



DETERMINANTS OF PROFITABILITY OF PAKISTANI BANKS: PANEL DATA EVIDENCE FOR THE PERIOD 2001-2010

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Abstract

This study is about Pakistani domestic commercial banks to search some internal factors of banks that are considered as determinants of profitability of bank. Return on assets ratio has been taken as dependent variable, whereas, Cost i.e. cost to income ratio, LIQ i.e. liquid assets to short term funding and liquid assets to customers, LOSRES i.e. Loan loss reserves to gross loans ratio and EQAS i.e. ratio of share capital as percentage of total assets variables have been taken as independent variables. After the application of Hausman Test panel data regression of random effects has been applied over ten years data ranging from 2001-2010 of domestic banks incorporated in Pakistan to find out empirical results. The results denote that Cost, EQAS and LOSRES are statistically significant as independent variables and negatively related to the return on assets and results of these variables are also according to expected signs. The fourth variable that is LIQ is also according to expected sign and is negatively associated with return on assets but it not statistically significant. F-statistics of the model is 33.63 that mean model is a good fit.

Key Words: Profitability, COST, Equity Asset Ratio, Loans Loss to Gross Loans Ratio, Liquidity Ratio, Pakistani Banks

JEL Classification: G21 (Banks; Other Depository Institutions; Micro Finance Institutions; Mortgages) G24 (Investment Banking; Venture Capital; Brokerage; Ratings and Ratings Agencies)

Introduction

Financial sector play a vital role in the economic development of any country. As banking sector is part of financial sector. So, banking sector of any country must be sound and well functioning for economic development. Banks help other sectors of the economy in various

ways such as becoming source of finance, providing payments settlement facility and helping to various sectors of economy to export and import their product etc. Banking sector of Pakistan comprises of both local, foreign banks and Islamic banks. Some specialized and public sector banks are also operating in Pakistan. Banking sector of Pakistan has witnessed drastic change in terms of growth and development over the period of 64 years. After the independence, banking sector of Pakistan had to face shortage of resources and uncertainty due to political and various other reasons. To develop financial sector of Pakistan the state bank of Pakistan was established on 1st July 1948 as central bank of the country. Afterwards through SBP ACT 1956 regulatory and various amendments were made for the development of banking sector. In 1974 nationalization of all private banks took place by government and this nationalization further deteriorated the performance of banking sector due to poor quality of banking products and services. In the decade of 1990s banks were again privatized under the reform policy of banking sector. Now forty banks operating all over Pakistan by the end of June 2010 according to report of state bank of Pakistan and out of these forty banks only four banks are owned by public sector and their total number of branches were one thousand six hundred and twenty one only. Total numbers of local private banks were twenty five and their total numbers of branches were six thousand eight hundred and fifty only. Moreover total numbers of foreign banks were seven and their total numbers of branches were eighty. Specialized banks were four having five hundred and thirty six branches. All statistics given above have been taken from state bank of Pakistan. Pakistani banking sector has shown substantial growth in recent financial years. Since 1980 total assets of banking have been increasing rapidly despite huge challenges to banking sector.

Table.1

Total Assets of Commercial Banks of Pakistan in Millions Rupees						
Years	2000	2001	2002	2003	2004	2005
Assets in Millions	2,637,176	2,780,593	3,666,691	3,717,520	4,474,805	5,362,995
Years	2006	2007	2008	2009	2010	
Assets in Millions	7,213,902	9,101,042	9,212,629	10,909,126	11,704,800	

Source: State Bank of Pakistan (SBP)

Table.1 is representing the data of total assets of all commercial banks of Pakistan from 2000-2010 at glance. In 2000 the total number of assets owned by all commercial banks were 2,637,176 in millions and now in 2010 the assets owned by commercial banks have increased up to 11,704,800 witnessing a growth almost 343 percent growth over last ten financial years.

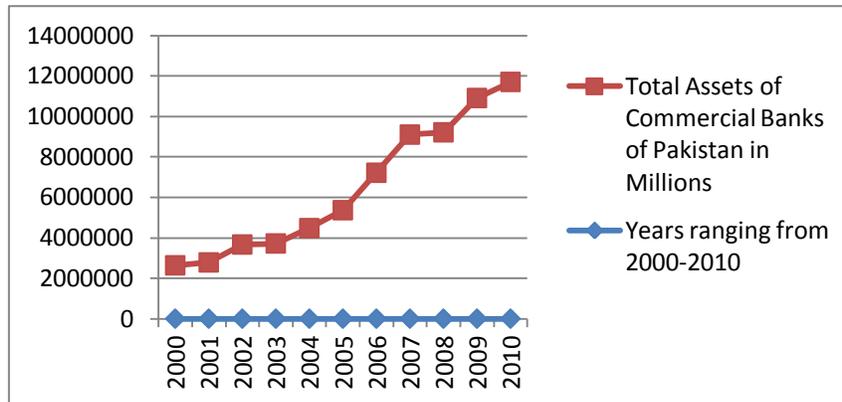


Figure.1 Total Assets of Commercial banks of Pakistan in Million from 2000-2010

Figure.1 is the representation of assets of all commercial banks over the last ten years. Despite world recession in 2008 the banking sector of Pakistan suffered less as compare to other sectors of economy and after a minor setback in 2008, the banking industry again witnessed growing trend in assets.

Table.2

Year wise Growth in Assets of Commercial Banks of Pakistan in %					
Years	2001	2002	2003	2004	2005
Growth in (%)	5.44	31.87	1.39	20.37	19.85
Years	2006	2007	2008	2009	2010
Growth in (%)	34.51	26.16	1.23	18.41	7.29

Source: State Bank of Pakistan (SBP)

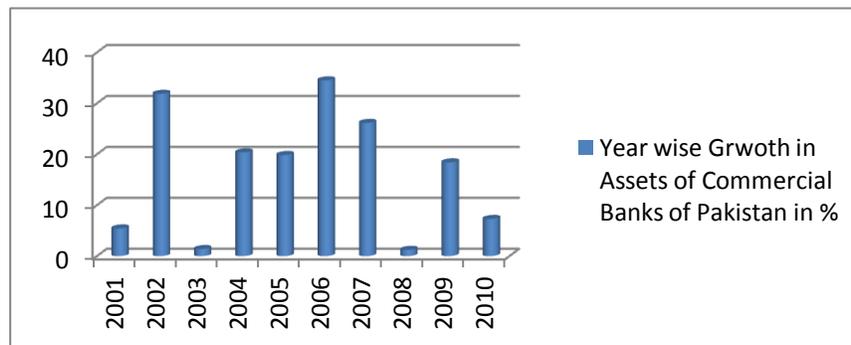


Figure.2 Year Wise Growth in Assets of Commercial Banks of Pakistan in %

Table.2 is the tabulated representation of growth in assets of commercial banks yearly and figure depiction of yearly growth of assets of commercial banks. Highest growth in assets of commercial banks was observed in 2006 over the last ten years as cleared from table.2 and figure.2

The tendency of banking sector of Pakistan over the last few years was towards introduction and betterment of Islamic banking, privatization, competition, deregulation and mergers. Such sorts of changes in the sector have increased scope of competition and choices for consumers have also been increased.

The changes mentioned posed greater challenges to banking sector of Pakistan because these rapid changes in operating environment ultimately affected the performance of banks. However, irrespective of such considerable changes in structure and substantial increase in competition, the banking sector of Pakistan had been remained under research to bring innovation, betterment in service and improved quality of product.

The major reforms started in banking sector of Pakistan in earlier 1990s. As the basic purpose of these reforms was to bring such change that could make them efficient and sound. Following major changes occurred due to reforms in the banking sector. Privatization of sector brought significant betterment in the quality of service through professionalism. Secondly, due to lack of innovative products and poor quality of service during nationalism era, banks were losing substantial part of profit to foreign banks. Privatization witnessed huge upward trend in profits due to more innovative product. Thirdly, due to reforms, strict measures had been considered for the appraisal of loans, as a result default ratio of borrowers was reduced.

The present study uses panel data to study profitability of commercial banks in Pakistan because the banking system in Pakistan has undergone technological improvements like the introduction of ATM, Credit Cards, Online Banking, and Privatization overtime. So in order to capture any increased profitability that may occur overtime as technological improvements that are made in the banking industry, we need to use time series data along with cross-section data. This will allow us to separate the impact of technological improvements from other factors. In effect, the panel data set allows us to study both the changes in profits of a single bank over time and the variation in profits of whole banking industry at a given point in time.

Most of the studies concluded that internal factors explain a large proportion of bank profitability along with many external factors. However, these relations are not same everywhere. Relationship among these factors differs across countries. Therefore, wearing this argument further research is required to investigate relationship.

The rest of the paper is structured as follows: Section 2 is about literature review, Section 3 is about describing the nature of variables and their measurements that have been selected to measure performance Pakistani banks. Section 4 is about the methodology select to find out statistical results. Section 5 is about the presentation of empirical results and their analysis and Section 6 is about concluding remarks recommendations and future directions.

Literature Review

Guru, B. K., J. Staunton, et al. (2000) conducted research to find out determinants of profitability of commercial banks in Malaysia concluded that efficiency in managing the expenses of banks and market interest rate plays vital role to determine profitability of commercial banks. Further they concluded that to increase the profit and to reduce expenses banks must increase current account deposit on which no interest is applicable. While advancing loans to any one, commercial banks must be extremely careful and must have vigilant eyes on the business risk indicators.

Ali, K., M. F. Akhtar, et al. (2011) argued that profitability of banks can be enhanced through efficient asset management and through economic growth. Further they argued that high

credit risk of advances result in lower profitability of banks. As micro variable GDP has positive impact on the profitability of banks. As micro indicators profitability of banks is positively affected by size of bank, operating efficiency and profitability is negatively affected by credit risk.

Angbazo (1997) concluded that net interest margin of banks is not affected by interest rate risk where as it more affected by default risk and this higher interest margin leads towards higher profitability of banks. The banks that have small scale of operations they are affected by both default risk and interest rate risk this ultimately affect their results.

Pasiouras and Kosmidou (2007) discussed that how commercial banks profit is affected by some factors that are considered as determinants of profitability of domestic and foreign banks. Banks solvency chances increases due to higher default and interest rate risk that have an adverse impact on the economy as well and reduces the profits of banks. Equity and assets growth both have positive impact on the profitability of both domestic and commercial banks. Further, cost impact on return on assets was significant and negative for both foreign and domestic banks. The relationship of size of operations was negative to for both the domestic and foreign banks and this relationship also give support to this concept that larger operation for financial institution result in diseconomies of scale. The GDP and inflation have positive and significant impact on the return on assets of both foreign and domestic banks.

Naceur (2003) conducted research and concluded that huge amount of overheads earnings and huge capital has positive impact on the profitability of banks. The net interest margin and loans advances by bank have significant and positive impact on the profitability of banks. Further, from the macroeconomic indicators size and growth have a negative impact on the profitability of commercial bank. Financial markets developments also have significant impact on the profitability of commercial banks.

Kosmidou (2008) concluded that banks which are well capitalized and have less operating cost earn higher return on assets. Bank size only matters when macroeconomic variable are included in the model.

(Walter 1991) concluded that creating provision about the loan loss reverse is amongst the most important factors that affect the profitability of banks. Loan loss provision provides true picture to the stake holders about the profits/losses to the banks. If loan loss provision will not be created than profits will be overstated. Loan loss ratio must be maintained by keeping in mind all micro and macro factor rather than depending upon past trends.

Mamatzakis and Remoundos (2003) concluded that some of the important variables that explain banks profitability are ratio of loans to assets, ratio of equity to assets and personal operating expense of banks. These variables are also directly considered as in relation of directly to strategic planning. Further, economies of scale have positive impact on the profitability of banks and bank size is considered as economies of scale. As an external variable the size of the market is considered as having positive impact on the profitability of banks.

(Goddard, Molyneux et al. 2004) The ownership is not significantly associated with the profits of banks. Capital to assets is measure of strength of ratio of banks and increases the profitability of banks. Liquidity ratio is also positively associated with profitability of banks.

Naceur and Goaid (2005) banks profitability is highly associated with how much cash bank holds. Banks advances to total assets have positive impact on the profitability of banks where as size of banks has negative significant impact on the profitability of banks. Banks profitability is also affected by stock markets because if stock market will grow then demand of advances will increase.

Williams (2003) concluded that profitability of domestic banks is negatively related with the market share of host country competitors whereas profitability is positively associated with GDP growth.

Selected Variables and Measurement

Five characteristics of a commercial bank have been used as internal determinants of performance. The variables chosen to measure the performance of banks are followings:

Dependent Variable

ROAA

The ROAA stands for return on total assets of the banks. In line with earlier studies that examined the determinants of the banks' profitability, accounting ratios have also been used as measures of performance in this study as well. The first ratio is the return on average assets (ROAA), calculated as net profit after tax divided by average total assets. This is probably the most important single ratio to compare the efficiency and operating performance of banks as it indicates the returns generated from the assets that bank owns.

$$\text{ROAA} = \frac{\text{Net Income}_{it}}{\text{TOTAL ASSETS}_{it}}$$

Independent Variables

The four variables that are used as internal determinants of performance and as independent variable are as following:

Cost

This is the ratio cost to income. This ratio is used to have an idea of the information on the efficiency of the management because it tells expense to revenue generated by firms. Therefore, higher ratios means management is less efficient or vice versa. Cost to income ratio (COST). It measures the overheads or costs of running the bank, including staff salaries and benefits, occupancy expenses and other expenses such as office supplies shown by Total Non-Markup/Interest Expenses as a percentage of total Markup plus Non Markup income. It is used as an indicator of management's ability to control costs and is expected to have a negative relation with profits. Profit reduction of commercial banks is related with competitive pressure in the market and it is due to inefficiency of cost management and revenues (Maudos and Pastor 2003).

$$\text{COST} = \frac{\text{Total Non - Mark up/Interest Expenses}_{it}}{\text{Mark Up/Return/Interest Earned}_{it} + \text{Total Non - Mark up/Interest Income}_{it}}$$

EQAS

Bank's capital is the ultimate line of defense against the risk of bank's technical insolvency. The ratio of share capital as a percentage of total assets (EQAS) is considered the best ratio for capital strength. It is expected that the higher the equity to assets ratio, the lower the need to external funding and the higher the profitability of the bank. EQAS is used as measure to

know strength of capital and it is calculated as equity relative to total assets. If the share capital ratio to total assets is more then it means bank are managing their assets efficiently and not looking for potential returns (Goddard, Molyneux et al. 2004). Higher value of capital-asset ratios is considered as an indicator of low average advances that leads towards lower risk and it decreases the profits of banks or vice versa. Moreover, equity is considered as more expensive source of funding. So, an increase in equity capital increases the average cost of capital. This reduces the profitability of the bank Angbazo (1997). Equity as a ratio of total assets is positively related with the profitability of banks (Pasiouras and Kosmidou 2007).

$$EQAS = \frac{SHARE\ CAPITAL_{it}}{TOTAL\ ASSETS_{it}}$$

LOSRES

Loan loss reserves to gross loans ratio provides information about portfolio that how much of the total portfolio has been used as a measure of bank's asset liquidity and risk that were provided for but not charged off. If the result of ratio will be higher due to this quality of loans will be poorer and loan portfolio will be highly risky or vice versa. Further, the ratio Loan Loss Reserves to gross Loans (LOSRES) is also a measure of quality of assets of Banks. It is measured by taking provision & bad debts written off directly as a percentage of net advances. Bank's asset quality may have a negative impact on bank profitability by reducing interest income revenue and by increasing the provisions costs. The desire to earn more and smooth profits depends on the best estimates of loan losses reserves that are inherent in their portfolios of loans and loan loss reserves also provide incentives to banks such as lowering taxes and expenses of estimating the future loan losses also get limited.(Walter 1991).

$$LOSRES = \frac{BAD\ DEBTS_{it}}{ADVANCES_{it}}$$

LIQ

LIQ is used as a measure for liquidity and it is calculated as liquid assets to short term funding and liquid assets to customers. This is a measure of liquidity calculated as liquid assets to customer and short term funding. Higher answer of the ratio will be indicator of higher liquidity or vice versa. Low liquidity positively affects the profitability of banks (Goddard, Molyneux et al. 2004). The ratio of liquid assets to customer plus short term funding is used in this study as a measure of liquidity (LIQ). The ratio of cash & balances with Treasury banks as a percentage of Deposits and other accounts is taken. The higher the percentage the more liquid the bank is and less vulnerable to a run on the bank. As liquid assets are associated with lower rates of return, so we expect a negative relationship between ROAA and LIQ.

$$LIQ = \frac{Cash\ and\ Balances\ with\ Treasuray\ Banks_{it}}{Deposits\ and\ other\ Accounts_{it}}$$

Statistical Model

Panel Regression

$$ROAA_{it} = C + \beta_1 COST_{it} + \beta_3 EQAS_{it} + \beta_2 LOSRES_{it} + \beta_4 LIQ_{it} + E_{it}$$

Where:

ROAA stand for return on assets of ith bank and tth time

i = is denoting individual bank in the model

t = t is referring to year

C = is a constant or intercept

β = is the coefficient of each variable

COST = is referring ratio of total cost to total income earned of ith bank and tth time

EQAS = is referring the ratio of equity to total assets year of ith bank and tth time

LOSRES = is referring the ratio of Bad Debts to total advances of ith bank and tth time

LIQ = is referring the ratio of cash and balances with treasury banks to total deposits and other accounts of ith bank and tth time

E_{it} = is representing the error term of panel regression

This is simple form of panel regression in which common intercept is considered for all cross section subjects.

Correlated Random Effects - Hausman Test

To apply fixed effect model or error component model that is also known as random effect, Hausman Test for the one way model provides guidance in this regard. Wallace and Hussain estimator of component variance for random effect is applied. Correlated Random Effects - Hausman Test was developed in 1978. Hausman test is used to test null hypothesis of no difference in the two models. If empirical results fails to reject null hypothesis then we can take results of any effects whether random effect or fixed effect. In such case any model can be applied but we have selected banks randomly for analysis that is why random effect model will be preferred over fixed effect model.

Cross-section random effects

Wallace and Hussain estimator of component variances

Wallace and Hussain estimator of component variances is the estimator of both one way and two way random effects developed by Wallace and Hussain in (1969). This test is an estimator of the random effects under random effects of panel data procedure. In this article one way random effects model has been applied. This test is more appropriate for balanced panel data.

Population

The target population used in this article comprises of all domestic banks incorporated in Pakistan from the banking sector of the economy for the year 2001-2008 and this represent hundred percent target population.

Sample Size

Total sixteen banks have been considered for sample size this represent forty percent of the total population. Banks should meet the following three conditions for inclusion in the sample. First, they had to be classified as Pakistani Banks included in the list as on 30-3-2010. Second, they should be characterized as scheduled banks. Third, they should have annual accounting statements between 2001 and 2010.

Data collection, Tools and Software used

Data has been collected from the State Bank of Pakistan of internal factors. State bank of Pakistan published balance sheet data of all the banks on yearly basis. The time period was selected considering that it offers recent time series observations and it constitutes a period of structural changes for Pakistani banking system. This yielded a balanced panel data of 16 commercial banks over the period 2001 to 2010, consisting of 160 observations. Internet has been used to collect the data from state bank web site and from respective websites of banks. E-views version 6 and Microsoft excel software have been used to find out empirical results and to calculate ratios respectively.

Results

The empirical results are as following:

Correlation Matrices Test

Correlation matrices test has applied over the panel data to check whether multi co linearity exist amongst variables or not. The results of correlation matrices test has been presented in Table 4.

Tables 4

	<i>ROAA</i>	<i>COST</i>	<i>EQAS</i>	<i>LOSRES</i>	<i>LIQ</i>
<i>ROAA</i>	1				
<i>COST</i>	0.26859	1			
<i>EQAS</i>	0.53952	0.09985	1		
<i>LOSRES</i>	0.59571	-0.03379	0.456343	1	
<i>LIQ</i>	-0.07	0.322931	-0.1752	-0.16338	1

The highest value of correlation is 0.456 that is between EQAS and LOSRES. It is less than fifty percent. Now it is sure that multi co linearity does not exist amongst variables. All independent variables are negatively and according to expected signs are associated with dependent variable.

Balanced Panel Least Square Regression

Dependent Variable: ROAA

Method: Panel Least Squares

Sample: 2001 2010

Periods included: 10

Cross-sections included: 16

Total panel (balanced) observations: 160

Table 5

	Coefficient	Std. Error	t-Statistic	Prob.
C	3.095820	0.269673	11.47990	0.0000
COST	-0.022938	0.006564	-3.494245	0.0006
EQAS	-0.120482	0.023564	-5.112986	0.0000
LOSRES	-0.388369	0.051003	-7.614557	0.0000
LIQ	-0.029252	0.012757	-2.293026	0.0232
R-squared	0.524991	Mean dependent var		0.653000
Adjusted R-squared	0.512732	S.D. dependent var		1.785499
S.E. of regression	1.246360	Akaike info criterion		3.309083
Sum squared resid	240.7791	Schwarz criterion		3.405182
Log likelihood	-259.7267	Hannan-Quinn criter.		3.348106
F-statistic	42.82732	Durbin-Watson stat		1.114035
Prob(F-statistic)	0.000000			

Table 5 contains results of simple panel least square. Although signs of all variables results are according to expected sign having negative values but the results of Durbin-Watson statistic should not be neglected. The Durbin-Watson statistic is low and there is possibility of autocorrelation. The F statistics is 42.82 that mean model is good fit model. The adjusted R-squared value is 0.512 that means independent variables are almost 51 percent explaining the total explanation. In order to solve this problem model fixed or random effect models are applied. As earlier stated that to check whether random test is applicable or fixed test is applicable then Correlated Random Effects - Hausman Test estimator of component variances is applied.

Correlated Random Effects - Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Table 6

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.122601	4	0.2749

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
COST	-0.017464	-0.020671	0.000006	0.1854
EQAS	-0.139991	-0.124674	0.000450	0.4703
LOSRES	-0.401393	-0.397677	0.000219	0.8017
LIQ	-0.003057	-0.021986	0.000164	0.1389

The Correlated Random Effects - Hausman Test results are interpreted on the basis of chi-square value and according to chi-square value we are fail to reject null hypothesis.(Gujarati) It means that there exists no significant difference in the statistical results of random and fixed effects. Random effects test will be applicable because we have selected our sample on random basis. There exist two types of random effects test one is Wansbeek and Kapteyn estimator of component variances test and other one is Wallace and Hussain estimator of component variances but for balanced panel data Wallace and Hussain estimator of component variances test is preferable over Wansbeek and Kapteyn estimator of component variances test. Therefore, Wallace and Hussain estimator of component variances has been applied as to obtain the results of random cross section subjects(Baltagi 2005).

Wallace and Hussain estimator of component variances

Dependent Variable: ROAA?

Method: Pooled EGLS (Cross-section random effects)

Sample: 1 10

Included observations: 10

Cross-sections included: 16

Total panel (balanced) observations: 160

Wallace and Hussain estimator of component variances

Table 7

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.969728	0.322456	9.209714	0.0000
COST?	-0.020671	0.006662	-3.102782	0.0023
EQAS?	-0.124674	0.026489	-4.706631	0.0000
LOSRES?	-0.397677	0.050023	-7.949961	0.0000
LIQ?	-0.021986	0.014856	-1.479961	0.1409
Random Effects (Cross)				
1--C	-0.141267			
2--C	-0.192264			
3--C	-0.451568			
4--C	-0.296458			
5--C	0.263010			
6--C	-0.136509			
7--C	0.160308			
8--C	-0.296450			
9--C	0.598551			
10--C	0.320516			
11--C	0.143954			
12--C	-0.409634			
13--C	-0.054046			
14--C	0.025050			
15--C	0.544925			
16--C	-0.078118			
Effects Specification				
			S.D.	Rho
Cross-section random			0.431156	0.1177
Idiosyncratic random			1.180309	0.8823
Weighted Statistics				
R-squared	0.464700	Mean dependent var		0.427393
Adjusted R-squared	0.450886	S.D. dependent var		1.592224
S.E. of regression	1.179874	Sum squared resid		215.7759
F-statistic	33.63928	Durbin-Watson stat		1.246204
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.522333	Mean dependent var		0.653000
Sum squared resid	242.1260	Durbin-Watson stat		1.110582

Table 6 is representing results of Wallace and Hussain estimator of component variances developed in 1978 cross sections random effects test. Values of all coefficients are having negative signs and are according to expected signs. The value of t-statistics of COST, EQAS, and LOSRES is 3.102, 4.70 and 7.94 respectively that mean these variables are significant. LIQ coefficient value although is according to expected sign whereas t-statistics value is not significant. The Drbin-Watson statistics has shown improvement in this result because it's value in ordinary panel least square was 1.114035 and now it is 1.246204. F-statistics of the model is 33.63928 again showing that model is a good fit model.

Actual Intercept

Table 7.

Banks Name	Banks Code	Actual Intercept
ABL	1--C	-2.828461
Askari	2--C	-2.777464
Alfalah	3--C	-2.51816
Al-Habib	4--C	-2.67327
Faysal	*5--C	3.232738
First women	6--C	-2.833219
Habib Bank	*7--C	3.130036
KASB	8--C	-2.673278
MCB	*9--C	3.568279
My Bank	*10--C	3.290244
NBP	*11--C	3.113682
Punjab Provisional	12--C	-2.560094
Silk Bank	13--C	-2.915682
Soneri Bank	*14--C	2.994778
Khyber Bank	*15—C	3.514653
UBL	16—C	-2.89161

The actual intercept of all banks are shown in table 7. * is representing those banks that have a larger intercept than the average. These intercepts have been calculated by adding individual value of intercept into common intercept. MCB bank is found to have the highest intercept value, bank of Khyber have second highest intercept value and My bank have third highest intercept value and these values are 3.568279, 3.514653 and 3.290244.

Conclusion, Policy Recommendations and future Directions

This article is about the study of internal factors that are considered as determinants profitability of commercial banks. Four variables were taken as independent variables that are COST, EQAS, LOSRES and LIQ all variables coefficient are according to expected signs. The results of the study coincides with (Walter 1991), (Maudos and Pastor 2003), (Goddard, Molyneux et al. 2004), (Goddard, Molyneux et al. 2004), (Pasiouras and Kosmidou 2007) and Angbazo (1997). The cost coefficient is negatively associated with the return on assets that mean

banks should focus on efficient cost management for lowering the cost. The EQAS coefficient is also negative and according to expected sign equity although it measure of banks strength but banks should not hold much proportion of capital. Banks should advance loans or banks should invest in such project where risk is low and return is high. Banks should minimize loss on loans by adopting effective recovery and advancing of loans policy because less loss on loans ensures higher profitability. Non-performing loans must be either written off or settled by mutual understanding or on easy terms. The liquidity proxy ratio coefficient is also negatively associated with return on assets. The liquidity of must be efficient to handle the situation of liquidity crunch as faced by banking of Pakistan in 2008. The F-statistics depicts that model is good fit because it's value calculated through random effect model is 33.63. Following are some recommendations and future directions of this article. This article is not the representation of whole population pooled data analysis can be applied on the whole industry. Data included for analysis is ranging from 2001-2010. Data older than 2001 can also be included for research. Some other variables can also be included for further research to determine such factors that are considered as determinants of profitability of banks. Other statistical models can also be such dynamic models, two way component models.

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