Bank-Specific and Macroeconomic Indicators of Profitability - Empirical Evidence from the Commercial Banks of Pakistan

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Abstract

Purpose - *The purpose of the study is to examine the profitability indicators of public and private commercial banks of Pakistan explored in 2006-2009.*
Design/methodology/approach *- The return on assets (ROA) and return on equity (ROE) are used as profitability measures to determine the affect of bank-specific and macroeconomic indicators on profitability. The descriptive, correlation and regression analysis results are derived with the help of SPSS.*
Findings *- The efficient asset management and economic growth establish positive and significant relation with profitability in both models (measured by ROA & ROE). The high credit risk and capitalization lead to lower profitability measured by return on assets (ROA). The operating efficiency tends to exhibit the higher profitability level as measured by return on equity.*
Research limitations/implications *- The technological changes over the time and changes in productivity of macroeconomic and bank specific dimensions could yet be another extension to study. The study is beneficial to banking sector to overcome the ambiguities.*
Originality/value *- The main objective of the study is providing empirical evidence on indicators of profitability in case of Commercial Banks of Pakistan to fill a demanding gap in the literature.*

Keywords: Profitability, Efficiency, Effectiveness, Indicators, Commercial Banking, Pakistan

1.0 Introduction

The association of profitability of banking sector and business cycle is important in order to appraise the soundness and steadiness of the banking sector (Albertazzi & Gambacorta, 2009). The study on the determinants of profitability for the banking sector of a country is emphasized by virtue of the fact that the majority of countries have a financial system that is based on banking system.The significance of profitability of the banks can be valued at both the micro and macro stages of the economy. It is of no doubt that as share of banking sector in the financial system boosts, the function of the banking sector in microeconomic & macroeconomic steadiness, and economic growth also turns out to be more important. On the micro level, profit is the indispensable condition of a cutthroat banking institution and the resource of funds.

It is not purely a result, but also inevitability for thriving banking in a phase of mounting competition on financial markets. On the macro level, a profitable and lucrative banking sector is better capable to endure negative distress and adds to the strength of the economic system (Aburime, 2009). A profitable and sound banking sector is in a superior position to endure negative upsets and add to the permanence of the financial system (Athanasoglou, Brissimis & Delis, 2008). The observed literature on the determinants of bank profitability is wide-ranging.Conversely little is acknowledged with reference to the determinants of profitability on banking system of Pakistan. The purpose of this study is to recognize the vital determinants that affect the profitability of the public and private commercial banks over the period 2006 – 2009.

1.1 Recent Developments in the Banking Sector of Pakistan

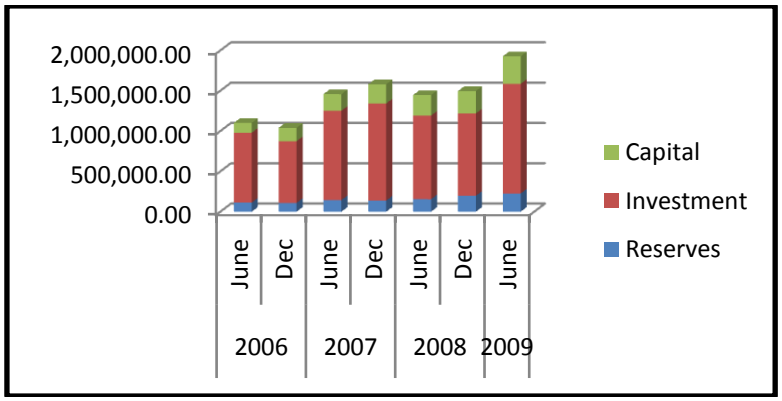
Banking sector plays an essential role in the economic and financial growth of a country. Radical changes have been observed in banking sector of Pakistan over a phase of 62 years. Originally it undergoes lack of capital and indecision due to established political and socioeconomic calamity.

Ensuing amendments were made to amount the power and function of SBP from side to side State Bank of Pakistan Act 1956 which motivated the private sector to set up financial institutions and banks. In addition privatization developments of banking sector which begin in 1992 provoked local investors and motivated foreign banks (Ahmad, Malik, & Humayoun, 2010). Meanwhile The State Bank of Pakistan (SBP) was alienated into three parts in 2001:

1. The State Bank of Pakistan (SBP), as central bank;
2. SBP Banking Services Corporation;
3. National Institute of Banking and Finance (NIBAF).

Likewise figure 1.2 shows the boost in capital, reserves and investment of banks from 2006 to 2009. Investment of scheduled banks was boosted to Rs. 1359 billion in 2009 which was Rs. 866 billion in 2006. Likewise capital of scheduled banks increased to Rs. 341 billion in 2009 which was Rs. 121 billion in 2006. Reserves were amounted to Rs. 226 billion in 2009 which was Rs. 112 billion in 2006.

Figure: 1– Reserves, Investment and Capital of Scheduled Banks



Source: Statistical Bulletin, State Bank of Pakistan (December 2009)

At present 24 conventional and 5 Islamic banks are participating in extremely competitive atmosphere[1].

This study unfolds as follows. The subsequent section will present an epigrammatic impression of the associated studies in the literature. The literature will be chased by a section that outlines the methodology. Section 4presents the observed empirical findings. As a final point Section 5wraps up with conclusion and presents avenues for potential research.

2.0 Literature

Pilloff and Rhoades (2002) discus the positive relationship of the size with bank's profitability. The bank-size also affected by the operating effieciency.Molyneux and Seth (1998); Ramlall (2009); Sufian(2009) found the positive relationship of banks size and examine the bank size depends the economies of scale because the larger banks were more profitable than smaller banks. Whereas the emperical evidence also discuss the negative reltionship of bank size with profitability (Koasmidou, 2008; Spathis, Koasmidou & Doumpos, 2002).Ramlall (2009) stated the poitive realtionship of operating effiecieny and negative relationship of credit risk. The high debtor turnover period and high real interest rates for banks aggravate the bansks to liquidate (Sayilgan & Yildirim, 2009). Kosmidou (2008) discuss the positive relationship of operating efficiency because if the operating efficiency is high then it gives the assurance of increment in profitability. Naceur and Goaied (2002) stated that the capital maintence problem reflects the negative relation with profitability. The importance of capital benefical for the portfolio composition and size of the bank.The capital highly signifcantly effect the profitablity and empower the banks to build a stong position in market (Athanasoglou, Brissimis & Delis, 2008).The ratio to operating income to total assets shows the efficient asset exploitation and highly significant impact on profitability with positive relationship (Miller&Noulas,1997;Sufian &Habibullah, 2009). Kunt and Detragiache (1998) stated that the weak macroeconomic enviorment became a reason of low economic growth and high inflation which show the economic immovability and diseconomies of scale.The economic growth and consumer price inflation positively related to profitability it also assure the emperical evidence (Alexiou & Sofoklis,2009).

[1]State Bank of Pakistan: Retrieved November 13, 2010, from http://www.sbp.org.pk/f_links/index.asp

3.0 Methodology

The study employ the performance indicator of 22 public and private sector commercial banks of Pakistan covered the period of 2006-2009. The list of banks included in this study is provided in the appendix I. The balance sheet data is collected from Statistical Bulletin of State Bank of Pakistan 2009, websites of the banks and Lahore Stock Exchange. . This study will use SPSS for data manipulation and inferences. Regression analysis is used to derive the relationship and significant effect of performance indicators on profitability. The Pearson correlation and Durbin Watson tests applied to deal with the problems of multicollinearity and autocorrelation respectively. The descriptive statistics applies to find the mean and standard deviation of the variables.

Profitability= β_0+LNTAβ_1+OE β_2+ CAPβ_3+ CRβ_4+AM β_5+PCβ_6+GDP β_7+CPIβ_8+€

The above model signifies the profitability equation. It defines the relationship of profitability with bank-specific (Size, Operating efficiency, Capital, Credit Risk, Asset Management, and Portfolio Composition) and macroeconomic variables (Economic Growth and Consumer Inflation Price). The beta values (β_1,β_2,β_3….β_8) represents the proportionate change in dependent variable due to independent variables.$\beta_0$represents the value of x-intercept which is constant and € represents the error term. Further it is clearly define in table 1.1 which imply the abbreviation, proxies and expected relationship of the variables.

3.1 Performance measure:

The empirical evidence supports that the two variables which were used to measure the profitability i.e. return on assets (ROA) and Return on equity (ROE) (Ramlall, 2009; Koasmidou, 2008; Sufian & Habibullah, 2009; Sayilgan & Yildirim, 2009). Both profitability measures reflects to breeds of earing form optimum utilization of resources.

3.2 Internal Indicators:

The bank-specific indicators have more ability to influence the profitability of banks. The bank size, operating efficiency, capital, credit risk, portfolio composition and asset management all these variables considered independent which can influence profitability internally. These factors are controllable and the empirical evidence discusses all these variables and their relationship with profitability and the proportionate change occurs due to all these variables (Sufian &Habibullah, 2009; Ramlall, 2009; Sayilgan & Yildirim, 2009). The size of the banks is relatively more important variables because the larger banks pay less due to the allocation of their fixed cost and it also helpful for banks to capture a large market share and high profitability (Koasmidou, 2008).

3.3 External Indicators:

The macroeconomic variables can externally influence the profitability of the banks. These indicators cannot control by the banks because their impact appears at macro level. The macroeconomic variables discuss in this study are economic growth and consumer price inflation. The both variables affect the profitability of banks according to the economic conditions of the any state and positively the affect the profitability (Alexiou & Sofoklis, 2009).

4.0 Findings

4.1 Descriptive and Pearson Correlations Statistics

Table 2 & Table 3 (See Appendix I)

The descriptive statistics shows the values for minimum, maximum, mean and standard deviation. The correlation matrix that is reported in table: 3, shows that in broad-spectrum the correlation among the variables is not well-built, signifying that the problem of multicollinearity is missing or nonexistent[2].

4.2 Regression Results for Model I

Table 5 (See Appendix I)

For model I, capital, credit risk, asset management, economic growth and consumer inflation price found to be significantly affecting the profitability of commercial banks measured by return on assets (ROA).The bank specific variables (CAP, CR & AM) are found to be significantly affecting at 1% level of significance, whereas the relation of macroeconomic variables (GDP & CPI) is significant at 5% level of significance. The positive relation of GDP with profitability in this study is in accordance with the results of (Alexiou & Sofoklis, 2009). Whereas the relation of consumer price index (CPI) is in agreement with the findings of (Sayilgan & Yildirim, 2009). The variables negatively associated with profitability are capital, credit risk and consumer price inflation. The negative and significant association of credit risk with profitability is supported and in accordance with (Ramlall, 2009; Vong, 2005;Miller &Noulas, 1997; Sufian & Habibullah, 2009).

[2]Kennedy (2008) stated that the problem of multicollinearity is present only when the correlation is over 0.80, which is not the scenario in these results.

Whereas the negative association of capital is in agreement with (Al-Tamimi, 2005; Naceur & Goaied, 2002) as their study stated that the problem of maintaining capital reveals the negative relation with profitability.The asset management and economic growth established to be positively related to return on assets. The asset management is the highly effective bank specific indicator in case of banks profitability for model I and its relation is in line with (Sufian & Habibullah, 2009; Miller & Noulas, 1997). The major portion of banks operations are involves in borrowing and lending activities due to banks suffer in threats high credit risk and they create a loan loss provisions to mitigate the risk. This risk adverse policy of banks reflects towards low profitability, because the loan loss provisions are created from retained earnings of banks on annual basis. The bank size plays an important role to maintain the position of a bank in the market nevertheless the relation of bank size is found to be insignificant but positive with profitability. The positive relation of size with profitability is in accordance with (Hauner, 2005; Akhtar, Ali, &Sadaqat, 2011).The portfolio composition and operating efficiency are found to be positively related to profitability but the relation is insignificant. The positive relation of portfolio composition with profitability is in harmony with the findings of (Naceur&Goaied, 2001; Al-Tamimi, 2005)

4.3 Regression Results for Model II

Table 6 (See Appendix I)

In model II, where profitability is measure by return on equity (ROE); operating efficiency, asset management and economic growth established to have significant affect the profitability. Whereas the operating efficiency and economic growth significant at 5% level of significance and the asset management significant at 1% level of significance. The significant relation of operating efficiency with profitability is in accordance with the findings of previous studies (Alexiou & Sofoklis, 2009; Sufian & Habibullah, 2009). Positive relation of economic growth (GDP) is in line with (Alexiou & Sofoklis, 2009). Likewise the significant relation of asset management is in agreement with (Miller &Noulas, 1997; Sufian & Habibullah, 2009). The results show insignificant relation of capital with profitability, as suggested by (Ramlall, 2009). In addition findings of model II shows negative and insignificant relation of credit risk with profitability, this result is in harmony with previous studies (Ramlall, 2009; Vong, 2005; Miller &Noulas, 1997; Sufian &Habibullah, 2009). Size is found to be an insignificant relation but the relation is negatively related to profitability. This negative relation of size with profitability (measured by ROE) is in accordance with (Spathis et al., 2002; Kosmidou, 2008).The asset management and economic growth are found to be positively related to return on equity, while operating efficiency established to have a negative relationship with profitability. Insignificant relation of portfolio composition with profitability is found, which is in accordance with (Naceur & Goaied, 2001; Al-Tamimi, 2005). Summary of statistically significant variables are reported in table 4.

5.0 Conclusion

The topical financial crunch, tagged as the nastiest crisis ever since the Great Depression, has emphasized the fact that a profitable and lucrative banking sector is best capable to soak up negative distress and adds to the steadiness of the financial system. In that esteem, the study endeavors to shed light on the indicators of profitability for the banking system of Pakistan by taking into consideration bank-specific and macroeconomic factors. This study reveals an efficient image of the profitability on banking sector of Pakistan for the period 2006-2009.On the micro independent variables front, profitability seems to have been positively affected by size, operating efficiency, portfolio composition, asset management and negatively by capital and credit risk in case profitability is measured by return on assets (ROA).In case profitability is measured by return on equity (ROE) profitability seems to have positively affected by capital, portfolio composition and asset management and negatively by size, operating efficiency and credit risk. On the macroeconomic variables, GDP is found to having positive affect on profitability (as measured by ROA & ROE).

This study facilitates the academician, scholars and bankers to have a portrait about banking developments in managing profitability as the journey provides the study of commercial banking to improve their consideration.

Future implications:

The results of this study suggest productive area of supporting research and include:

1. One step might examine the realistic results in connected financial and non-financial sectors.
2. Future longitudinal research can be done to more successfully investigate the influence of significant variables.
3. An added route would be the addition of other pragmatic and non-pragmatic methods of research on the banking sector, as this will unfold added aspects of profitability.

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Appendix I
List of Commercial Banks of Pakistan included in this study[3]

LIST OF BANKS					
	Conventional Banks				ISLAMIC BANKS
Sr.	PRIVATE SECTOR	Sr.	PUBLIC SECTOR	Sr.	
1	Allied Bank Limited	1	National Bank of Pakistan	1	BankIslami Pakistan Limited
2	Summit Bank Limited[4]	2	The Bank of Punjab	2	Dawood Islamic Bank Limited
3	Askari Bank Limited			3	Dubai Islamic Bank Pakistan Limited
4	Atlas Bank Limited			4	Al-Baraka Bank (Pakistan) Limited
5	Bank Al-Falah Limited			5	Meezan Bank Limited
6	Bank Al-Habib Limited			6	Emirates Islamic Bank
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[5]				
16	SILKBANK Limited				
17	Soneri Bank Limited				
18	Standard Chartered Bank (Pakistan) Limited				
19	The Royal Bank of Scotland Limited				
20	United Bank Limited				

[3] State Bank of Pakistan: Retrieved November 13, 2010, from http://www.sbp.org.pk/f_links/index.asp
[4] Summit bank limited, formerly was ArifHabib 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.
[5] 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

Table 1: Variables with their proxies and abbreviations:

Symbol	Variables	Proxies	Expected Relation (+/-)
β_0	Value of the Intercept		
ROA	ROA (Return on Asset)	Net-Operating Income/Total Assets	
ROE	ROE (Return on Equity)	Earnings Available for common stockholders/Common Stock Equity	
Banks Specific Factors:			
LNTA	Size	Logarithm of Total Assets (LTA)	+/-
OE	Operating Efficiency	Total Operating Expenses/Net-Interest Income (OE)	-
CAP	Capital	Capital Adequacy Ratio (CAP)	+/-
CR	Credit Risk	Loan Loss Provision/Total Loan (CR)	-
AM	Asset Management	Operating Income/Total Assets(AM)	+
PC	Portfolio Composition	Total Deposits/Total Assets(PC)	+
Macroeconomic Factors:			
GDP	Economic Growth/ GDP	Annual Growth Rate (GDP)	+
CPI	Consumer price inflation	Consumer Price Inflation Rate (CPI)	+/-
€	Error Term		

Table 2: Descriptive Statistics

Descriptive Statistics				
	Minimum	Maximum	Mean	Std. Deviation
Return on Asset (ROA)	-0.2024	0.0681	0.00063	0.0453
Return on Equity(ROE)	-1.8903	0.5664	0.0431	0.4170
Size	0	8.9758	7.97	1.0127
Operating Efficiency	-10.6041	46.0742	1.58	5.4134
Capital	0	0.6543	0.1652	0.1176
Credit Risk	0	1.5399	0.7018	0.2917
Portfolio Composition	0	0.8688	0.7191	0.1183
Asset Management	-0.0872	0.0599	0.0147	0.0280
GDP	0.041	0.09	0.0642	0.0178

Table 3: Pearson Correlation Coefficients

Pearson Correlation Coefficients								
	LNTA	OE	CAP	CR	AM	PC	GDP	CPI
LNTA	1	-0.036	-0.131	0.309	0.745	0.411	-0.204	0.089
OE		1	-0.087	-0.055	-0.13	-0.185	-0.196	0.06
CAP			1	0.195	-0.357	-0.208	0.002	-0.047
CR				1	0.231	-0.033	-0.082	-0.015
AM					1	0.206	-0.119	0.077
PC						1	0.068	0.000
GDP							1	0.004
CPI								1

Table 4: Summary of Statistically Significance Variables

Significance Level	Sign of Coefficients
Return on Assets (ROA)	
1%	CAP (-), CR (-), AM (+)
5%	GDP (+), CPI (-)
Return on Equity (ROE)	
1%	OE (-), AM (+)
5%	GDP (+)

Table 5: Regression Statistics[6]

Dependent Variable: Return on Assets
Method: Least Squares
Sample: 2006M01 2009M12
No. of Observations: 88
Durbin-Watson Test: Standard Errors & Covariance

Coefficients-Model I

	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	**Std. Error**	**Beta**		
Constant	-.014	.023		-.621	.536
LTA	.000	.004	.004	.051	.959
OE	.001	.000	.067	1.353	.180
CAP	-.080	.022	-.207	-3.694	.000
CR	-.034	.008	-.217	-4.109	.000
PC	.031	.031	.082	1.017	.312
AM	1.228	.092	.761	13.281	.000
GDP	.302	.128	.119	2.360	.021
CPI	-.083	.032	-.125	-2.585	.012

R-squared	0.822	**Mean dependent var**	0.000638
Adjusted R-squared	0.804	**S.D. dependent var**	0.041095
Sum squared resid	0.032	**F-statistic**	45.577
Durbin-Watson stat	1.593	**Prob(F-statistic)**	0.0000

Table 6: Regression Statistics[3]

Dependent Variable: Return on Equity
Method: Least Squares
Sample: 2006M01 2009M12
No. of Observations: 88
Durbin-Watson Test: Standard Errors & Covariance

Coefficients-Model II

	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	**Std. Error**	**Beta**		
Constant	-.305	.256		-1.188	.238
LTA	-.033	.043	-.081	-.777	.439
OE	-.016	.005	-.204	-3.392	.001
CAP	.287	.240	.081	1.196	.235
CR	-.040	.092	-.028	-.439	.662
PC	.354	.345	.100	1.027	.308
AM	11.813	1.030	.795	11.469	.000
GDP	2.939	1.423	.126	2.066	.042
CPI	.007	.356	.001	.021	.983

R-squared	0.739	**Mean dependent var**	0.04318
Adjusted R-squared	0.713	**S.D. dependent var**	0.35847
Sum squared resid	3.949	**F-statistic**	27.958
Durbin-Watson stat	1.906	**Prob(F-statistic)**	0.0000

[6]The value of Durbin Watson in both models (d= 1.593 & d=1.90) indicates that the absence of autocorrelation. The values of F-statistic (F=45.577 & F= 27.958) show that the overall model fitness is good which represent its significance at 0% level of significance.