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Impact of Non-Interest Income on theProfitability of Banking Sectors in Bangladesh

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Abstract

The banking industry is crucial for a country's economic success and plays a pivotal role in Bangladesh's economic development. Non-interest income, including investment income, commissions, brokerage, and other operating income, is essential for profitability. This study aims to determine the impact of non-interest income on the profitability of Bangladeshi commercial banks. This research utilizes secondary data from 3 government banks and 3 private banks spanning a decade from 2014 to 2023, analyzing the data using regression and correlation. The result showed a negative trend of NII with TOI for government commercial banks, and overall banks showed, while positive relationships were observed in Non-II for all banks. Investment Income (II) showed an increasing position of TOP, while CEB showed a positive relationship. OOI had a positive relationship for private banks, while Govt. banks had adverse effects. The beta co-efficient of II was weak, while CEB had a significant positive impact on TOP. OOI had a positive impact on private and overall banks, but not on Govt. bank's profitability. Government banks should focus on diversifying income sources, enhancing transparency, and introducing Fin-Tech services to protect against risks such as trading losses and digital fraud. They should also strengthen governance and supervision, and cap excessive fees on essential services for low-income groups to enhance Non-Interest Income (Non-II).

Keywords:*Non-interest income, Commercial banks, Investment Income, Total operating income*

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I. Introduction

The banking industry has consistently been regarded as one of the most essential components for the economy's efficiency. The banking sector is crucial for economic success (Puspitasari et al., 2021). The banking sector plays a pivotal role in the economic development of Bangladesh(Agarwal & Rai, 2025). Historically, banks have primarily relied on interest income generated from loans and advances. Nevertheless, due to heightened competition, regulatory modifications, and financial innovation, banks are diversifying their revenue sources(Kumar et al., 2019). Now, the income of banks is classified into interest income and non-interest income (Sun et al., 2017). Non-interest income is the primary alternative revenue source, encompassing investment income, commissions and brokerage, and other operating income, which are regarded as essential factors influencing profitability(Wang et al., 2024). The banking sector is experiencing swift development owing to globalization, technological advancements, and reforms in financial sectors(Weerasuriya et al., 2021). Historically, banks in Bangladesh mostly generated their revenue from interest-based activities. Profit of the banks is the spread between the interest received from lending and interest paid on deposit. To minimize the risk and dependency on interest income , banks modified their services and business and gave attention to generating non-fees based income of the last decades (Kumar et al., 2019). The diversification of income helps the banks to sustain in the market in the long run (Adem, 2023; Javaid, 2021; Nisar et al., 2018).

Profitability is the main target of the shareholders, policymakers, and authorities (Mehzabin et al., 2023). The interest income is the main source of profitability, but Non-interest income has become a vital source of income for the banking sectors in the country (Wang et al., 2024). Most of the cases it is laid 40% - 70% of the total earnings of the banks. Non-interest is vital when the rate of interest is small and the bank generates low interest income(Mehzabin et al., 2023). Innovation is the source of non-interest income (Magallón González et al., 2022). The impact of non-interest income may have a positive or negative relationship with profitability. Sometimes employees focus more on generating non-interest income, which hampers the ability to provide services to customers in the core business of the banks, leading to reduced profitability (Javaid, 2021). The banking sector of Bangladesh has modified its business in response to environmental changes, technological improvements, and customer demands, earning fee-based income from its services. Now it is a vital question whether fee-based income has a positive impact on profitability, hampers services to the customers, or results in excessive expenditure incurred against non-interest income or not. So, this study is taken to find out the impact of non-interest income on the profitability of Bangladeshi commercial banks, which helps policymakers, authorities, and employees in future decisions regarding activities related to non-interest-based services.

II. Literature Reviews

Clarify the ideas regarding topic-related terms and concepts; development of methodologies and research gaps. The following important literature review has been reviewed:

(Sun et al., 2017) stated Chinese banks are focusing on noninterest income due to competition and stricter regulations. A panel threshold model was used to investigate the relationship between noninterest income and performance. Results showed a nonlinear relationship and a negative correlation between the ratio and bank performance. The study suggests that the ratio should be controlled to achieve high performance.(Nisar et al., 2018) explored the impact of bank-specific and market-structure variables on the profitability of Indian banks from 2002 to 2016, employing GMM estimates. It was determined that non-performing loans and credit risk concentration significantly diminish ROA, whereas diversified income, including non-interest income, mitigates profit volatility. While non-interest income is not treated as an independent variable, the discussion connects its function to risk mitigation and improved earnings stability, illustrating how contemporary Indian banks utilize NII in the face of structural challenges.(Kumar et al., 2019) explained a panel analysis of 50 Indian banks from 2008 to 2017, assessing diversification scores and examining their impact on ROA and ROE. A greater proportion of non-interest revenue, particularly fee-based profits, has a positive influence on profitability, but only to a certain extent. Profitability increases are most pronounced when non-interest revenue is coupled with stable macroeconomic conditions and operational efficiency. The narrative personalizes the issue by highlighting the necessity for banks to exercise caution in developing new revenue streams to mitigate volatility.(Ghosh & Maji, 2019)stated the impact of bank-specific and market-structure variables on the profitability of Indian banks from 2002 to 2016, employing GMM estimates. They discovered that non-performing loans and credit risk concentration significantly diminish ROA, but diversified income, including non-interest income, mitigate profit volatility. While non-interest income is not treated as an independent variable, the discussion connects its function to risk mitigation and improved earnings stability, illustrating how contemporary Indian banks utilize NII in the face of structural challenges.(Javaid, 2021) explored the impact of non-interest income on Pakistani bank performance using the Auto regressive distributed lag (ARDL) method. Results show that a decrease in non-interest income decreases bank profitability. The study suggests that a decrease in dividend and foreign currency income leads to decreased profitability, while fees and commissions have a negative impact on performance. This suggests that commercial banks could increase foreign currency earnings and dividends to boost profitability.(Mehzabin et al., 2023) stated the impact of capital structure, operating efficiency, and non-interest income on the profitability of the Asian banking industry in 28 countries. The research uses a fixed effect regression model and panel data from 492 banks from 2004 to 2018. Results show that an increase in total debt ratio increases the bank's profit margin, supporting agency cost theory. Lowering operating expenses and effectively managing costs can also boost bank profitability. Non-interest income plays a crucial role when interest rates are lower, suggesting that careful investment in the banking sector can generate income and increase profit margins. The study contributes to existing literature on the profitability of the Asian banking sector.(Wang et al., 2024) focused the impact of non-interest income on the performance of Chinese commercial banks from 2007 to 2013. It found a significant negative correlation with operational costs and a positive correlation with total bank assets, macroeconomic growth, and performance. However, the effect differs depending on the type of bank. Central state-owned commercial banks exhibited a favourable correlation with non-interest revenue, whereas urban banks showed a negative correlation. The study recommends differentiating development strategies for improved profitability.

III. Objectives Of The Study

The main objectives of the study are to impact of Non-Interest Income (Non-II) on the profitability of schedule commercial banks in Bangladesh. The specific objectives of the study are**:**

1) To understand the importance of Interest Income and Non-Interest Income of selected Govt. Commercial Banks and Private Commercial Banks in Bangladesh during the study period.
2) To find out the relationship between Interest Income and Non-Interest Income with the profitability performance of selected banks during the period under review.
3) To measure the impact of Interest Income and Non-Interest Income on the profitability performance of selected banks during the period under review.

4) To provide suggestions, recommendations, and policy implications for the improvement of banks in Bangladesh.

IV. Hypotheses Of The Study

H_1: *There is a positive and significant association for each of the items Net Interest Income (NII) and Non-Interest Income (Non-II) with Total Operating Income (TOI) in the case of selected sample banks separately.*

H_2: There is a positive and significant association for each of the items, Total Operating Profit (TOP), with Investment Income (II), Commission, Exchange and Brokerage (CEB) and Other Operating Income (OOI) in every sector of selected sample banks in Bangladesh.

V. Methodology Of The Study

This research predominantly utilizes secondary data. The majority of the data has been sourced from the annual reports of the selected banks, as well as journals, magazines, newspapers, the Bangladesh Bank Bulletin, Statistical Yearbooks, the Bangladesh Economic Survey, the Bangladesh Economic Review, the Economic Advisor's Wing, the Finance Division, and the Ministry of Finance, among other sources of information. The total number of 62 Banks operated under different heads, in which purposively selected 3 Govt commercial banks were purposively selected from 6 and three Private commercial banksfrom 43 in Bangladesh(Akther et al., 2023, *www.bb.org.bd*).

Table 1: Selected Commercial Banks in Bangladesh

SL.	Govt. Commercial Banks	Abbreviation	SL.	Private Commercial Banks	Abbreviation
1.	Sonali Bank PLC	SBPLC	1.	Brac Bank PLC	BBPLC
2.	Janata Bank PLC	JBPLC	2.	Dutch Bangla Bank PLC	DBBPLC
3.	Agrani Bank PLC	ABPLC	3.	National Bank PLC	NBPLC

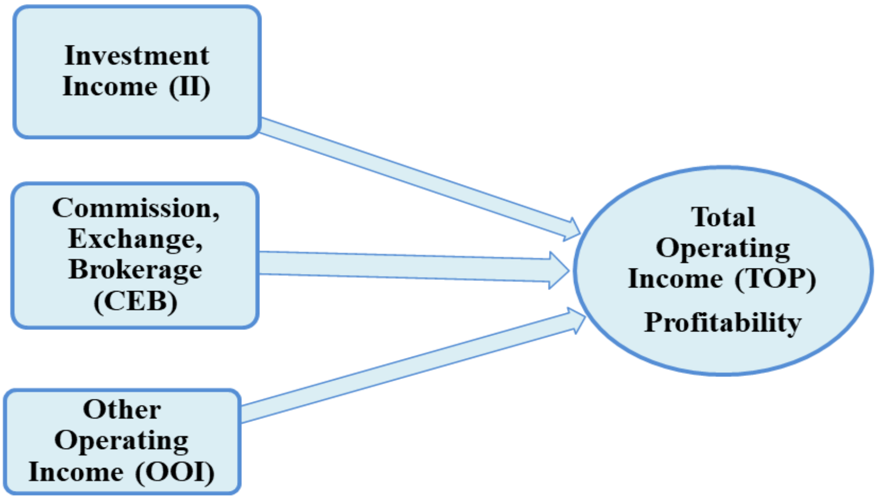
Source: www.bb.org.bd

The research study spans a decade from 2014 to 2023. The period is evaluated based on a thorough analysis to provide the most accurate observations regarding the explanation and to find out the impact of Non-Interest Income on Profitability.

Statistical Tools: To identify and focus on the causal effects of Non-interest income on profitability, Regression analysis and Pearson correlation are applied using SPSS version 24, based on the data.

VI. Model For The Study

Non-interest income (Non-II) refers to the operational revenue generated by commercial banks, excluding interest rate differentials. The primary components of this income are net income from intermediary services, fees and commissions, investment profits, fair value adjustments, exchange gains or losses, and other income from the business (Wang et al., 2024). In the study, Total Operating Profit (TOP) is considered the Dependent variable. In contrast, the components of non-interest income like Investment income (II), Commission, Exchange, Brokerage (CEB), and Other operating Income (OOI) are the independent variables (Islam & Rana, 2019; Kumar et al., 2019).



Source: Developed by researchers

Investment Income (II):

The Investment income is derived from investments without advances. The dividend income, interest on Treasury bonds, discount on Bangladesh bills, gain from floating rates, profit on sales of shares, securities, etc., are the investments for Bangladeshi commercial banks (www.agranibank.org). High risk is associated with investment income due to changes in the economic situation of the national and international markets (Javaid, 2021).

Commission, Exchange, Brokerage (CEB): Letter of Credit**.** Commission, brokerage, and exchange gains are the primary source of non-interest income (www.agranibank.org). Banks generate huge income from these, and it is the dominant source of non-interest income (Javaid, 2021).

Other Operating income (OOI): Other Operating income includes rent of locker, profit on sales of assets, postage recoveries, account maintenance fees, service charges, annual charges, account closing charge, swift charge etc. (www.agranibank.org).

VII. Analysis And Interpretations

Based on the secondary data, the result of the comparative performance analysis based on Non-Interest income is stated below:

H_1: There is a positive and significant association for each of the items Net Interest Income (NII) and Non-Interest Income (Non-II) with Total Operating Income (TOI) in the case of selected sample banks separately.

Table 2: Output from Pearson's Correlation of NII and Non-II with TOI for the selected sample banks

Variable	Govt. (N=30)	Private (N=30)	Overall (N=60)	Comment
NII	-0.01	0.94**	0.01	Rejected: Govt. and overall; Accepted: Private
Non-II	0.84**	0.43*	0.76**	Accepted: All cases

*Source: Derived from secondary data retrieved from annual reports of selected banks applying SPSS version 24; *and** respectively at 5% and 1% level with two trialled tests; within the first parentheses indicates the values of N.*

Table 2 depicts the measures of the relationship of Net Interest Income (NII) and Non-Interest Income with Total Operating Income. In case Net Interest Income (NII), only the private sector(PCBs)(0.94**) has a significant positive relationship with Total Operating Income (TOI) at 1% level of significance, but the rest of the sectors have an insignificant relationship with NII, 0.01 a small degree of negative relationship. Moreover, in the case of Non-Interest Income (NII), SOCBs (0.84**) and overall sectors (0.76**) have a significant relationship with Total Operating Income at 1% level of significance that result is similar with (Mehzabin et al., 2023), where private sectors (0.43*) have a significant positive relationship at 5% level that result is adverse with (Javaid, 2021), indicating that the hypothesis is accepted.

H_2: There is a positive and significant association for each of the items, Total Operating Profit (TOP), with Investment Income (II), Commission, Exchange and Brokerage (CEB) and Other Operating Income (OOI) in every sector of selected sample banks in Bangladesh.

Table 3: Measures of the degree of relationship of Non-Interest Income with Total Operating Profit (TOP) for the selected sample banks.

Variable	Govt. (N=30)	Private (N=30)	Overall (N=60)	Comment
II	0.81**	-0.03	0.71**	Reject: Private Accept: Govt. and Overall
CEB	0.83**	0.51**	0.79**	Accept: for all
OOI	-0.55**	0.48**	0.05	Reject: overall Accept: Govt. and Private

*Source: Derived from secondary data retrieved from annual reports of selected banks applying SPSS version 24; *and** indicate the level of significance at 5% and 1% respectively; where II= Investment Income, CEB= Commission, Exchange and Brokerage, OOI = Other Operating Income*

Table 3 depicts the measures of the relationship of non-interest income with total Operating Profit, with each of the variables Investment Income (II), Commission, Exchange and Brokerage (CEB) and other Operating Income (OOI) in every sector of selected sample banks under review. The analysis table reveals that in Private Bank II (Investment Income), there is a negative and small degree of relationship (-0.03) with TOP, and OOI exhibits a positive and small degree of relationship with the same. It is shown that all the remaining cases are found to have a significant and positive relationship with TOP, except for OOI in the government Sector. The CEB had a significant positive relationship with profitability in all three cases, which results in adverse outcomes (Javaid, 2021).

Table 4: Model Summary of the selected sample banks

Particulars	Govt.	Private	Overall
R-Square	0.73	0.65	0.73
Adjusted square	0.70	0.61	0.71
F-value (ANOVA)	22.97** (3,26)	15.95** (3,26)	49.36** (3,56)

Source: *Derived from secondary data retrieved from annual reports of selected banks applying SPSS version-24; *and** indicated the level of significance at 5% and 1% respectively; where Dependent Variable: Total Operating Income (TOI), Predictors(Constant): Investment income(II), Commission, exchange and Brokerage(CEB), Other Operating income(OOI),*

Table 4 presents the model summary for the selected banks under the government, private, and overall sectors in Bangladesh, where the dependent variable is Total Operating Profit (TOP) and the predictors are Investment Income (II), Commission, Exchange, and Brokerage (CEB), and other Operating Income (OOI). Total variance explained by the predictors included in the models was found to be 73%, 65% and 73% for the analysed sectors, respectively, with 1% level of significance, with a degree of (3.26) in the ANOVA test. So the three models have the best fit for further analysis.

Table 5: Measurements of the Standardized ß-co-efficient of the selected sample banks

Variables	Govt.			Private			Overall		
	ß	t-Value	VIF	ß	t-Value	VIF	ß	t-Value	VIF
II	0.39	1.5	5.0	0.04	0.35	1	-0.04	-0.23	4
CEB	0.63	2.5**	5.0	0.67	5.58**	1	0.93	5.99**	4
OOI	0.21	1.3	2.4	0.65	5.31**	1	0.34	4.55**	1

Source: *Derived from secondary data retrieved from annual reports of selected banks applying SPSS version-24; *and** indicated the level of significance at 5% and 1% respectively; where Dependent Variable: Total Operating Income(TOI), Predictors(Constant): Investment income(II), Commission, exchange and Brokerage(CEB), Other Operating income(OOI),*

Table 5 measures the impact of the predictors Investment Income (II), Commission, Exchange, and Brokerage (CEB), and other Operating Income (OOI) on the dependent variable Total Operating Profit (TOP), which is included in the fitted models for the different sectors under review. In the Government sector, CEB; in the private sector, CEB and OOI, and overall, CEB and OOI have shown a positive and significant impact on Total Operating Profit (TOP. In the remaining cases, insignificant positive impacts have been found, except for the II overall. Accepted situations of multicollinearity, as indicated by VIF values (1-5), were also found throughout the analysis.

VIII. Major Findings Of The Study

Based on the analysis, major findings of the study are stated below:

- Pearson's correlation of NII with TOI for the Government and overall was estimated as (-0.01) and (0.01), respectively, indicating an interest liabilities trend to reduce TOI, but in the case of Private, it was (0.94**), positive and significant, showing the increasing position of TOI.
- Non-II had the positive significant relationships in Govt.(0.84**), Private (0.43**) and overall (0.76**), suggesting it plays a substantial role in enhancing TOI for all of the selected banks.
- In case of II (Investment Income) of Govt. and overall selected banks the degree of relationship was found 0.81** and 0.71** respectively suggested increasing position of TOP but it was decreasing in private banks (-0.03).
- In the case of CEB, the degree of relationship was found to be positive and significant, amounting to, amounting to 0.83**(Govt.), 0.51**(Private), and 0.79** (overall), with TOP showing strong support for income diversification.
- In the case of OOI, there was a positive and significant relationship only with the Private banks (0.48**), indicating a contribution to enhancing TOP. However, in the case of OOI, Government banks indicate negative, significant effects (-0.55**) on TOP and Overall position, showing positive but not significant effects on TOP, indicating that excessive expenditure was incurred to generate other operating income.
- The beta coefficient of II in Govt. (0.39), Private (0.04) and overall (-0.04) had an insignificant impact on TOP, indicating II is a weak driver for TOP of the selected banks.
- The beta coefficient of CEB was found to be significant and had a positive impact on TOP by 0.63 (Govt.), 0.67(Private), and 0.93(Overall) at 1% level of significance, suggesting transactional business contribution to the TOP substantially to the banks.
- The beta coefficient of OOI, indicating that it had a significant positive impact on TOP for Private (0.65) banks and overall banks (0.34) at 1% level of significance. However, the government bank's profitability is not impacted by OOI.

IX. Conclusion

Performing the activities of Non-interest income, banks even outside of the traditional interest on loans and securities. It is a diversified revenue system that involves fee-based services and expanding with an increasing trend globally as well as within the country. There is a foremost necessity to change the financial structure, adopt technology, and regulate in accordance with the increasing demand for services in both the public and private banking sectors in Bangladesh.The undertaking research works set out to measure the trends of Non-interest income and its components; empirical strategies to compare the public and private banks, and interpretations based on policy recommendations for regulators and managers of the banks in Bangladesh

X. Suggestions, And Recommendations

On the basis of major findings, researchers' experience and observations the following suggestions and recommendations are highlighted:

1) The Govt. banks must be taken special attention to increase the Interest income by reducing NPLs(Non-Performing Loans), quick recovery, of must be increased by reducing the recovery of advances and has gradually increased to a deficit position due to NPLs. On the other hand, PCBs have no such deficit situations. The authority should prioritize reducing NPLs in SOCBs and introduce robust monitoring systems in PCBs.
2) The banking authority should diversify the sources of Non-II by expanding stable income streams like account services, remittances, fees from digital payment systems, etc.
3) Management should enhance transparency and customer protection by introducing fee disclosure to foster trust and confidence, especially in digital services.
4) Proper authority should be taken to expand Fin-Tech services, such as mobile banking, agent banking, and other financial inclusions.
5) The bank management should introduce measures to ensure the concern from risk and stress under adverse situations, such as trading losses, digital fraud, and control of capital buffer for volatility.
6) The bank authority should strengthen governance and supervision to increase Non-II.
7) The Bangladesh Bank should include Non-II to volatility indicators to detect risk as early as possible.
8) The authority should cap excessive fees on essential services for low-income groups to enhance Non-II.

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