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# Profitability Study of Non-bank Financial Institutions A Panel Data Analysis

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***Abstract***

*The importance of nonbank financial institutions (NBFIs) to the economy cannot be overemphasized. Compared to the previous year, the deposit of NBFIs rose by 36% in the year 2013. Analyzing the profitability of non-banking institutions is the central theme of the study: it marks off the model nonbank financial institutions use in Bangladesh. Evoking insight into profitability model helps in pinning down strength and weakness, which in turn ushers to better dealing with distress condition. Thus understanding NBFI profitability model has policy implication. Using panel data the article regresses the profitability on assets, non-interest revenue and equity. The model accounts 90 of variability in profits. The effect of noninterest income is most pronounced among the regressors, which vouches that profitability hinges more upon it for NBFIs and less on interest source. Size puts a negative impact on profits negating the the bigger the better notion, however strong the words supporting it are. The effect of equity is understandably negative on ROE.*

**Keywords :** Business model, profitability, NBFI.

**JEL Classification :** G23, G32

## Introduction

Started in 1981, the nonbanking sector has increased in size in both absolute and relative terms. A private sector nonbank financial institution (NBFI) namely Industrial Promotion and Development Company (IPDC) was the pioneer in the sector in Bangladesh (Gupta and et el, 2013: 17-18, Ahmed and Chowdhury 2007:2). The development of both banks and non-bank financial institutions is necessary for assuring a strong and stable financial system for the country as a whole (Pirtea and et el, 2008:3).

Financial development in a country starts with the development of banking institutions. As the development process proceeds, NBFIs become prominent alongside the banking sector. Both can play significant roles in influencing and mobilizing savings for investment (Goldsmith 1969 in Ahmed and Chowdhury 2007:1).

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That financial development plays an important role in promoting the growth of many countries is nothing new (Cheng and Degryse 2004:3). One strand of research argues that financial development matters for economic growth by observing that financial development is significantly correlated with local growth. First, financial intermediation economizes the costs associated with mobilizing savings, and therefore increases capital accumulation. Second, financial intermediaries evaluate firms, managers and market conditions, and reallocate capital to its best use. Moreover, financial intermediaries monitor firms and exert control to overcome agency problems. Financial intermediation meanwhile diversifies investment risks, which enhances the output and in turn economic growth. In their view, differences in the quantity and quality of services provided by financial institutions partly explain why countries grow at different rates (Shaw 1973, Boyd and Smith 1992).

Quite to the contrary, another strand of research reasons that financial development may react to the expectation of enhanced future economic growth; hence economies with good growth prospects develop institutions to provide funds necessary to support those good prospects. Finance does not cause growth, but reacts to the demand from the real sector (Robinson 1952). Guiso, Sapienza and Zingales (2004) study the effects of differences in local financial development on economic activity in Italy. They find that local financial development enhances the probability that an individual starts a business, increases industrial competition, and in turn spurs firm growth.

Islam and Osman examined the long run relationship between per capita real GDP and the development of NBFIs based on Malaysian market. They showed that NBFIs are a vital component of the financial sector through which financial resource was effectively channelized from the surplus units to the deficit units, and they promote long run sustainable economic growth (Islam and Osman, 2011: 187).

The borrowings, deposits and capital of non-bank financial institutions increased by 27.5 percent, 36.1 percent and 17.7 percent respectively in calendar year 2013 compared with those of the previous year. The trend of increasing capital shows moderately sound financial base of the non-bank financial institutions (Financial Stability Report of Bangladesh Bank, 2013).

The aim of this study is to analyze the profitability of non-banking institutions. Using panel data profitability is regressed on assets, non-interest revenue and equity. It shows what the determinants of profits are in non-bank financial institutions. This study discovers the inner strength of profitability of nonbank financial organizations; also it points out incongruity and instability, which is important from the policy point of view. The analysis evokes the business model NBFIs pursue, and the profitability model has strong bearing on the ability of firms to withstand adverse condition.

## Theoretical Underpinning

The current regulatory system fails to reduce the external costs caused by overly risky behavior of non-bank financial institutions ex ante due to toothless regulations or nonexistence of regulation at all, and that ex post the system fails to sufficiently reduce systemic risk caused by the failure of non-bank financial institutions and does a poor job of limiting the moral hazard and uncertainty that it creates (Hashmall, 2010:15).

Vittas opines that creating new marketable securities in the area of leasing, factoring and venture capital, NBFIs create long term financial resources and provide a strong stimulus to the development of capital market (Vittas, 1997:1). Popularity of lease financing is due to tax advantages, timesaving and conservation of cash and funds. Off-balance sheet financing opportunities provided by operating leases are an additional attraction of leasing (Islam 1999).

Profitability of a financial institution basically depends on its operating efficiency, capital structure, fixed charges and income and liquidity position. The common assumption is that growing financial performance will lead to better functions and actions of the organizations. (Farah et al., 2012:12). Analyzing the determinants of profitability in financial sector Mirza and et al has selected size, leverage, liquidity and age as the determinants of the profitability. Moreover, they also incorporated a variable "Net Investment in Lease Finance" which is one of the important variables in determining the profitability of the leasing firms (Mirza and et al., 2012:82).

Retail deposit is more stable in periods of crisis; since they are typically insured by the government, their withdrawals in most circumstances are usually predictable at the aggregate level and mostly linked to depositors' liquidity needs. The stickiness of deposits is also related to high switching costs and the transaction services that retail depositors receive from banks. Deposits, however, are often less flexible in adapting to changes in financing needs, to fund investment opportunities, compared with wholesale markets (Altunbas and et el, 2011:15-16).

A stronger customer deposit base is relatively more effective in reducing distress for the riskier compared to the less risky banks. Similarly a higher proportion of market funding increases the likelihood of distress of the riskiest banks although it has no effect on the less risky institutions (Altunbas and et el, 2011:5-6). Higher levels of loans to total assets should be reflected in a higher profit due to higher risk. In particular, a high ratio of noninterest earning assets to total assets is shown to impact bank profitability negatively (Lindblom, 2010:5).

Theory provides no clear prediction regarding the impact of noninterest income on risk. On the one hand, does a higher share of noninterest income make banks less dependent on interest income and improve risk diversification which should make them more stable. Noninterest income is usually more volatile than interest income, because it is more difficult for borrowers to switch their lending relationship due to information costs. Noninterest income also increases operational leverage, since expanding into noninterest income may

imply a rise in fixed costs. Financial leverage is also higher because regulators require holding less capital against noninterest income activities. Both increase the volatility of noninterest income and make it more risky than interest income (Kohler, 2013:2).

Banks are significantly less risky if they have a more balanced income structure and neither depend heavily on interest or non-interest income. Furthermore the impact of non-interest income on risk significantly depends on the activities used to generate noninterest income with retail-oriented activities being significantly less risky than investment-oriented activities such as those pertaining to capital market activities (Kohler, 2013:1-2).

The financial crisis has demonstrated the need for banks to understand their business models together with the associated risks and to have confidence that performance indicators and executive incentives reinforce desired behaviors. In other words, banks need to understand their business models and have the confidence that these will deliver sustainable value—with appropriate risk mitigations as necessary. They also need to understand the role of performance indicators and executive incentives in driving the right or wrong behaviors—as well as how good governance can make a difference. The financial crisis showed that some banks did not grasp these issues adequately (global banking sector, 2010:7).

Despite the significant build-up of risks that materialized in 2007-09 crisis, the majority of the most commonly used indicators of risk showed a fairly benign picture in the years preceding the crisis. Indeed even the forward-looking measures of risk regularly used by financial institutions, investors, central banks, and regulators to monitor the health of the financial system remained at very low levels. In parallel, existing evidence indicates that there was a convergence in the differences in performance between banks before the crisis broke (as measured by stock market returns). The crisis, however, revealed huge variability across individual banks, as evidenced by the cross-sectional dispersion of risk indicators, which widened significantly during this period. This raises the question of whether the variability in specific bank characteristics, due to their different business models, could have helped in the early identification of hidden risks (Altunbas and et el, 2011:5-6).

Altunbas and et el (2011) find that credit expansion, lower dependence on customer deposits, size and weaker capital in the run up to the crisis accounted for higher ex-post level of distress. Other factors including the amount of market funding and lack of diversification in income sources also contributed to an increase in realized bank risk. Accounting for macroeconomic and institutional factors—including the role of deregulation, economic cycle, competition and asset prices developments—do not change the gist of the results.

Regulators should increase their involvement in and understanding of bank business models and incentives to take on risk. In particular regulators need to consider risk-taking incentives in real time and focus on the potential impact of different business models on risk. The study provides valid reasons for the closer scrutiny of banks experiencing rapid increases in their stock market valuations, to ascertain whether it is driven by improved managerial abilities or by increasing the bank's exposure to hidden risks (Altunbas and et el, 2011:9-10).

Although the academic literature does not provide conclusive evidence that greater size leads to cost and other advantages, there appears to be continual pressure on banks management from shareholders and market analysts to show growth in both revenue and earnings. Bigness is apparently regarded as advantageous (Hanc, 2004:9). In his research Sufian investigated the determinants of bank profitability in a developing economy, case study Malaysian financial sector during the period 2000-2004. The results show that with higher credit risk and higher loan concentration Malaysian banks face lower profitability level. On the other hand, Malaysian banks with higher level of capitalization, higher income from noninterest sources, and higher operational expenses experience higher profitability level (Sufian 2009: 226).

Tarawneh divided the commercial banks in Oman in cohesive categories depending on their financial characteristics revealed by financial ratios. Using simple regression analysis, the effect of asset management, operational efficiency and bank size on the financial performance was determined. The results indicate that banks with higher total capital, deposits, credits or total assets do not always represent a better profitability performance (Tarawneh 2006). Al-Tamimi determined some significant factors influencing performance of the UAE Islamic and conventional banks from 1996-2008. Using regression analysis the researcher concludes that liquidity and concentration were the most significant determinants of national bank performance; on the other hand, number of branches and cost were the most influential factors of Islamic bank performance (Al-Tamimi, 2010:2).

Hossain and Shahiduzzaman (2002) focused on the importance of non-banking sector as a vehicle for the economic development of Bangladesh and identify the underlying problems of the sectors. Ahmed and Chowdhury (2007) found that non-bank financial institutions strengthen the country's financial system and contribute to the economic development of the country through diversified financial services in the market. Using traditional financial indicators like current ratio, debt-equity ratio, return on equity ratio, they analyze the performance of NBFIs and report that in spite of the presence of several constraints, the sector has been performing considerably well in Bangladesh.

In their study Is There Market Discipline for New Zealand Non-Bank Financial Institutions? Hess and Fend see the impact of market discipline through. In the context of non-bank financial institutions they report that the Basel prudential regulation enforces market discipline through more disclosure requirements for if the market participants cannot observe the firm's risk, they are unable to exercise market discipline. Supporting their choice of NBFIs for study of market discipline--more suitable than banking system which due to presence of such moral hazards as 'too big to fail', implicit support or deposit insurance clouds the result--the authors make it apparent that good risk disclosure shift to quality competition and away from pure price competition as market participants cannot reward firms for taking less risk when proper disclosure is absent. Not surprisingly, they find that there indeed appears some play of market discipline as riskier NBFIs offer higher rates. However, what undermines the finding is the hypotheses are tested in OLS framework with no care having been taken regarding OLS assumptions and therefore the procedure is presumably infested with misspecification.

## Methodology

Analyzing the profitability of non bank financial institutions is the theme of the article. The paper delineates the business model pursued by non-bank financial institutions in Bangladesh. It uses panel data--an unbalanced panel. The sample consists of 4 companies, chosen conveniently provided their information is available on the Internet. Financial statements of the five years from 2009-2013 are used to collect data. Specifically the balance sheet and the income statement are analyzed. Profitability as proxied by ROE is regressed on equity, gross non-interest income and total assets. ROE is defined as the ratio of profit after tax to total equity. Non-interest income includes, among others, dividend income from investment, agency and advisory fees, arrangement fees, documentation fees, custodial fees, commission and brokerage, underwriting commission, issue management and portfolio management fees etc.

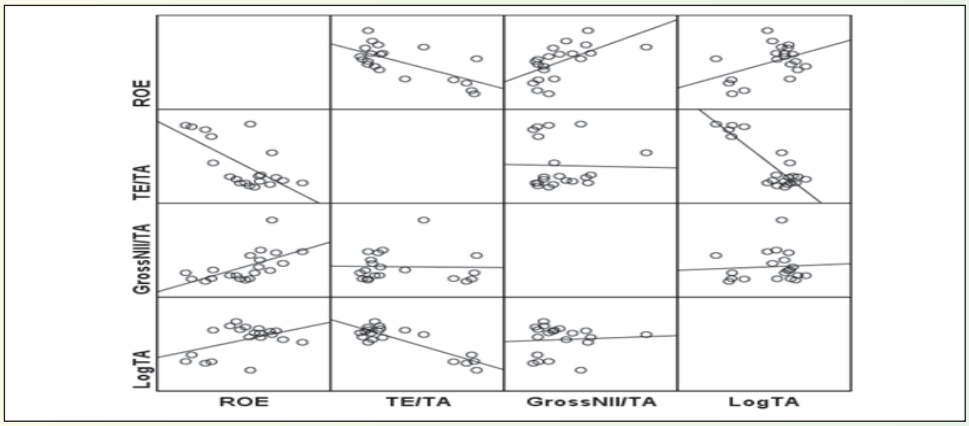



*Figure 1 scatterplot matrix*

$TE/_{TA}$ =is the total equity adjusted for size.

LogTA=is the log of total asset representing the size.

$GrossNII/_{TA}$=is gross noninterest income modified for size.

The following model is considered:

Profitability=function (size, income, equity)

$$ROE = \beta 0 + \beta 1 * \frac{TE}{TA} + \beta 2 * \log TA + \beta 3 * \frac{GrossNII}{TA}$$

## Findings

The regression result shows that the model can explain 88% of variability in the ROE (Table 1). All the regressors are highly significant with absolute t-values well above 2; also indicated by the Prob values. ROE is positively related only with gross non-interest income--which also is the most influential among regressors. The model is correctly specified as

indicated by the Durbin Watson statistic. The model is well fit with a highly significant F statistic. The S.E. of regression also indicates well fit of the model. While the standard deviation of ROE is 10.2%, the standard error of the model is 3.5% (Table 2).

**Table 1**

Dependent Variable: ROE
Method: Least Squares
Sample: 1 20
Included observations: 20

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| GROSSNII_TA | 3.412945 | 0.439943 | 7.757700 | 0.0000 |
| LOGTA | -0.164475 | 0.037204 | -4.420950 | 0.0004 |
| TE_TA | -1.212585 | 0.152325 | -7.960533 | 0.0000 |
| C | 1.006967 | 0.174744 | 5.762534 | 0.0000 |
| R-squared | 0.901785 | Mean dependent var | | 0.203520 |
| Adjusted R-squared | 0.883369 | S.D. dependent var | | 0.102117 |
| S.E. of regression | 0.034874 | Akaike info criterion | | -3.697286 |
| Sum squared resid | 0.019459 | Schwarz criterion | | -3.498139 |
| Log likelihood | 40.97286 | Hannan-Quinn criter. | | -3.658410 |
| F-statistic | 48.96914 | Durbin-Watson stat | | 2.165255 |
| Prob(F-statistic) | 0.000000 | | | |

TE_TA=is the total equity adjusted for size, LogTA=is the log of total asset representing the size, GROSSNII_TA =is gross noninterest income modified for size.

**Table 2**

| Descriptive Statistics | | | | | |
|---|---|---|---|---|---|
| | N | Minimum | Maximum | Mean | Std. Deviation |
| ROE | 20 | .009 | .393 | .20352 | .102117 |
| Prov/TL | 19 | .0032 | .0651 | .014713 | .0167219 |
| LogTA | 20 | 3.21 | 4.69 | 4.1349 | .43849 |
| TE/TA | 20 | .0591 | .3470 | .157721 | .1068866 |
| TL/TA | 20 | .6443 | .9061 | .770531 | .0837353 |
| TD/TA | 20 | .1190 | .6433 | .422252 | .1792103 |
| NetII/TA | 20 | .0266 | .1483 | .061435 | .0353709 |
| GrossNII/TA | 20 | .0021 | .0767 | .019894 | .0182711 |
| Valid N (listwise) | 19 | | | | |

NB: ROE=return on equity, Prov/TL=loan provision adjusted to total loan, =is the total equity adjusted for size, LogTA=is the log of total asset representing the size, TL/TA=total loan adjusted to size, TD/TA=total deposit adjusted to total assets, NetII/TA=net interest income modified for size, =is gross noninterest income modified for size.

When tested for the interaction among variables, no significant interaction is found (see Table 3).

**Table 3**

Omitted Variables Test

Equation: UNTITLED

Specification: ROE GROSSNII LOGTA TE_TA C

Omitted Variables: GROSSNII*LOGTA GROSSNII*TE_TA LOGTA*TE_TA

| | Value | df | Probability |
|---|---|---|---|
| F-statistic | 0.835151 | (3, 13) | 0.4983 |
| Likelihood ratio | 3.524847 | 3 | 0.3176 |

The time series ROE has no unit root at 10% level of significance as indicated by the ADF unit root test. Therefore, the series is stationary (Table 4).

**Table 4**

Null Hypothesis: ROE has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=4)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -2.794388 | 0.0778 |
| Test critical values: | 1% level | -3.831511 | |
| | 5% level | -3.029970 | |
| | 10% level | -2.655194 | |

*MacKinnon (1996) one-sided p-values.

Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 19

The B-G test and the ARCH test indicate there is no serial correlation; and the model neither suffers from heteroscedasticity (Tables 5 & 6).

**Table 5**

Breusch-Godfrey Serial Correlation LM Test:

| | | | |
|---|---|---|---|
| F-statistic | 0.336248 | Prob. F(2,14) | 0.7201 |
| Obs*R-squared | 0.916676 | Prob. Chi-Square(2) | 0.6323 |

**Table 6**

Heteroskedasticity Test: ARCH

| | | | |
|---|---|---|---|
| F-statistic | 2.816869 | Prob. F(1,17) | 0.1116 |
| Obs*R-squared | 2.700755 | Prob. Chi-Square(1) | 0.1003 |

Table 7 shows that there is no pattern visible in the residuals and the residuals do not change systematically. Residuals cluster near zero indicating hemoscedasticity of variance

across values (Figure 2).

**Table 7**

| obs | Actual | Fitted | Residual | Residual Plot |
|---|---|---|---|---|
| 1 | 0.17554 | 0.15174 | 0.02380 | \| . \| * . \| |
| 2 | 0.15463 | 0.16047 | -0.00583 | \| . *\| . \| |
| 3 | 0.24969 | 0.20596 | 0.04373 | \| . \| . * \| |
| 4 | 0.30655 | 0.28302 | 0.02353 | \| . \| * . \| |
| 5 | 0.25297 | 0.28574 | -0.03277 | \| * \| . \| |
| 6 | 0.20561 | 0.18194 | 0.02367 | \| . \| * . \| |
| 7 | 0.18791 | 0.20015 | -0.01224 | \| . * \| . \| |
| 8 | 0.28686 | 0.25068 | 0.03617 | \| . \| .* \| |
| 9 | 0.23543 | 0.26313 | -0.02770 | \| .* \| . \| |
| 10 | 0.21857 | 0.25261 | -0.03404 | \| * \| . \| |
| 11 | 0.09901 | 0.12765 | -0.02865 | \| .* \| . \| |
| 12 | 0.29300 | 0.30091 | -0.00791 | \| . *\| . \| |
| 13 | 0.25548 | 0.31356 | -0.05807 | \|* . \| . \| |
| 14 | 0.32952 | 0.29998 | 0.02954 | \| . \| *. \| |
| 15 | 0.39326 | 0.37537 | 0.01788 | \| . \| * . \| |
| 16 | 0.02854 | 0.01365 | 0.01489 | \| . \| * . \| |
| 17 | 0.00887 | 0.06441 | -0.05554 | \|* . \| . \| |
| 18 | 0.07355 | 0.06200 | 0.01155 | \| . \|* . \| |
| 19 | 0.09360 | 0.10432 | -0.01071 | \| . *\| . \| |
| 20 | 0.22182 | 0.17313 | 0.04870 | \| . \| . * \| |


*Figure 2*

Test of multicollinearity indicates existence of no collinearity as the value falls from zero order to partial and parts (Table 8) and the residuals form a normal curve (Figure 3).

**Table 8**

Coefficients[a]

| Model | | Unstandardized Coefficients | | Correlations | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Zero-order | Partial | Part | Tolerance | VIF |
| 1 | (Constant) | 1.044 | .173 | | | | | |
| | TE/TA | -1.233 | .149 | -.665 | -.905 | -.635 | .242 | 4.138 |
| | GrossNII/TA | 3.427 | .429 | .598 | .900 | .614 | .990 | 1.010 |
| | LogTA | -.173 | .037 | .429 | -.772 | -.361 | .241 | 4.155 |

a. Dependent Variable: ROE, TE_TA=is the total equity adjusted for size, LogTA=is the log of total asset representing the size, GROSSNII_TA =is gross noninterest income modified for size.

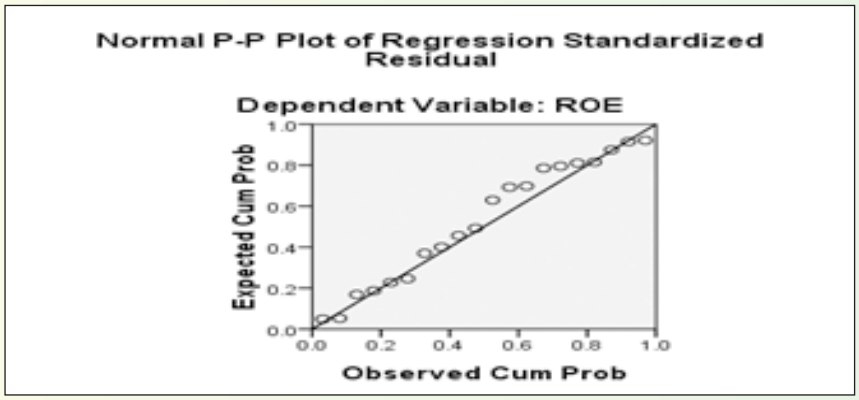



*Figure 3*

**Table 9**

| Residuals Statistics[a] | | | | | |
|---|---|---|---|---|---|
| | Minimum | Maximum | Mean | Std. Deviation | N |
| Predicted Value | .01143 | .37560 | .20111 | .096935 | 20 |
| Residual | -.056267 | .048107 | .002405 | .032080 | 20 |
| Std. Predicted Value | -1.904 | 1.752 | .000 | .973 | 20 |
| Std. Residual | -1.654 | 1.414 | .071 | .943 | 20 |
| a. Dependent Variable: ROE | | | | | |

## Non-linear? A Nuanced Consideration

Do the regressors behave distinctly across the conditional distribution? More precisely, we are interested to know whether income, size and capital exhibit a non-linear relation; that is, they have different impact at different quantiles. Estimating quantile regression reflects a more complete picture of distributional dependence between bank profitability and business model. In other words, it exposes if conditional variables tend to have variant impact at upper and lower deciles compared with the mean as estimated by the OLS.

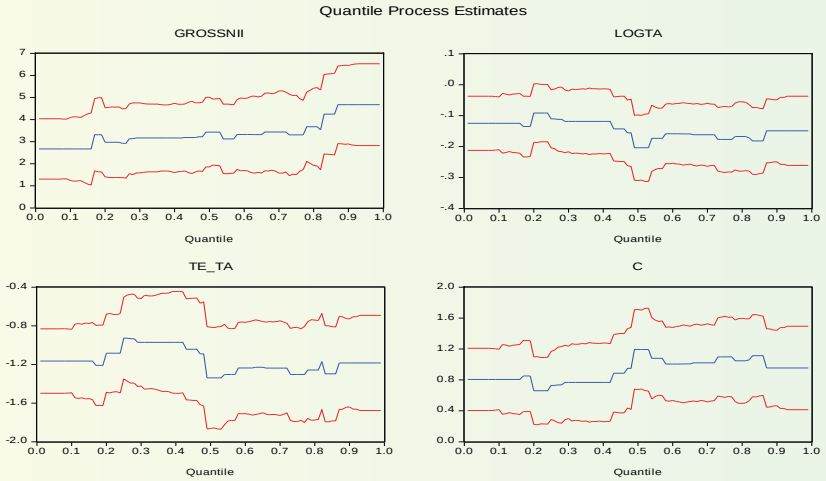
**Table 10**

Dependent Variable: ROE
Method: Quantile Regression (Median)
Sample: 1 20
Included observations: 20
Ordinary (IID) Standard Errors & Covariance
Sparsity method: Kernel (Epanechnikov) using residuals
Bandwidth method: Hall-Sheather, bw=0.35793
Estimation successfully identifies unique optimal solution

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| GROSSNII_TA | 3.433241 | 0.810623 | 4.235311 | 0.0006 |
| LOGTA | -0.203762 | 0.068550 | -2.972460 | 0.0090 |
| TE_TA | -1.338373 | 0.280668 | -4.768529 | 0.0002 |
| C | 1.193231 | 0.321977 | 3.705954 | 0.0019 |
| Pseudo R-squared | 0.664626 | Mean dependent var | | 0.203520 |
| Adjusted R-squared | 0.601743 | S.D. dependent var | | 0.102117 |
| S.E. of regression | 0.036441 | Objective | | 0.264738 |
| Quantile dependent var | 0.218574 | Restr. objective | | 0.789382 |
| Sparsity | 0.128516 | Quasi-LR statistic | | 32.65862 |
| Prob(Quasi-LR stat) | 0.000000 | | | |

TE_TA=is the total equity adjusted for size, LogTA=is the log of total asset representing the size, GROSSNII_TA =is gross noninterest income modified for size.

Figure 4 provides a summary illustration of the impact of independent variables for each percentile. The solid lines represent 99 estimates of the quantile regression coefficients ranging from .01 to .99 together with 95% confidence intervals. The figure indicates that the mean is a sufficient statistic to summarize the relationship for every conditional variable viz income, size and capital. The figure also shows that income, size and equity variables have a similar impact, if not same, across their own conditional distributions on bank profitability.




TE_TA=is the total equity adjusted for size, LogTA=is the log of total asset representing the size, GROSSNII_TA =is gross noninterest income modified for size.

*Figure 4*

The quantile regression estimates for the coefficients of the full model for 10%, 25%, 50%, 75% and 90% quantiles are presented in Table 11. For all the variables the coefficients do not show statistical significance. That is, whether lower or upper quantiles, coefficients are not statistically significant. This suggests that a variable contributes equally across the entire conditional distribution. Variables do not have any distributional effects. Quite reassuringly, the signs of the regression quantile coefficients are coherent with OLS results.

***Table 11***

Quantile Process Estimates

Equation: EQ01

Specification: ROE GROSSNII_TA LOGTA TE_TA C

Estimated equation quantile tau = 0.5

User-specified process quantiles: .1 .25 .5 .75 .9

Display all coefficients

| | Quantile | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|---|
| GROSSNII_TA | 0.100 | 2.669739 | 0.727120 | 3.671663 | 0.0021 |
| | 0.250 | 2.926452 | 0.795230 | 3.680006 | 0.0020 |
| | 0.500 | 3.433241 | 0.804417 | 4.267986 | 0.0006 |
| | 0.750 | 3.305752 | 0.917577 | 3.602696 | 0.0024 |
| | 0.900 | 4.673358 | 0.904909 | 5.164451 | 0.0001 |
| LOGTA | 0.100 | -0.124780 | 0.043540 | -2.865887 | 0.0112 |
| | 0.250 | -0.110302 | 0.047864 | -2.304496 | 0.0349 |
| | 0.500 | -0.203762 | 0.054153 | -3.762730 | 0.0017 |

| | | | | | |
|---|---|---|---|---|---|
| | 0.750 | -0.176831 | 0.054674 | -3.234310 | 0.0052 |
| | 0.900 | -0.149109 | 0.051236 | -2.910243 | 0.0102 |
| TE_TA | 0.100 | -1.164426 | 0.167442 | -6.954226 | 0.0000 |
| | 0.250 | -0.927521 | 0.215727 | -4.299522 | 0.0006 |
| | 0.500 | -1.338373 | 0.267398 | -5.005164 | 0.0001 |
| | 0.750 | -1.303934 | 0.249040 | -5.235841 | 0.0001 |
| | 0.900 | -1.184521 | 0.232373 | -5.097501 | 0.0001 |
| C | 0.100 | 0.806361 | 0.199504 | 4.041818 | 0.0009 |
| | 0.250 | 0.728600 | 0.224716 | 3.242309 | 0.0051 |
| | 0.500 | 1.193231 | 0.264427 | 4.512513 | 0.0004 |
| | 0.750 | 1.098334 | 0.267960 | 4.098878 | 0.0008 |
| | 0.900 | 0.954399 | 0.249234 | 3.829333 | 0.0015 |

TE_TA=is the total equity adjusted for size, LogTA=is the log of total asset representing the size, GROSSNII_TA =is gross noninterest income modified for size.

The slope equality test demonstrates that the slope coefficients of regression quantiles are all the same (Table 12). The equality test applied the Wald test where the null hypothesis is that slope coefficients are not different across quantiles.

***Table 12***

Quantile Slope Equality Test

Equation: EQ01

Specification: ROE GROSSNI_TAI LOGTA TE_TA C

Estimated equation quantile tau = 0.5

User-specified test quantiles: .1 .25 .5 .75 .9

Test statistic compares all coefficients

| Test Summary | | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|---|---|---|---|---|
| Wald Test | | 11.76737 | 12 | 0.4645 |
| Restriction Detail: b(tau_h) - b(tau_k) = 0 | | | | |
| Quantiles | Variable | Restr. Value | Std. Error | Prob. |
| 0.1, 0.25 | GROSSNII_TA | -0.256713 | 0.637053 | 0.6870 |
| | LOGTA | -0.014478 | 0.043203 | 0.7375 |
| | TE_TA | -0.236905 | 0.184651 | 0.1995 |
| 0.25, 0.5 | GROSSNII_TA | -0.506789 | 0.875915 | 0.5629 |
| | LOGTA | 0.093460 | 0.053133 | 0.0786 |
| | TE_TA | 0.410852 | 0.217129 | 0.0585 |
| 0.5, 0.75 | GROSSNII_TA | 0.127488 | 0.822381 | 0.8768 |
| | LOGTA | -0.026931 | 0.058604 | 0.6458 |
| | TE_TA | -0.034439 | 0.266734 | 0.8973 |

| | | | | |
|---|---|---|---|---|
| 0.75, 0.9 | GROSSNII_TA | -1.367606 | 0.756116 | 0.0705 |
| | LOGTA | -0.027722 | 0.044246 | 0.5310 |
| | TE_TA | -0.119413 | 0.209550 | 0.5688 |

TE_TA=is the total equity adjusted for size, LogTA=is the log of total asset representing the size, GROSSNII_TA =is gross noninterest income modified for size.

## Concluding Remarks

Size has negative impact on profitability. As the size of an organization increases in terms of assets, its profitability takes a downward turn. On the other hand, ROE rises in pace with non-interest income and its effect is more resounding than either of the other regressors viz size and leverage. Therefore companies are more dependent on noninterest income than interest income for making profits. This suggests that the revenue pie for nonbank financial institutions is monochrome. NBFIs can be better off by diversifying their revenue source, thus in turn becoming stronger in withstanding income cyclicality. Finding an optimum size is what challenges NBFIs as they discover an inverse relation of its to profitability.

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## Appendix 1 Comparison between IDLC, DBH, LankaBangla, FAS (amounts in mTk)

| | IDLC | | | | | DBH | | | | | Lankabangla | | | | | FAS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| year | 2013 | 2012 | 2011 | 2010 | 2009 | 2013 | 2012 | 2011 | 2010 | 2009 | 2013 | 2012 | 2011 | 2010 | 2009 | 2013 | 2012 | 2011 | 2010 | 2009 |
| NetIncome | 811 | 589 | 804 | 805 | 468 | 528 | 404 | 502 | 307 | 233 | 448 | 1235 | 466 | 403 | 350 | 45 | 9 | 61 | 79 | 124 |
| Equity | 4620 | 3809 | 3220 | 2626 | 1850 | 2568 | 2150 | 1750 | 1304 | 1066 | 4525 | 4215 | 1824 | 1223 | 890 | 1577 | 1015 | 843 | 844 | 559 |
| Loans | 38677 | 30938 | 25540 | 21245 | 19539 | 25266 | 24039 | 21668 | 18062 | 13551 | 19258 | 13773 | 11078 | 9480 | 8093 | 3480 | 2185 | 1759 | 1875 | 1052 |
| Deposits | 30287 | 22998 | 17638 | 13001 | 10359 | 19539 | 15751 | 13307 | 12630 | 9845 | 10875 | 7676 | 5309 | 4814 | 4456 | 1251 | 382 | 312 | 516 | 222 |
| Total Assets | 48534 | 35748 | 29518 | 25353 | 21565 | 33004 | 27640 | 24500 | 22048 | 16385 | 26629 | 19501 | 15903 | 13720 | 11325 | 4712 | 2975 | 2621 | 2910 | 1611 |
| Provision for loan/ investment | 145 | 100 | (5) | 119 | 144 | 122 | 104 | 92 | 139 | 45 | 328 | 191 | 82 | 184 | 166 | 71 | 7 | 90 | 122 | 18 |
| Net interest income | 2133 | 1624 | 1467 | 1229 | 942 | 1295 | 982 | 889 | 763 | 561 | 3063 | 2132 | 2358 | 828 | 786 | 170 | 79 | `340 | 166 | 106 |
| Gross non interest income | 1022 | 822 | 672 | 653 | 439 | 284 | 259 | 269 | 246 | 170 | 407 | 373 | 328 | 174 | 131 | 78 | 64 | 11 | 13 | 30 |