DETERMINANTS OF PROFITABILITY IN PRIVATE COMMERCIAL BANKS OF PAKISTAN

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Abstract

This study examines the profitability of the private commercial banks in Pakistan for the period of 2004-2013, utilizing the panel data analysis technique. The independent variables include microeconomic as well as macroeconomic variables. Among the performance measures, the asset quality and size indicated negative relationship with profitability of private commercial banks. The relationship between liquidity and efficiency with profitability was found to be positive. All the micro economic indicators including inflation, interest rate, and gross domestic product proved positively related with profitability.

Keywords: Banks, Profitability, Micro Economic Factors, Macro-Economic Factors.

JEL Classification: G210

Introduction

Financial System of a country serves as a backbone of an economy which facilitates all the financial institutions. These institutions play the role of essential components of the financial system and ensure its stability (Ahmad, Raza, Amjad, & Akram, 2011). Commercial banks are the major constituents of this system and have made a remarkable contribution in the economic growth of the country.

At present, thirty eight commercial banks are operational in Pakistan. These banks, as per State Bank of Pakistan, are divided among Public (5), Islamic (5), Foreign (6), Specialized (5) and Private (17). The performance of the banking sector can be analyzed at a glance through the following table:

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Table 1
(In millions of Pak Rupees)

Items	2009	2010	2011	2012	2013
Total equity	582.6	608.9	770.7	832.0	878.0
Total liabilities	5,864.1	6,487.1	7,498.0	9,001.0	9,701.2
Total assets	6,530.7	7,184.9	8,299.2	9,905.2	10,678.1
ROA (Public Sector Banks)	0.56%	1.68%	1.27%	1.05%	0.46%
ROA (Private Sector Banks)	0.82%	0.85%	1.42%	1.30%	1.23%

The adverse economic conditions compromised the loan repayment capacity of the domestic industries leading to an increase in the banks' nonperforming loans. The public sector borrowed heavily to meet the fiscal deficit leaving less money with the commercial banks to give loans to the private sector which led to decrease in investments in Pakistan. Thus, ever since 2008 due to internal and external debt situation Pakistan's banking industry has been facing numerous challenges due to which it had to narrow down its opportunities and choose government borrowing over banking assets.

A lot of foreign empirical researches are available examining the factors which effect commercial banks' profitability but evidence in Pakistan is inadequate. Researches which have been conducted so far either discuss the macroeconomic determinants which affect profitability or are only limited to the microeconomic variables. Thus, this research will fill the existing gap in research by taking into consideration both the micro and macro determinants which has an impact on commercial banks' profitability in Pakistan.

Literature Review

A stable financial system is profoundly dependent upon profitability of the banking sector (Hasan, Shaari, Palanimally & Mohamed, 2013). Factors affecting the profitability of an organization can be external as well as internal. Internal company factors are termed as micro economic factors while external economic factors are termed as macro economic factors.

A number of researchers have studied the determinants of profitability. Significant

researches are discussed below:

Kunt and Huizinga (1998) examined the bank and country factors impacting the profitability of the banks of eighty countries for the period of 1988-1995. The research took net interest margin and earnings before tax as dependent variables. Bank variables, country variables and dummy for country were taken as independent variables. The study concluded that capitalization and profitability have positive relationship while reserves and profitability have negative relationship due to inflationary pressures. Foreign banks in developing countries are more profitable than domestic banks while reverse is true in developed countries.

Khan et al. (2011), investigated the bank specific determinants of profitability for the period 2000 to 2010. The research included sixteen banks. The study used net profitability as a measure of profitability and utilizes deposit to asset ratio, loans to assets ratio, loan growth, non-performing loans, return on assets, insider trading, tax paid on net income, operating expenses, non-interest income and net interest margin as independent variables. Variables deposit to loan ratio, deposit to asset ratio, loan to asset ratio, loan growth, net interest margin and return on assets depict positive and significant relationship with bank profitability. Tax and overhead expenses have negative but significant relationship with the bank profitability depicting that the increase in both the expenses leads to decline in bank's profitability. Equity to asset ratio, insider trading and non-interest income depicts insignificant relationship with net profit.

Jamal and Hamidi (2012) studied the macroeconomic determinants of profitability of Malaysian banks by utilizing panel data for the period of 2004-2011. The study investigates sixteen banks including eight domestic and eight foreign banks. Dependent variable used in the research was return on asset while independent variables consisted of real gross domestic growth rate, lending rate, inflation and stock market development. The research developed three models on which regression analysis was performed. The first model has all the sixteen banks while the second model only had domestic banks and the third model only had foreign banks. Relationship of inflation with return on asset in all the three models was positive and significant. Stock market development in all the three models was significant but negative. Lending rate in the first and third models enjoyed positive and significant relationship with profitability but depicted a negative and insignificant relationship in the second model. Relationship of real gross domestic product with profitability under all models is positive but the relationship is insignificant in foreign banks while for rest of the banks the it is significant for both the models.

According to the studies of Kanwal and Nadeem (2013) the effect of macroeconomic determinants on the commercial banks' productivity of commercial banks those operating in Pakistan.

The research studied the secondary panel data for the time period of 2001-2011 to investigate the impact of inflation, real gross domestic product and real interest rates on profitability.

The research utilizes three measures of profitability, namely, return on asset, return on equity and equity multiplier to run three regression models. The study includes eighteen banks. The first model uses return on asset as dependent variable. Inflation enjoys negative but significant relationship with return on asset while gross domestic product and real interest enjoy positive but insignificant relationship with return on asset. The second model which employs return on equity as profitability measure shows negative relationship of both inflation and gross domestic product but inflation in this model has a significant relationship while gross domestic product has insignificant relationship. The relationship of real interest with return on equity is positive and significant. The third model which employs equity multiplier as the measure of profitability shows negative relationship of inflation and real gross domestic product with equity multiplier and like return on equity, inflation enjoys significant relationship whereas gross domestic product enjoys insignificant relationship.

Obamuyi (2013) investigated the micro and macro factors which effect profitability of Nigerian commercial banks utilizing panel secondary data for the period 2006-2012. Twenty commercial banks were included in the study. Return on assets was taken as the dependent variable while independent variables consisted of micro as well as macro indicators. Micro indicators used in the research were; capital, size and expense management while macro indicators consisted of interest rate and real gross domestic product. The study utilized both descriptive, correlation and fixed effects regression model. The relationship between capital, real interest and gross domestic product is positive and significant while relationship between bank size and expense management is negative and significant.

Dawood (2014) evaluated the profitability determinants of twenty three commercial banks operating in Pakistan for the period 2009-2012. The dependent variable used in this research for profitability on return on assets while variables that were took as independent consists of liquidity, cost efficiency, deposits, capital adequacy, and size of the bank. The methodology adopted by the research includes logarithm techniques and descriptive, regression, correlation analysis. The panel data used in the research utilized data of twenty three commercial banks including four public commercial banks, four Islamic banks, two foreign banks and thirteen private banks. Deposits enjoy weak negative relationship with return on assets. The regression analysis indicates negative but significant relationship between cost efficiency and liquidity with return on assets. Deposits and capital adequacy both enjoy positive relationship with return on assets, however deposits have insignificant relationship while capital adequacy has significant relationship. Size of the bank shows insignificant relationship but positive relationship with return on assets.

Some other related researches are of Khrawish (2011) who examined the macroeconomic factors affecting the listed Jordanian banks and found that there is a negative impact of GDP and inflation on ROA and ROE. Alper and Anbar (2011) witnessed that the GDP growth, real interest rate and inflation rate least affect banks' assets and equity returns have significant impact on Turkish banks. Sharma and Mani (2012) reported in their research that GDP and inflation have insignificant

effect on ROA of commercial banks of India during 2006-11.

Summary of literature review is given in below table:

Table 2

GDP	+/-
Inflation	+/-
Interest	+/-
Capital Adequacy	+/-
Asset Quality	-
Operation Efficiency	+/-
Liquidity	+/-
Total Debt to Total Assets	+/-
Size	+/-

Research Hypothesis

The following eight hypotheses are used for this study:
H1: Capital Adequacy Ratio has a positive relationship with profitability.
H2: Asset Quality has a negative relationship with profitability.
H3: Efficiency has a positive relationship with profitability.
H4: Liquidity has a positive relationship with profitability.
H5: Growth in bank size has a negative relationship with profitability.
H6: Interest Rate has a positive relationship with profitability.
H7: Inflation has a positive relationship with profitability.
H8: Growth in gross domestic product has a negative relationship with profitability.

Research Methodology

Panel data of private banks have been used to investigate the determinants of profitability and impact of micro and macro-economic factors on profitability. The research applied descriptive along with regression techniques.

After literature it is proved that macro and micro economic factors effect profitability. Thus the research includes both elements. Micro economic factors included in this research are capital, size, liquidity, asset quality and efficiency while macro-economic variables included in this research are gross domestic product, inflation and interest rates.

The model included only private commercial banks operating in Pakistan. The paper uses descriptive analysis along with pooled ordinary least square, fixed effect and random effect panel techniques. Significance of F-test is investigated in order to confirm the result selection of pooled OLS and fixed effect model. LM Test is used in selecting between the results of pooled regression and random effect. Insignificance of chi square indicates that result of random effect is more reliable. To assess the reliability of fixed effect and random effect model Hausmann test is utilized. Ion this method significance of chi square determines which model offers more reliable results.

All private banks operating since 2001 have been included in the research, therefore out of seventeen banks, thirteen private banks have been included in the research for the period of 2004-2013. Data for profitability is obtained from published in bank's annual reports of financial statements. Data related to gross domestic product, inflation and interest rate is taken from World Bank report while banks internal data is taken from annual published and audited reports. The sample taken is from 2004 to 2013.

Definitions of Variables:
Return on Asset: It is a financial ratio which assesses the earning capability if assets and is considered as the best gauge of bank's profitability.
Real Interest Rate: It is defined as price of borrowed money adjusted to inflation.
Gross Domestic Product: It is the monetary value of goods and services produced in an economy.
Consumer Price Index: It is a measure of inflation which consists of prices of fixed goods and services monitored periodically.
Capital Adequacy: It is the measure to assess the revenues generated through equity and is obtained by dividing revenue with equity.
Asset Quality: It is calculated by dividing total loan loss provision with total loans.
Operational Efficiency: It is calculated by dividing operating income with net income.
Liquidity: It is measured by dividing bank net loans to total assets.
Size: Size of the bank is measured as percentage change of the assets.

Results

Stata was used to analyze the data at significance level of 0.05.

Descriptive Statistics

Descriptive statistics of micro economic factors for private banks along with profitability for the period of ten years is presented in Table 3.

Descriptive information of macroeconomic indicators including gross domestic product, real interest rate & consumer price index is shown in Table 2.

Table 3
Descriptive Statistics of Micro Economic Indicators
Observations: Overall = 130
Within = 10

	Capital	Size	Asset Quality	Liquidity	Efficiency	Profitability
Overall						
Average	.08	.20	.11	.50	1.33	.01
Max	.33	1.53	.63	.65	21.42	.04
Min	.00	-.22	.00	.23	-112.46	-.08
Std. Deviation	.05	.21	.10	.10	11.02	.02
Within						
Max	.17	1.50	.46	.64	19.55	.05
Min	.01	-.28	-.06	.32	-103.75	-.05
Std. Deviation	.02	.21	.07	.08	10.59	.01

Table 4
Macro-Economic Indicators' Descriptive Statistics
GDP=Gross Domestic Product
Int. =Interest Rate
Inf. =Inflation
Observations = 10

	GDP	Int.	Inf.
Average	.05	.01	.10
Max	.09	.29	.17
Min	.00	-.03	.05
Std. Deviation	.02	.03	.03

Table 5
Regression Results

	Pooled Regression				Fixed Effect				Random Effect			
	Adj. R square 0.61 F test 26.1				R square Within 0.50 Overall 0.49 F test 318.48				R square Within 0.48 Overall 0.35			
Independent Variables	Cof.	Std. Err.	t	P>t	Cof.	Std. Err.	T	P>t	Cof.	Std. Err.	z	P>z
Capital	0.00	0.03	0.02	0.02	0.12	0.10	1.14	0.28	0.03	0.04	0.76	0.45
Asset quality	-0.18	0.01	-12.64	0.00	-0.13	0.03	-4.59	0.00	-0.15	0.01	-10.22	0.00
Efficiency	0.00	0.00	1.09	0.25	0.00	0.00	1.21	0.25	0.00	0.00	0.79	0.43
Liquidity	-0.00	0.01	-0.10	0.58	0.00	0.01	0.28	0.79	-0.00	0.01	-0.22	0.83
Size	-0.01	0.01	-1.38	0.13	-0.00	0.01	-0.70	0.47	-0.01	0.01	-0.94	0.35
Interest Rate	0.04	0.05	0.88	0.18	0.06	0.04	1.58	0.14	0.06	0.04	1.48	0.14
Inflation	0.03	0.06	0.41	0.42	0.04	0.05	0.69	0.51	0.04	0.05	0.75	0.46
GDP	-0.01	0.08	-0.07	0.60	0.03	0.08	0.41	0.69	0.02	0.07	0.30	0.76
_cons	0.02	0.01	1.36	0.18	0.01	0.01	0.28	0.79	0.02	0.01	1.51	0.13

R square indicated the explanatory power of the model ranges between 49.2% in fixed effect, 60.8% in pooled effect and 62.5% in random effect. Since F statistics is more than 4, therefore it is proved that the model is satisfactory.

Regarding the significance of individual variables, only asset quality is significant at 1% while remaining variables are insignificant. Assets quality and size enjoy negative relationship with profitability while all the remaining variables have positive relationship with profitability. Relationship of GDP with profitability is also negative in pooled regression while liquidity has negative relation with profitability in pooled as well as random effect.

Technique Determination for Mode

1.F-test

To check if results of pooled regression is more reliable than fixed effect, F test is used. Significance of F-test probability proves that Fixed Effect results are more reliable than pooled regression results.

2.Breusch and Pagan Lagrangian multiplier test

	Var	**sd=sqrt(Var)**
profita~y	0.00048	0.0219396
E	0.00011	0.0106268
U	5.3E-05	0.0072742

chi2(8)	61.51
Prob>chi2	0.00

To check if results of pooled regression is more reliable than random effect, Breusch Pagan is used. Chi Square results exhibited that irrelevance of probability with the objective that random effect regress results are much valid and having basic reliability instead of pooled regress.

3.Fixed Effect or Random Effect: Hausmann Test.

	Co Efficient			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe	Re	diff	S.E.
Capital	0.11702	0.0271982	0.0898239	0.03802
Asset Quality	-0.13047	-0.152451	0.0219802	0.00684
Efficiency	6.6E-05	0.0000732	-7.67E-06	.
Liquidity	0.00269	-0.0030173	0.0057079	.
Size	-0.00382	-0.0046804	0.0008586	.
Interest Rate	0.06343	0.0611239	0.0023109	.
Inflation	0.03684	0.03793	-0.0010918	.
GDP	0.03324	0.0197067	0.0135328	.

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chi2(8)	7.97
Prob>chi2	0.4360

To check, if results of pooled regression is more reliable than random effect, Breush Pagan is used. -Since chi square is not significant, it is inferred that random effect regression results are more consistent and reliable than random effect regression results.

Discussion and Conclusion

The relationship of capital adequacy and return is positive. Arogundade (1999) described capital as the stake of the owner in the business and further declares that as the stake of the owner increases so does his commitment to the business. Banks with high level of capital offer depositors safety from liquidity crunch and bankruptcy. Due to the low perceived risk, the depositor requires lesser deposit rate as lower the risk lower the return. This low level of cost increases the bank's profit margin and thus profitability. A commercial bank with low level of capital does not have the advantage of investing in high risk - high return investments as it would be impossible for such banks to absorb shocks emanating from liquidity and credits risks.

Asset quality and profitability enjoys negative relationship as increase in non performing loans results in decrease in interest income and failure of recovering the principal amount (Sprayregen, Friedland, Miller & Li, 2004). The negative effect of asset quality on profitability also results in decline in future growth and profits as the bank do not have sufficient funds for expansion and investment. Moreover, economic condition of a country also affects the non-performing loans of the bank. Thus, asset quality is dependent not only on bank's risk appetite but also on efficiency of the bank to recover its loans, policies of the regulatory authorities and economic condition of the country.

Efficiency ratio and profitability enjoys positive relationships which depicts that increase in administrative expenses leads to increase in profitability and vice versa. This happens because of the bank's ability to transfer its cost to its customer without reducing its profit margin. In banking industry of Pakistan the customer does not enjoy high bargaining power because of the limited number of financial institutions in Pakistan. Another justification for the positive relationship between increase in administrative costs and profitability is that more qualified staff demands more compensation.

Liquidity can be calculated as ratio of net loans to total assets (Golin, 2001). Higher profitability results in decrease in liquidity. As compared with other asset components of a bank, loans are less liquid. Advances and loans disbursed contributes to the banks main source of earning. Higher amount of advances results in higher profitability of the bank provided that bank is able to control its non-performing loans. Higher the liquidity, lower is the risk of bankruptcy and liquidation as liquidity provides safety to the business to meet its current obligations. On the contrary high liquidity leads to decrease in profitability due to low investments made. The findings about the relationship of liquidity and profitability satisfy the portfolio theory which suggests that lower the liquidity higher the profitability.

Majority of the profitability of the bank comes from advances, therefore if assets increases due to increase in advances profitability also increases. Profitability at times increase because of advancement in technology, increase in market share and reduction in expenses. At times when size increases profitability decreases. This happens because it is more difficult to manage large portfolios effectively. It is difficult to build efficient and effective communication channels in a large organization. As the size of the bank increase the bank also increases its product mix. Inappropriate and inefficient decisions of product mix and investment decisions can lead to increase in nonperforming loans and thus reduction in profitability (Berger et al., 1987).

Real interest rate has a positive relationship with profitability. Past researches proves that because of monopolistic nature of banks they are able to increase deposit rate with increase in discount rate. Growth in lending rates has a positive relationship with nonperforming loans. Banks covers these losses by increasing lending rates again to cover the credit risk (Vong et al.,2009; & Sufian et al., 2008). Another indirect way of interest rate increase can be due to increase in inflation and economic growth. In such conditions demand for loans can increase leading to increase in profitability.

Inflation has direct and indirect effect on bank's profitability (Staikouras &Wood, 2004). Direct impact increases the cost of the bank. These costs include selling and administrative costs. Indirect effect can come from the change in interest rates and asset values due to increase in inflation. If a bank is able to increase the lending rates before the costs increase due to inflation, profitability and inflation will have a positive impact. Due to undeveloped private and secondary bond market most of the debt creation of companies are through bank borrowing which helps Commercial Banks to increase the lending rates and transfer inflation cost to their customer.

One measure to ascertain economic growth is through increase in growth of gross domestic (GDP). Profitability has a positive relationship with GDP growth as economic development ensures more investment in the economy and hence more borrowing from the banks. In good economic years businesses are doing well and therefore defaults of banks loans decreases, increasing the profitability of the banks. Increase in liquidity due to decline in bad debts also results in more advances and hence more profitability. Bank's profitability is related to the economic business cycle. Increase in gross domestic product results in increase in bank's profitability and decrease in gross domestic product leads to decrease in bank's profitability (Demirguc-Kunt & Huizinga, 2001; Bikker & Hu, 2002).

Overall, the research results indicates that Pakistan's Banking industry have certain privileges due to dearth of other financial institutions and limited bond market. The Banking industry is mature enough to take advantages of these circumstances to increase its profitability by transferring costs wherever and whenever possible.

Recommendations for Future Research

• A more comprehensive study including all types of banks operating in Pakistan and longer duration is required to generalize the results for the overall banking industry.

• More microeconomic and macroeconomic variables can be included from the literature to further study the determinants of profitability.

References

Aburime, U. T. (2009). Why African economies should open up to foreign banks. *AfricaGrowth Agenda, 2009*(Oct/Dec 2009), 20-21.

Ahmad, H. K., Raza, A., Amjad, W., & Akram, M. (2011). Financial Performance of Non Banking Finance Companies in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business, 2*(12), 732-744.

Anwar, Y. (2011, December 21). Role of Financial Institutions and Capital Markets in Pakistan's Economy. Governor's Speeches. Karachi, Sindh, Pakistan. Retrieved from *http://www.sbp.org.pk/about/speech/Governors/Mr.Yaseen.Anwar/2011/21-12-2011.pdf*

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of international financial Markets, Institutions and Money, 18*(2), 121-136.

Ben Naceur, S., & Goaied, M. (2008). The determinants of commercial bank interest margin and profitability: evidence from Tunisia. *Frontiers in Finance and Economics, 5*(1), 106-130.

Berger, A. N., Hanweck, G. A., & Humphrey, D. B. (1987). Competitive viability in banking: Scale, scope, and product mix economies. *Journal of monetary economics, 20*(3), 501-520.

Bikker, J. A., & Hu, H. (2002). Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements. *PSL Quarterly Review, 55*(221).143-175.

Dawood, U. (2014). Factors impacting profitability of commercial banks in Pakistan for the period of (2009-2012). *International Journal of Scientific and Research Publications, 4*(3), 1-7.

Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. *The World Bank Economic Review, 13*(2), 379-408.

Dietrich, A., & Wanzenried, G. (2011). Determinants of bank profitability before and during the crisis:
Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money, 21*(3), 307-327.

Flamini, V., McDonald, C. A., & Schumacher, L. (2009). The determinants of commercial bank profitability in Sub-Saharan Africa. *International Monetary Fund, 9*(15).

García-Herrero, A., Gavilá, S., & Santabárbara, D. (2009). What explains the low profitability of Chinese banks?. *Journal of Banking & Finance, 33*(11), 2080-2092.

Goddard, J., Molyneux, P., & Wilson, J. O. (2004). Dynamics of growth and profitability in banking.

J*ournal of Money, Credit and Banking,* 1069-1090.
Gul, S., Irshad, F., & Zaman, K. (2011). Factors Affecting Bank Profitability in Pakistan. *Romanian Economic Journal, 14*(39),61-87
Hasan, N. A., Shaari, N. A., Palanimally, Y. R., & Mohamed, R. K. M. H. (2013). The Impact of Macroeconomic and Bank Specific Components on the Return of Equity. *Interdisciplinary journal of contemporary research in business, 5*(2), 106-126.
Jamal, A. A. A., Hamidi, M., & Karim, M. R. A. (2012). Determinants of commercial banks' return on asset: panel evidence from Malaysia. *International Journal of Commerce, Business and Management, 1*(3), 55-62.
Kanwal, S., & Nadeem, M. (2013). The impact of macroeconomic variables on the profitability of listed commercial banks in Pakistan. *European journal of business and social sciences, 2*(9), 186-201.
Khan, F., Anuar, M. A., Choo, L. G., & Khan, H. (2011). Determinants of bank profitability in Pakistan: A case study of Pakistani banking sector. *World Applied Sciences Joural, 15*(10),1484-1493.
Kosmidou, K., & Zopounidis, C. (2008). Measurement of bank performance in Greece. *South-Eastern Europe Journal of Economics, 1*(1), 79-95.
Mamatzakis, E., & Remoundos, P. (2003). Determinants of Greek commercial banks, 1989-2000. *Spoudai, 53*(1), 84-94.
Mirzaei, A., & Mirzaei, Z. (2011). Bank-specific and macroeconomic determinants of profitability in middle eastern banking. *Iranian Economic Review, 15*(29), 101-128.
Obamuyi, T. M. (2013). Determinants of banks'profitability in a developing economy: evidence from nigeria. *Organizations and markets in emerging economies, 4*(08), 97-111.
Reynolds, S. E., Ratanakomut, S., & Gander, J. (2000). Bank financial structure in pre-crisis East and Southeast Asia. *Journal of Asian Economics, 11*(3), 319-331.
Shen, C. H., Chen, Y. K., Kao, L. F., & Yeh, C. Y. (2009). Bank liquidity risk and performance: A cross-country analysis. *Department of Finance, National Taiwan University.*
SPRAYREGEN, J. H., MILLER, N. S., & LI, C. (1996). Non-performing loans in China: a potential win-win opportunity for foreign investors and China's economy. *Int'l & Comp. L. Rev,* 739, 747.
Staikouras, C. K., & Wood, G. E. (2004). The determinants of European bank profitability. *International business and economics research journal,* 3, 57-68.
Sufian, F., & Habibullah, M. S. (2010). Does economic freedom fosters banks' performance? Panel evidence from Malaysia. *Journal of Contemporary Accounting & Economics, 6*(2), 77-91.
State Bank of Pakistan. (2013). Financial Statement Analysis of Financial Sector: 2009-2013. Retrieved on December 29th, 2014, from: *http://www.sbp.org.pk/departments/stats/FSA-2006-09(F).pdf.*
Tregenna, F. (2009). The fat years: the structure and profitability of the US banking sector in the pre-crisis period. *Cambridge Journal of Economics, 33*(4), 609-632.
Vong, P. I., & Chan, H. S. (2009). Determinants of bank profitability in Macao. *Macau Monetary Research Bulletin, 12*(6), 93-113.
Zimmerman, G. C. (1996). Factors influencing community bank performance in California. *Economic Review-Federal Reserve Bank of San Francisco,* 26-40.