DIVERSIFICATION IN BANKING: IS NONINTEREST INCOME THE ANSWER FOR PAKISTAN'S CASE?

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ABSTRACT: *During recent times, banks in Pakistani banking sector have expanded their earnings beyond the traditional activities. Keeping in view the recent trend of rising non-interest revenues, this study aims at analyzing the determinants of non-traditional income activities and income diversification in Pakistan. Generalized Least Square is used with balanced Panel data set of 19 commercial banks of Pakistan including public, private and foreign banks for the period 2006 to 2012. Empirical results show a positive relationship between declining loan quality and non-interest income, which shows that banks are more likely to increase earnings from non-traditional sources in order to avoid risky interest loans. Results also show that non-interest income and business growth as measured by advances to total assets are positively related, which indicates the presence of cross selling and fee charge on loan origination etc. Also a positive relation between size and non-interest income and between natural logarithm of total assets and non-interest income is observed, which indicates that banks with more deposits and total assets are likely to earn more fee-based income. Moreover, the results show that non-interest income and ROE are positively associated, while a weak negative relationship is found between non-interest income and ROA. Results suggest policy makers to take into account all the factors that drive market competition in process of policy formulation.*

Key Words: Income Diversification, Non-interest income, Generalized Least Square.

1. INTRODUCTION

Changing face of global banking that started after financial liberalization, deregulation and introduction of technology in past few decades has led to fierce competition among the banks.

In wake of deregulation and financial liberalization, barriers to entry were reduced followed by mergers and acquisitions. Also, the introduction of alternate delivery channels like ATMs etc. created a competition among banks and induced them to expand their earnings by diversification of income. As a consequence of financial deregulation, banks have faced more competition not only from banking institutions but also form Non-Banking Financial Institutions (NBFIs). Technology induced growth of branchless banking has tapped in a major chunk of unbanked population of the country. Due to easy to use and wide range of services offered by branchless banking, Commercial banks have become more concerned about introducing new and attractive services [1, 18]. In doing so, it is easier for banks to diversify the services provided by them rather than deviating from the norms of prudent lending. During the period of 2006-2012 the total non-interest income of overall banks of Pakistan shows an upward trend. Also it can be seen from the graph that even during the financial crunch of year 2008 and afterwards the level of non-interest income remained steady and thus banks were saved to some extent because of this income steady income stream. Previous studies in Pakistan have focused on ownership structure, portfolio diversification of banks and their associations with risk, profitability or bank performance. But no specific study has yet been made to document the relationship between income diversification, ownership, and bank characteristics. The motivation of this study is to find out whether public sector banks or private banks are seeking revenue from diverse sources other than traditional activities-supply of loans. Relevant review of literature in this regard is reviewed as follows:

2. Literature Review

Over the past few years, a shift has been seen in income generation activities of banks .Banks have diverted from their traditional function of intermediation. Many studies in past have attempted to analyze this displacement of banks.

[20] studied the potential gains that banks of U.S banking industry could have by diversifying into non-interest income. The study used two types of data, aggregate data of U.S. Banking industry & bank level data over a period of time spanning 1984-2001.Results showed that using aggregate data, income earned from non-interest sources was more volatile than the interest income.

Others examined the relationship between bank ownership and the lending behavior of the banks. The data was obtained for the time period 1995 to 1999[17]. The results found that state owned banks were less affected by the macroeconomic conditions thus were effective in credit smoothening during such shocks. While the lending behavior of private and foreign banks were not much different from each other.

Others investigated the impact of income diversification on performance of Italian banks [4]. For this purpose annual data extended over a period of 1993-2003 of Italian banks is used. Panel regression model and derivatives of Sharpe ratio were used to capture the relationship. Results showed that income diversification and risk-adjusted returns are positively related, while for smaller banks which earn small portion of non-interest income are more likely to gain diversification benefits.

Kim. J. G., *et. al.*, investigated the determinants of non-interest income and the impact of increased non-interest income on bank performance [12]. The study uses panel data estimation of South Korean banks to examine the association between increased non-interest income and bank characteristics, market conditions, and technological factors. The findings of the study showed that technological advances increase the non-interest income. On the performance side, non-interest income results in lower profits and higher risk.

In [2], authors studied the comparison of financial performance of private and public commercial banks of Pakistan. This study used the financial ratios for period 2006-2009 in order to make a comparison of performance among the banks. Results showed that private banks are larger in size, have higher spread ratio and higher net interest margin. While public banks have higher ROE and ROA as compared to private banks for the time period 2006-2009. Doğan, M. [6], compared the financial performance of domestic and foreign banks of Turkey. The study used dataset consisting of 20 banks; including 10 foreign and 10 domestic banks over a period 2005-2011. Financial ratios were used to measure the different dimensions of financial performance. Results showed that Foreign Banks had higher ROA while domestic banks had higher ROE. Domestic banks had more deposits as compared to their foreign counterparts. Also domestic banks had more assets and better asset quality as compared to foreign banks. Domestic banks were better in terms of NPL as compared to foreign banks [15;14].

Elsewhere, others explored the existence of benefits from diversification of bank revenues in emerging market economies [16]. They used an exclusive dataset with comprehensive information on non-interest income including data on 39 banking entities of Philippines for the period 1995 to 2005. They found that there is an increased reliance on non-interest sources of income and doing so not only increases the profitability of banks but also improve risk-adjusted returns. Further the study found that revenue diversification tends to benefit the foreign banks more than domestic banks.

This paper considers the case of Pakistan and subjects the data to rigorous econometric analysis to improve the results previous findings.

2.1 Research Questions

This research would attempt to answer following questions.

1) What are determinants of non-interest income among banks of Pakistan?
2) Does ownership matter in pursuit of non-interest income?

2.2 Hypotheses

Accordingly, the hypotheses are listed below:

H_1: *There is a positive relationship between size and non-interest income.*

H_2: *There exists a positive relationship between deposits and non-interest income.*

H_3: *There is a negative relationship between advances and non-interest income.*

H_4: *There exists a positive relationship between loan loss provision and non-interest income.*

H_5: *There is a positive relationship between profitability and non-interest income.*

H_6: *There exists a positive relationship between equity and non-interest income.*

H_7: *There is a positive relationship between NPL and non-interest income.*

H_8: *Type of ownership impacts the level of non-interest income of banks.*

3. Estimable Model and Data

$$NII_{it} = \mu_i + \delta_t + \beta_1(AD_{it}) + \beta_2(EQ_{it}) + \beta_3(LLP_{it}) + \beta_4(NPL_{it}) + \beta_5(ROA_{it}) + \beta_6(ROE_{it}) + \beta_7(DEP_{it}) + \beta_8(LNTA_{it}) + \epsilon_{it}$$

Where $i = 1, 2,\dots, N$ and $t = 1, 2, 3,\dots,T$

Here, NII is our dependent variable and AD, EQ, LLP, NPL, ROA, ROE, DEP and LNTA are independent variables. While μ_i has been used to capture the bank specific effects and δ_t is used to capture time specific effects and ϵ_{it} is the error term.

3.1 Data

This research has used secondary data. For this purpose the data on bank specific variables has been obtained from State Bank of Pakistan's publications on financial statement analysis for the years 2006-2012. The dataset consists of 19 commercial banks of Pakistan including 4 public banks, 10 private banks and 5 foreign banks that were operating in Pakistan during 2006 and 2012.[1]

4. Panel Data Estimation

4.1 Econometric Concerns

Besides panel regression, other econometric concerns are taken care of. Multicollinearity is checked using variance inflation factor (VIF) test. Average value of VIF is 3.25, which is much below threshold of 10. This implies no serious concern of multicollinearity in the estimable model. Heteroskedasticity is found via modified Wald test for groupwise heteroskedasticity. $\chi^2(18)$ test statistic is 38 with a p-value of 0.004. Wooldridge test for Autocorrelation shows absence of autocorrelation in data, since F(1, 17) = 2.009 with a p-value of 0.174. Hausman Test for selection between random effects (RE) estimation and fixed effects (FE) estimation has a p-value of 1.000, evidently approving the selection of RE estimation. However, one cannot depend on the results of RE, since presence of heteroskedasticity is evidenced in the data. Therefore, Generalized Least Square (GLS) estimation is used. For more on GLS, see [13].

Table 1: RE using Generalized Least Square

Dependent Variable is $Y_{i,t}$

Regressor	Coefficient	z-statistics	p-value
AD	0.350	5.530	0.000
EQ	0.410	6.010	0.000
LLP	0.194	2.430	0.015
NPL	-0.369	-4.230	0.000
ROA	-0.276	-1.670	0.095
ROE	0.506	2.970	0.003
DEP	0.261	4.110	0.000
TA	0.249	3.520	0.000
Intercept	0.003	0.070	0.940

Wald $\chi^2(8)$ = 148.21, p-value = 0.000

Note: Authors' estimates

Results obtained from GLS show that advances to total assets are significantly and positively related to non-interest income. Equity as measured by equity to total assets also has positive and significant relationship with the non-interest income. Loan loss provision as a ratio of total assets is significant at 10% level of significance. ROE positively and significantly impacts the non-interest income. Similarly deposits to total

[1] They are Allied Bank, Askari Bank, Bank of The Punjab, Habib Bank, United Bank Limited, Summit Bank, National Bank of Pakistan, Silk Bank, Muslim Commercial Bank, First Women Bank Limited, JS Bank, Bank of Khybar, Soneri Bank, Standard Chartered Bank, Deutsche Bank AG, Citibank, HSBC Bank Middle East Ltd, HSBC Bank OMAN S.A.O.G and The Bank of Tokyo-Mitsubishi-UFJ.

assets and size of the bank as measured by natural logarithm of total assets also hold positive and significant relationship with the non-interest income of the banks. Non- performing loans as measure by NPL to gross advances holds significant and negative relationship with non-interest income.

5. CONCLUSION

Our results show that ownership plays an important role in quest for non-interest income i.e. Public, private and foreign banks earn different levels of non-interest income. In Pakistan, foreign banks earn more non-interest income followed by public and private banks. Private Banks derive major part of their earning from interest income. Some others showed that public sector private banks earn higher spreads because they enjoy low cost of funds due to the stable deposit base, wide network of branches and market standing as depicted by public confidence[11]. Our empirical results showed that loan loss provision to total asset significantly and positively impacts the non-interest income. It was also found that non-interest income and loan loss provision to total assets are related positively with each other [19]. During 2006, SBP Financial Stability Review also showed a positive relationship between Provisioning and profitability of the banks. Our study found a positive relationship between total assets and non-interest income of banks. These results are consistent with [3] who investigated that for German Banks non-interest income is positively related with total assets. Authors in [5], also concluded that larger banks earn more interest income and well managed banks give less importance to no-interest income. Also, our results revealed that equity to total assets is positively related to no-interest income. Thus, a less leveraged bank with a better solvency prospects in future earns more income from non-traditional sources so it can safely maximize the wealth of shareholders. Our results documented a positive and significant relationship between advances to total assets and non-interest income. These results are in contrast with the findings of [19], they concluded that banks with higher loan to asset ratio and high level of loans earn lesser fee income. But as per the findings of [20] there exists a correlation between non-interest income and interest income. So, it should be noted here that when a bank advances loans, it charges fee for loan processing and origination. It means, as the amount of loans increases the fee income charged on loan origination will also move in positive way thus increasing non-interest income of the banks. Also the bank may cross sell the fee based products/services to the customer who is in a borrowing relationship with the bank. Our results documented a negative but insignificant relationship between ROA. Our results are in line with the finding in [8], a weak negative relationship was found between ROA and fee income. Similarly, a study on Australian credit unions made by [7] also showed negative relationship between ROA and fee income. Our study documented a negative relationship between non-performing loans to total advances and non-interest income. [20] showed that interest income and non-interest income are correlated with each other. So, we can imply that when banks lends to a customer then in order to establish long term relationship with the client, bank will sell other fee based services to the client as well. And in the event of default, bank will lose both interest as well non-interest income. Thus, when NPLs increase non-interest income decreases in short term. But over long term increase in NPLs may induce bank to explore more avenues to earn non-interest income.

This study has important implications for the regulators as well as the policy makers at commercial banks. Others [21], said when banks have more options to earn from different sources, they can make for the deficiency in earning from traditional activities arising from enhanced competition by focusing on a product mix which includes driving more revenues from non-traditional sources. So, banks will adopt such a competition strategy where it can lend at low lending rates enforced by regulatory but still earn profit in the form of non-interest income. Thus, policy makers should take into account all the factors that drive market competition while formulating policies. As banks begin to derive a larger portion of income from non-traditional activities, they would deviate from their core function of financial intermediation thus depriving the borrowers from the supply of loans and making the economic growth stagnant as a major chunk of income would now be obtained in form of fee-income (trading income, commission, underwriting etc.). On other hand, if banks do not gain any benefit from diversification they would be attracted towards non-prudent lending just to maximize the interest income, which would give rise to moral hazards.

Future research can inquire if non-interest income increases the volatility of earnings or decreases it, this study can be refined further by taking into account the impact of non-interest income on the risk and profitability of the banks. Also, non-interest income can be further broken down into its components to investigate that which component contributes towards volatility of earnings.

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