

Factors Influencing the Profitability of Conventional Banks of Pakistan

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Abstract

A significant constituent of the micro-prudential analysis is the study of banking sector profitability. Using bank level data this paper analyzes the profitability of commercial banks in Pakistan over the period from 2006 to 2009 using an empirical framework. To account for profit perseverance, this paper has applied multivariate regression analysis by formulating two regression models. The estimation results show that Gearing ratio, NPLs ratio and asset management are found to have significant affect on the profitability of commercial banks in both models. While size of the banks is a significant indicator for profitability where return of assets is used as proxy for measuring bank's profitability and insignificant relation where return on equity is used as proxy to measure the profitability of commercial banks.

Keywords: Profitability Determinants; Profitability Indicators; Commercial banks; Conventional Banks; Pakistan

JEL Classification Codes: E44; F36; G21; G32; E62

1. Introduction

The objective of this paper is to study the bank-specific determinants of conventional banks in Pakistan to highlight and identify the significant factors that are influencing on bank's profitability. These structural factors are vital in reviewing the connection between profitability of banks and fluxes in business cycle. The banking sector plays a crucial role as financial mediators to facilitate the flow of funds from savers to borrowers. The economy of Pakistan falls in developing countries so as the banking system of Pakistan demonstrates a vital role in contributing to national economy and by filling a gap between the savers into productive investments. The financial performance of banks affects the depositors, institutional shareholders, regulators, potential investors and corporate owners.

Sadaqat, Akhtar and Ali (2011) documented the financial market of Pakistan as among the most volatile markets of world, which is packed with anonymity and escapade presentation. Financial sector of Pakistan possess a widespread assortment of financial institutions, which includes: brokerage houses, national savings schemes, stock exchanges, investments banks, micro-finance banks, Islamic banks and commercial banks that are offering a range of products and services. State Bank of Pakistan as being the central bank and controlling authority of banking sector is collecting and circulating financial information. At present, a total of twenty-nine banks operating as commercial banks in Pakistan which include; five fully-functional Islamic banks. Among conventional banks, four banks represent public sector and twenty banks are representing private sector.

The reason to select banking sector of Pakistan can be best justified with the fact that beside the radical changes that were experienced over a period of 63 years, which includes the nationalization, de-nationalization, privatization and the introduction of Islamic banks. An increasing boost can be observed in total assets of banks improved to Rs. 5595 billion in 2008-2009 from Rs. 3003 billion in 2003-2004. Capital for scheduled banks increased to Rs. 341 billion in 2009 which was Rs. 121 billion back in 2006. Reserves for scheduled banks which were Rs. 112 billion in 2006 amounted to Rs. 226 billion in 2009. Moreover huge investments were made by the scheduled banks, which can be observed through the fact that Investment of scheduled banks were increased to Rs. 1359 billion in 2009 from Rs. 866 billion in 2006.

The second section of the study provides the empirical evidence with the reference to previous studies. The third-section defines the research methodology with detail definition of research models, research design, population, sample size, exploratory variables and explanatory variables. The fourth section discusses the empirical findings and the consequences of the results. The last fifth section explains the conclusion of the overall study.

2. Previous Research

There are number of studies which examine the bank-specific factors of profitability and used the similar profitability measures to determine the relationship between dependent and independent variables. The return on assets (ROA) and return on equity (ROE) were used by empirical evidence with similar statistical regression approach to determine the effect of determinants of profitability (Molyneux & Seth, 1998; Naceur & Goaid, 2001; Chirwa, 2003; Tarawneh, 2006; Kosmidou, 2008; Sayilgan & Yildirim, 2009)

Miller and Noulas (1997) observed the factors that affected the profitability of banks in USA for the period of 1985 to 1990 in which the size of the banks was found to be a negatively related with profitability. The negative relationship of the size indicates the diseconomies of scale. Kosmidou (2008) stated the significant relationship fo size and capital adequacy ratio, while the size is positively related with performance measures. Chirwa (2003) examine the negative relationship of capital to assets ratio with return on capital. The relationship of asset utilization ratio and operating efficiency were significant with return on assets (ROA) discus in previous studies (Tarawneh, 2006).

Boudriga, Taktak and Jellouli (2009) statistically studied the cross-countries factors of non-performing loans (NPLs) on risk exposure. The study uses data for a panel of 59 countries over the period 2002-2006 that includes financial, economic, collective banking and legal environment. The pragmatic results points that superior capital adequacy ratio (CAR) appears to lessen the level of problem of non-performing loans. The effective asset utilization ratio was found to have positive and statistically significant relationship with profitability (Chirwa, 2003; Miller & Noulas, 1997).

The asset management and operating efficiency are positively and negatively associated with profitability (Kosmidou, 2008; Ramlall, 2009; Sufian and Habibullah, 2009). The asset management and operating efficiency can be influence the profitability at large scale. Sufian and Habibullah, (2009) stated that the ratio of non-interest income to total assets was used to measure the diversification in asset utilization and business mix and the ratio of non-interest expense to total assets was used to measure the effective utilization of minimum resources to get maximum output in terms of profit.

Ali, Akhtar and Ahmed (2011) reported the significant role of capital adequacy ratio, operating efficiency, asset management and GDP that are influencing the profitability of commercial banks in Pakistan while studying the impact of bank-specific and macro-economic factors on profitability. Akhtar, Ali and Sadaqat (2011) found superior performance in elements of assets and return which established that conventional banks had improved profitability than Islamic banks in Pakistan.

Ali, Akhtar and Sadaqat (2011) reported the financial and non-financial risk perspectives for the commercial banks. The study employed two regression models using data for 4 years i.e. 2006-2009 for 28 banks. Credit risk was used to summarize the results for financial risk and operational risk was used to summarize the results for non-financial risk. Their study concluded the significant affect of size for both models, whereas significant affect for non-performing loans and operating efficiency was found with operational risk and significant affect of gearing ratio and liquid assets for credit risk.

3. Research Methodology

The study examined the bank-specific factors of profitability for conventional banks of Pakistan. The ordinary least square method is embraced for the analysis of the data. Two models have been adopted considering return on assets (ROA) and return on equity (ROE) as dependent variable. Portrayal of dependent and independent variables along with their proxies are reported in Table 3.1.

Table 3.1: Variable, their Proxies and Symbols

Symbols	Variables	Proxies
Y ₁	ROA (Return on Asset)	Net-Operating Income/Total Assets
Y ₂	ROE (Return on Equity)	EACS /Common Stock Equity
Explanatory Variables		
X ₁	Bank's Size	Logarithm of Total Assets
X ₂	Gearing Ratio	Total Debts/Equity
X ₃	NPLs Ratio	Non-Performing Loans/Total Loans
X ₄	Asset management	Operating Income/Total Assets
X ₅	Operating Efficiency	Total Operating Expenses/Total Assets
X ₆	Capital Adequacy	Tier 1 Capital + Tier 2 Capital / Risk Weighted Assets

3.1. Data Collection

Financial data is obtained from the annual reports of the banks for the period of 2006-2009. Data is acquired from their respective websites, from the library of State Bank of Pakistan and from Lahore Stock Exchange. The multi-variant regression model will be used to test the significance of variables on profitability of conventional banks. List of banks included in this study is available in the appendix.

3.2. Profitability Measures

The divergent feature of return of assets (ROA) is its ability for effective and efficient management in utilizing their assets to generate maximum earnings. The return on asset (ROA) is a substantial performance measure for the reason that it is directly related to the profitability of banks (Kosmidou, 2008; Sufian & Habibullah, 2009). The high value of return on assets denotes higher profitability for banks.

Following equation can be derived for multi-variant regression analysis for Model (I).

$$ROA = \alpha + LNTA\beta_1 + GR\beta_2 + NPLs\beta_3 + OE\beta_4 + LA\beta_5 + \epsilon$$

Return on equity (ROE) on the other hand, replicates how meritoriously and successfully the management of the bank is in employing funds of its shareholders. This will be calculated by net profit dividing by common stockholder's equity. Berger (1995); Williams (2003); Naceur and Goaid (2001) used return on equity (ROE) to measure the profitability. Siddiqui (2008) established superior return on equity (ROE) and return on assets (ROA) ratio will valid at enriched aptitudes to transform asset into net earnings leading to improved profitability.

Following equations can be obtained for multi-variant regression analysis for Model (II).

$$ROE = \alpha + LNTA\beta_1 + GR\beta_2 + NPLs\beta_3 + OE\beta_4 + LA\beta_5 + \epsilon$$

3.3. Bank-Specific Factors

The bank size is very important determinant of profitability because it can influence the banks operations internally to cut-off their cost due to economies of scale. The positive relation of size with profitability is due to economies of scale and negative relationship is due to diseconomies of scale (Chirwa, 2003; Naceur & Goaid, 2001; Kosmidou, 2008). The high value of gearing ratio demonstrates higher liquidity risk which might lead to low profitability levels and debt holders will demand more rate of return on further loan financing. The proxy to measure the gearing ratio for conventional banks is total debts to equity. This is a very significant determinant of credit position as discussed by previous study (Barnhill, Papapanagiotou, & Schumacher, 2002). This variable will label what portion of equity and debt the banks are using for financing its assets. Non-Performing loan ratio signifies loans in default. Boudriga, Taktak and Jellouli (2009) reported that the profitability of banks inversely related to the amount of Non-Performing Loans (NPLs). Asset utilization ratio is used as proxy for measuring asset management for conventional banks. This will explain how capable assets are working to create revenue and are calculated by dividing operating income with total asset (Miller & Noulas, 1997; Chirwa, 2003). Operating efficiency will assist to scrutinize how well a bank internally uses its assets and liabilities. This study will use total operating expenses divided by total assets as proxy for gauging operating efficiency (Tarawneh, 2006). Capital adequacy ratio is a measure of a bank's capital. This ratio is engaged to safeguard depositors and endorse the steadiness, consistency and efficiency of banks (Siddiqui, 2008).

4. Empirical Results

4.1. Descriptive and Pearson Correlation Statistics

Descriptive statistics for all variables under study are reported in table 4.1 which shows the values for mean and standard deviation. First two variables are dependent variables while the rest of them are independent variables.

Table 4.1: Descriptive Statistics

Descriptive Statistics		
	Mean	Std. Deviation
Return on Assets (ROA)	0.0006376	0.0453296
Return on Equity (ROE)	0.0431801	0.4170060
Bank's Size	7.9677664	1.0127636
Gearing Ratio	9.6584821	5.9195039
NPLs Ratio	0.068608	0.0611832
Asset management	0.0147120	0.0280775
Operating Efficiency	0.0293370	0.0164531
Capital Adequacy	0.1652204	0.1176653

Table 4.2 reports the correlation matrix for all explanatory variables. The results of Pearson correlation coefficients show that the problem of multicollinearity is absent. The Pearson correlation coefficients matrix shows the positive relation of gearing ratio, asset management, operating efficiency with the size of the bank. While NPLs ratio exhibits negative relation with bank size. NPLs ratio, operating efficiency and capital adequacy reports negative relation with gearing ratio, while asset management exhibits positive relation. Asset management reports negative, while operating efficiency and capital adequacy exhibits positive relation with NPLs ratio. Operating efficiency and capital adequacy shows negative relation with asset management. Finally, Pearson correlation coefficients reports, positive relation of capital adequacy with operating efficiency. However the matrix show that the relation of independent variables is not well-built, so the problem of multicollinearity is absent for this data.

Table 4.2: Pearson Correlation Coefficients

Pearson Correlation Coefficients						
	Bank's Size	Gearing Ratio	NPLs Ratio	Asset Management	Operating Efficiency	Capital Adequacy
Bank's Size	1	0.321**	-0.078	0.411**	0.001	-0.131
Gearing Ratio		1	-0.159	0.007	-0.098	-0.562
NPLs Ratio			1	-0.543**	0.505**	0.187
Asset management				1	-0.545**	-0.208
Operating Efficiency					1	0.269*
Capital Adequacy						1

*Correlation is significant at 0.001 level (Significance value<0.001)

**Correlation is significant at 0.10 level (Significance value<0.10)

4.2. Regression Results

The table 4.3 and table 4.4 represent the regression results of model (A) and model (B) respectively. In model (A) and model (B) the values of R-square are 86% and 75% respectively which signifies the change incur in exploratory variable due to change in explanatory variables. The R-square of model (A) represents the higher explanatory power for the model because model (A) signifies highly correlated value of R-square. The F-statistics represents the overall significance in both models at 0% level of significance. The Durbin-Watson test is applied to measure the autocorrelation, the reported values of Durbin-Watson test indicates that there is the problem of autocorrelation among variables is non-existent.

Table 4.3: Regression Statistics for Model (A)

Dependent Variable: Return on Assets					
Method: Least Squares					
Sample: 2006M01 2009M12					
No. of Observations: 88					
Durbin-Watson Test: Standard Errors & Covariance					
Coefficients-Model A					
	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	.015	.017		.916	.362
Bank's Size	.005	.002	.101	1.848	.068
Gearing Ratio	.000	.000	-.118	-2.034	.045
NPLs Ratio	-.165	.040	-.223	-4.090	.000
Asset management	.723	.109	.448	6.664	.000
Operating Efficiency	-.800	.153	-.290	-5.221	.000
Capital Adequacy	-.107	.021	-.277	-5.132	.000
R-squared	0.857		Mean dependent var.	0.000638	
Adjusted R-squared	0.846		S.D. dependent var.	0.041953	
Sum squared resid.	0.026		F-statistic	80.632	
Durbin-Watson stat.	1.915		Prob (F-statistic)	0.0000	

In model (A), the overall variables show the significant affect on the profitability of the commercial bank. The size of the bank represents the market worthiness of the bank due to which the banks are able to ensure their market share and enjoy large amount of profits. The size of the bank established the positive relationship with profitability and statistically the coefficient have significant affected by the return on assets (ROA) at 10% level of significance. The positive relation of size is in accordance with the literature (Al-Tamimi, 2005; Sufian, 2009). This relationship might be incurred due to cost effective strategies, economies of scale and larger market share. The ratio of debt and equity used to measure the gearing ratio. If the ratio of debt is greater than the equity ratio that means the bank is highly geared and expect to suffer in higher risk. The relationship of the gearing ratio, NPLs ratio and capital adequacy are to be found negative and the coefficients are statistically show the

significant effect on profitability at the level of 0% in all specifications, while the gearing ratio is significant at 5% level of significance. The negative relation of capital adequacy is in accordance with previous studies (Naceur & Goaid, 2002; Hunter & Srinivasan, 1990; Al-Tamimi, 2005). The result of NPLs is in harmony with previous findings as being negatively and significantly related (Sackett & Shaffer, 2006). The lending is the major functions of banking operations; banks face the higher risks in lending operations. The banking system measures its market risk, credit risk, operational risk and liquidity risk with capital adequacy ratio by means of issued capital which supports the banks risky assets. The asset management and operating efficiency recognized the positive and negative relationship respectively, whereas the statistical coefficients are significantly affected by the profitability at the 0% level of significance in all specifications. Chirwa (2003); Miller & Noulas (1997) evidenced the asset management is highly significant impact on profitability. Alexiou and Sofoklis (2009); Sufian and Habibullah (2009); Ramlall (2009) reported the parallel relationship of operating efficiency with the profitability.

Table 4.4: Regression Statistics for Model (B)

Dependent Variable: Return on Equity					
Method: Least Squares					
Sample: 2006M01 2009M12					
No. of Observations: 88					
Durbin-Watson Test: Standard Errors & Covariance					
Coefficients-Model B					
	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	-.035	.205		-.173	.863
Bank's Size	.038	.030	.092	1.262	.211
Gearing Ratio	-.018	.005	-.252	-3.232	.002
NPLs Ratio	-2.01	.498	-.295	-4.031	.000
Asset management	8.811	1.340	.593	6.576	.000
Operating Efficiency	-.723	1.893	-.029	-.382	.703
Capital Adequacy	-.144	.257	-.041	-.559	.577
R-squared	0.861		Mean dependent var.	0.04318	
Adjusted R-squared	0.742		S.D. dependent var.	0.359104d	
Sum squared resid.	3.910		F-statistic	38.740	
Durbin-Watson stat.	1.950		Prob(F-statistic)	0.0000	

In model (B), the relationship of the size of the bank is positive (Al-Tamimi, 2005; Sufian, 2009) and insignificant with return on equity (ROE). The insignificant effect of the size of the bank indicates the diseconomies of scale or might be due to other market factors. The financial tool used to measure the percentage of non-performing loans in banks is NPLs ratio which is a very important performance indicator. The relationship of asset management and NPLs ratio is found to be a positive and negative (Sackett & Shaffer, 2006) respectively, while statistically the coefficients are significant at the level of 0% in all specifications. The operating efficiency and capital adequacy ratio established negative relationship but insignificantly affected by the return on equity (ROE). The relation of operating efficiency and capital adequacy can be supported with previous studies (Alexiou & Sofoklis, 2009; Sufian & Habibullah, 2009; Ramlall, 2009) and (Naceur & Goaid, 2002; Hunter & Srinivasan, 1990; Al-Tamimi, 2005) respectively. The gearing ratio found to be a negative relationship and the statistical coefficient is significant at the level of 5% in all specifications (Barnhill, Papapanagiotou, & Schumacher, 2002).

5. Summary and Concluding Remarks

The emphasis of the study was to determine the effect of bank specific factors of profitability for conventional banks by using the data covered for the period of 2006-2009. The profitability

determinants used to measure the banks performance are return on assets and return on equity. Gearing ratio, NPLs ratio and asset management are found to have significant affect on the profitability of commercial banks in both models. While size of the banks is a significant indicator for profitability where return of assets is used as proxy for measuring bank's profitability and insignificant relation where return on equity is used as proxy to measure the profitability of commercial banks.

The study offers new looming to policy makers, practitioners, and bank managers on the implication of a number of driving factors of the competence of banks that may possibly assist them to extend the effectiveness of the banking system and advance the excellence of services offered.

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Appendix

LIST OF BANKS - Conventional Banks

Sr.	PRIVATE SECTOR	Sr.	PUBLIC SECTOR
1	Allied Bank Limited	1	National Bank of Pakistan
2	Summit Bank Limited ¹	2	The Bank of Punjab
3	Askari Bank Limited		
4	Atlas Bank Limited		
5	Bank Al-Falah Limited		
6	Bank Al-Habib Limited		
7	Faysal Bank Limited		
8	Habib Bank Limited		
9	Habib Metropolitan Bank Limited		
10	JS Bank Limited		
11	KASB Bank Limited		
12	MCB Bank Limited		
13	Mybank Limited		
14	NIB Bank Limited		
15	SAMBA Bank Limited ²		
16	SILKBANK Limited		
17	Soneri Bank Limited		
18	Standard Chartered Bank (Pakistan) Limited		
19	The Royal Bank of Scotland Limited		
20	United Bank Limited		

¹ Summit bank limited, formerly was Arif-Habib Bank. Data for the year 2007 to 2009 was taken from the annual reports from of Summit bank limited and data for the year 2006 was taken from the annual report of ArifHabib bank.

² SAMBA bank Limited, formerly was Crescent Commercial Bank. Date for year 2009 and 2009 was taken from the annual reports of SAMBA bank and for year 2007 and 2006, data was collected from the annual reports of Crescent Commercial Bank