complicated relationship in which these institutions have to keep reinventing themselves in order to remain in the market and minimize their risk to market movements. This research paper investigating the relationship between interest income and non-interest income in the context of Indian banking forms adequacy in relation to certain aspects of income diversification, risk management and traditional versus non-traditional activities of banks. The authors maintain that income diversification is essential to risk management and argue that instead of basing revenue solely on one or two financial product lines, it is important for banks to have a wide variety of revenue streams. There is theoretical framework of the paper which enable scholars to analyse the intricate interrelationship between bank risk and diversification as the current body of knowledge proposes how bank risks can be controlled through the mixture of various investments. Authors also basing on the theory and findings in the paper discuss how diversification affects the financial performance and stability of a bank. The present paper analyses the weaknesses and gaps of the present research and proposes directions for future research. In a nutshell, the paper is a systematic and detailed study of income diversification practices and risk management strategies of Indian banks, thus contributing to the development of science and practice in this direction.

III. Discussion

Income Diversification in Indian Banks Circumstances for Bank Income Expansion in India

The increasing recognition of non-interest income as a constituent of total income is indicative of the changes taking place along the lines of income diversification strategies employed by Indian banks [32]. Some of the changes which have given rise to such stability and improvement in income in banks of these economies is due to these institutions venturing into other avenues of income generation besides earning interest. However, this change is not consistent across all forms of banking groups registered in the country. The different forms of non-interest income such as fee income, trading income as well as other non-operational income have some differences in their impacts on the level and risks of profitability of banking institutions [32]. For example, large banks with a wider base of clients may be able to enjoy more revenue from fees than smaller banks. However, other factors such as size and technology are bank related while market conditions such as market competition and inflation rates are economy related and thus determine the approach adopted for income diversification [33].

Non-Interest Income and Revenue Generation

Having further appreciated income diversification as a step towards income generation, banks have embraced non-interest income generation as a source of revenue.

Within the Indian banking industry, which has undergone considerable evolution since economic liberalization as well as the evolution in competitive dynamics, the aspect of non-interest income has gained prominence [34]. Also, the earning assets and income generation policies for diversification away from interest income have been adopted mainly to enhance the stability of earnings profiles and the overall profitability [32]. This diversification encompasses payment processing fees, offering wealth management services and performing some investment banking functions [35]. As the economy has shifted, more advanced banks have taken the lead in the provision of non-interest income by using their size and technology based platforms to market strategic non-interest products [33]. Further, the diversification of revenue in the case of Indian banks also indicates that this objective not only improved their strength but was also supported by the authorities and bank's management as a smart move to the potential risks of excess concentration on traditional banking practices [36]. Therefore, non-interest income has become an engine of financial intermediary institutions operating in the current environment, and especially in countries with fast-changing economies like India, where able banking practices is essential for health and development of the sector.

Income diversification and banks' risk exposure

It has been documented that there are benefits to moving away from dependence on traditional interest revenue. This trend - the movement to explore non-conventional sources of revenue – certainly protects banks from negative especially potential threats such as the one that came with COVID-19. According to this study [37], this diversification has been evidenced to inversely relate to banks risk exposure. This implies that the more a bank expands in noninterest income, the less risky it becomes in areas such as credit risk and other forms of market risk. Such an interplay is complicated all the more by the advent of fintech, which may change the noninterest income generation efficiency. Such technical solutions offer new income streams as well as improve processes and support. This can have a powerful influence on the risk-return shape of the income earned by the banks other than interest income. For diversification to be effective, income variation is not the main aspect of income diversification; it is risk structure that is instead managed more effectively. This kind of technological advancement in the generation of non-interest income, assisted by fintech, has the potential to be a game-changer in addressing risk factors and formation of income in the financial institutions.

Impact of Yield Curve Changes on Banks' Earnings

Yield Curve Spreads and Strategic Integration in Banks

When the yield curve flattens, this usually results from the change in the maturity structure of deposits and loans, with banks borrowing at the short rates and lending at the long rates. This leads to reduction in net interest margin for the banks.[38],[39],[40]. The closeness of the gap between the cost of borrowing versus margin on lending creates a direct result in the ways that banking institutions operate as interest differentials help generate heavy earnings from them, [38]. As this income asset yield spread declines to flat or inverted conditions, banks are left with little options as the ability to generate profits is depleted as institutions try to remain relevant in the industry,[38],[39]. As a result, the need to meet profit targets may lead to some banks altering their risk undertaking behaviours towards riskier return generating assets, which in the short term may sound profitable but in the long term increase that particular banks risk orientation [40].

Differentiation Between Interest and Non-Interest Income Activities

While limitations of interest payments arise amidst the experiences of opposing yield curve dynamics, banks demonstrate resilience through currency strategies in particular to the income squeeze that the inverse yield curve tends to cause on their interest income earners [39]. The subsequent shortfall in interest income motivates the banking fraternity to concentrate more on non-interest income generation as a counterbalance [39]. This change is pronounced in the banks business models especially the big ones with assets greater than 1 billion dollars who derive more than 43percent of their net operating revenue from noninterest income and so do encounter these sources to maintain stability in revenue generation [41]. Conversely, smaller community banks, lower than 1 billion dollars in assets, appear to be more restrictive since only 25percent of the net operating revenue is derived from noninterest income [41]. This disparity accentuates how banks of different sizes would strategize to level up their profitability profiles over the competitive battle initiated by changing the rates of interest where larger banks rely on non-interest earning revenue streams the most to buffer the shrinking of net interest margins (NIMs) [41].

Interest vs. Non-Interest Income and Bank Stability

In case of banks, their stability has a close relation to the time structure of the yield curve which is essential for generating the income streams.

Yield curve risk, risk arising from the effective duration of fixed income instruments and risk stemming from interest rate fluctuations, has an impact over the profitability of every bank since the changes in the yield curve are based on bond risk premiums. Yield curves, as observed in modern literature, have an ability to violently accelerate or deplete income and cost structures of the bank industry. There are instances when yield curves get inverted such periods are said to be precursors of impending recessions; this brings a challenging situation to banks. The margins earned is due to the operational model where customers are lent to at long term rates and the funds borrowed from the banking system at short term rates. According to certain studies this inversion, augurs more recessionary periods, but also brings a simultaneous contraction of net interest margins NIMs which is a major risk for banks since it concerns erosion of their core business [43]. In reaction to these pressures induced by yield curve, it appears that banks may have to change business strategies and turn to non-interest income as the IMF suggests, that such a strategy may be necessary to protect the level of foreign income suddenly turning negative due to volatile market conditions. This means that it is important to appreciate the link between yield curve movement and bank income composition so as to know how banks adapt to movements in the economic fundamentals and the central bank policy [38].

Non-Interest Income During Financial Crisis

Non-Interest Income's Role in Financial Stability

The financial crisis of 2007-2009 made it imperative for the banks to evaluate their revenue orientation with particular regard to non-interest income. Unlike every other sector where businesses earned revenue primarily through the use of loans and interest, the crisis saw the need for income diversification from all the previous quarters. Income from services such as service charges, non-lending fees for the activities of ATMs and others, emerged as one of the most effective strategies for that diversification.

Following the collapse of the economy that led to low interest rates, those banks queuing their finances on net interest margin were left with no option but to diversify their income, and they found that non interest income offered such a possibility. [45] In addition, larger banks operating in broader combinations of bank holding companies have also been shown to have higher percentages of non-interest income relative to the smaller banks with stress before and after the crisis.[45] This allows the inference that such institutions may have been relatively insulated from the adverse impact of the financial crisis owing largely to the scope of their earning potential.[45] All banks underwent a strategic change in 2008 particularly the midsized ones that is, there was target behaviour towards pulling back on noninterest income in the 2008 recession, 'borrower service charges' in this case were essentially employed as a strategic manoeuvre in the recession.[45] As such, it begs the question as to whether this increase was rising for the sake of increasing noninterest earning such as service charges was due to factors shaped by the economic downturn which most banks are grateful for bringing their changes in behaviour during turbulent economic times.[45]

Monetary Policy Influence on Bank Revenues

There are many dimensions in which the connection between active monetary policy and bank's revenues and in particular with interest and non-interest income is complex and important. Against this setup, it is apparent that some policies, particularly those regarding where debt is focused, have effects on both streams of bank income.

For example, the link between interest and non-interest income is statistically high, at 0.84, which means that if there is a variance in one, there is likely going to be a change in the other as well [45]. Further by the fact that other services, in particular, service charges that span within non-interest income sources are also positively correlated to interest income, at 0.74, confirming that some of the fee-based income is, directly related to policies concerning the rate of interest [45]. In like manner, history has shown that lower interest rate climates usually resulting from expansionary monetary policies depress the earnings for the banks and this exerts stress on all sources of earnings causing institutions to look for earning elsewhere in avenues like investment banking [46]. However, the surge in revenues of such income-generating sources as fees saw a downturn after the crisis and the general terms associated with non-interest income became volatilized and shunned indicating the troubles banks would endure in the course of the post-crisis restoring profitable vectors on the base of dependent non-interest income sources [45][46]. Even though the course was taken to achieve harmony in the revenue generation strategies with elimination of revenues which do not directly arise from the conduct of business activities or

earning assets as a percentage of total revenue, this, however, did not contribute to the improvement of the profitability of the banks [46]. Similarly, this complicated standing of the relation between the presence of monetary policy and the structure of the revenues of banks illustrates the importance of the policy actions of central banks in determining the profitability and financial system stability of a banking sector.

Central Bank Interest Rates and Non-Interest Income of Banks

Exploring the favourable results of increasing non-interest income during the COVID-19 pandemic as the crisis is over, the dependence between central banks' interest rate policy and banks' non-interest income becomes significant in comprehending the variability in bank revenues in times of economic crisis. Since the central bank's policy rate determines the interest income of the banks, it, in turn, determines the relative importance of non-interest income in order to insulate returns from such movements.

Within the financial meltdown period 2007- 2009, when interest incomes came under various rate constraints, non-interest incomes [47] appeared as one of the mainstays of the banks in wading through the inherent uncertainties within the core business. Ho and Sritumpul (2007) further explained that noninterest income activities during the crisis, in general, did not impose adverse effects on bank holding companies' (BHCs) performance, instead in many cases they improved financial performance, indicating that diversified income structure is indeed able to protect banks from financial depressions like this one. Further, studies indicate that non-interest income had always been and non-interest income is still an important income stream among banks, especially during financial crisis periods, but in this case, the focus of non-interest income evolution has shifted to banking risks and returns management after the crisis. This suggests that in situations when central banks raise or reduce the prevailing interest rates in a bid to slow down or speed up economic expansion respectively, then, non-interest income sources like fees, service charges, and other revenues can be important tools which banks will use in order to stay rational in performance.

IV. Conclusion

This research paper elaborates on the connectedness between a bank's interest income and its non-interest income in the context of Indian banks, focusing on most of the factors – income diversification, risk and traditional vs. non-traditional banking activities. It has been inferred that the change within the framework towards the strategy of income differentiation, especially in the form of the non-interest rates revenue, contributes positively to the consolidation of the banks' position. It also prevents such risks like credit risk and market risk. This finding is further supported by the highlighting the need for assets in the form of non-interest income which are largely prevalent in fast moving economies such as Indian that encompasses varied banking practices which assist in the development of the sector. It also discusses the interrelationship of these aspects with the structure of a bank's earnings and emphasizes the high importance of monetary policy of central banks for institutions' financial health and income streams. Furthermore, this research makes it clear that banks should seek alternatives ways of earning even when the economy is not doing well, for instance, the recession period of 2007-2009. Based on the findings highlight, this study takes part in the further development of this field of science and offers some useful recommendations to decision makers and professional bankers.

For instance, future studies may focus on determining the effect of income diversification on the stability and performance of banks in other emerging economies and examine the prospects of enhancing these banks' non-interest income activities through innovative financial technologies.

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