

BANK-SPECIFIC & MACROECONOMIC INDICATORS OF PROFITABILITY (AN EMPIRICAL EVIDENCE FROM THE INVESTMENT BANKS OF PAKISTAN)

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ABSTRACT: This paper aims to examine the financial structure as a determinant of the financial performance of investment banks of Pakistan. For this purpose the quantitative research methodology is used in this study as secondary data of 11 years (2006-2016) of seven investment banks of Pakistan by utilizing bank-level data and data from DWH Department of State Bank of Pakistan. For evaluating cross-section time series data, unbalance panel regression is used to determine Bank Specific & Macroeconomic indicators of Profitability of investment banks of Pakistan. Five bank specifics and macroeconomic indicators were used to predict investment banks profitability. Generally, the findings of this paper confirm previous findings. To achieve its objectives, multiple tests are run such as descriptive statistics, stationary test, correlation, and panel regression model, and Hausman test, fixed and random effect model had run and discussed. Controlling with internal factor mainly equity financing, debt financing and size of investment banks gives significant results and operating efficiency and inflation gives insignificant on investment banks of Pakistan. The study also finds that banks internal determinants of profitability were different among Pakistani investment banks. These findings may be helpful for Investment bankers, shareholders, investors for making financial decisions and improving financial policies in the future.

KEYWORDS: Bank-Specific Determinants, Investment Banks, Profitability, Pakistan.

INTRODUCTION

An investment bank is simply that provides different financial services to the companies or even government to raise money to start the business. Investment banks do not take deposit like commercial banks. Investment banks facilitate underwriting, IPOs, Merger, and acquisition, the sale of securities, restructuring, as well as advisory services for merger and acquisition and so on.

1.4 Investment Banks in Pakistan

Investment banks are playing a very vital role in the financial sector of Pakistan. The first investment bank was developed in 1987. The regulatory body of investment banks is Security and exchange commission of Pakistan. SECP introduced new laws to support NBFCs in 2008.

Previously, institutions that were operating both commercial and investment activities have not been seen as in a positive light. It was perceived as a link to the global recession in the early 20th century. Then a new act named as Glass-Steagall Act was largely abolished in 1990 and repealed in 1999 by Gramm-Leach Bliley Act. After that banks were able to provide both types of banking activities under the same roof but most banks in the USA did not choose these mix operations and remained operating as either commercial or investment bank.

Initially, the services of investment banks were different as commercial banks in Pakistan but currently commercial banks also providing services of investment banking in Pakistan.

1.5 Problem Statement

Due to the commercial banking have been started the services of investment banking in Pakistan. An exhaustive competition has aroused among the banking industry of Pakistan. Investment banks had limited success due to various reasons such as a high fragmentation due to a few investment banks dominating the market, failure to develop a stable source of long term debt and so on. Therefore, each investment bank wants to achieve higher market share & increase profitability by trying to be unique in the investment banking industry.

1.6 Objective of Study

The objective of the study is to assess the financial performance of the investment bank of Pakistan for the period 2006-2016 by using financial ratios, financial measures and macroeconomic indicators.

1.7 Research Question

RQ1: What are the determinants of profitability in investment banks of Pakistan?

RQ2: What are the effects of the determinants of Profitability on the performance of Investment banks of Pakistan?

1.8 Hypotheses

H₁: Equity to total asset is positively related to profitability

H₂: Operating expense is positively related to profitability

H₃: Total Liability to equity ratio is positively related to profitability

H₄: Equity multiplier is positively related to profitability

H₅: Bank size is positively related to profitability

H₀₆: Inflation is positively related to Profitability

1.9 Limitation of the study

There are more than fifty commercial banks in Pakistan in which some are full-fledged Investment banks. First Credit investment bank was built in 1989 and obtained a license as investment banking in the year 2004. We have so many commercial banks operating in Pakistan providing some services of investment banks but due to the shortage of time and data availability and some other reason this paper only selected seven pure investment banks of Pakistan.

The study selected seven following investment banks of Pakistan and did not include commercial banks that opened a window as investment banks.

1. Escorts Investment Bank
2. First Credit and Investment Bank
3. First Dawood Investment Bank
4. IGI Investment Bank Ltd.
5. Invest Capital Investment Bank Ltd.

6. Security Investment Bank Ltd.

7. Trust Investment Bank Ltd.

Investment banks offer support to the capital market through trading in shares and they also provide credit market in an economy through short, medium, and long-term loans. For the development of financial performance, three main factors are included institution size, operating efficiency and asset management (Tarawneh, 2006, Qureshi et al, 2013).

EMPIRICAL LITERATURE REVIEW

Even though the acknowledgment of the importance Profitability of Private investment banks in developing countries such as Pakistan, very few research has been done on determinants of Profitability of investment banks. ROA and ROE are considered to be the most useful ratio for evaluating profitability such as banks and other financial institutions. Higher the ratio of ROA shows better performance of banks and point out that assets of the firm are efficiently utilizing and hence contributing to generating income. In this section, the summary of previous studies particularly related to factors that affect the bank's profitability is explained. Tunay & Silpar (2006) examined the performance of Turkish banking industry for the period of 1988 to 2004, found that Return on equity has a positive impact on profitability. Return on Asset and Return on equity mostly used as dependent variables in these studies and all external and internal determinants of profitability are used as independent variables.

Factors that affect the performance of the bank are generally considered as internal factors and External factors (Sehrish et al., 2011). Management decisions, objective, strategies are mostly dependent on internal factors (Staikouras and wood, 2004), while external factors are categorized as a macroeconomic variable, industrial variables (Athanasoglou et al., 2005). Bank's internal factors, macroeconomic indicators, and industrial variables are previously studied by (Revell, 1979), (Smirlock, 1985) and Bourke (1989), (Demirguc-Kunt & Huizinga 1999) (Molyneux & Thornton, 1992).

On the other hand recent studies by M. Sajid and Saeed (2014) investigated profitability of 13 united banks for the period of 2006-2012, Abuzar (2013) probed the internal factors of Islamic banks' profitability of Sudan, Dr. Srinivas Madishetti et al (2013) examined the Tanzanian commercial banks from 2006-2012, Khizer et. al (2011) studied the public and private banks of Pakistan from 2006 to 2009, and concluded that banks' internal factors such as bank's size, asset management, operating efficiency, total assets, business risk, and capital adequacy cost, are positively co-related with return on asset and return on equity that is profitability of the bank.

Nicolae Petria et al (2015) discussed the profitability of 27 Eu banking system over the period of 2004-2011 and found that ROA has a significant impact on Total asset of the bank i-e bank size, liquidity has a negative impact on profitability hence deteriorates bank's performance with the liquidity ratio rise. While regarding external factors such as GDP growth has a positive effect on the other hand inflation does not have any influence on the bank's profitability.

Stephen Oluwafemi adjusts, et al (2014) tried out finding factors affecting 14 banks of Nigeria performance for the period from 2000 to 2013. Capital adequacy ratio is positively related to return on asset whereas, management efficiency, GDP growth, and inflation are negatively related to ROA.

M. Kabir, Abde Hameed, M. Bashir (2005) analyzed Islamic banks profitability worldwide during 1994-2001 and concluded that there is negative impact between equity to total asset ratio and Return on asset

and return on equity. While GDP has a meaningful relationship with the bank's performance and size of the bank has a negative relationship with the bank's profitability except for net interest margin.

Evan Kiganda (2014) evaluated the macroeconomic indicators on commercial banks performance in Kenya from 2008-2012. The study found that economic growth i-e real GDP and inflation have a meaningful relationship with ROA.

Usman Dawood (2014) observed external and internal factors of 23 commercial banks of Pakistan for the period of 2009-2012 by using correlation and regression analysis. He found that high-cost efficiency and liquidity develop a negative relationship with profitability. Whereas Capital adequacy indicated a substantial positive relationship with the profitability, on the other hand, the size of the bank does not seem to lead any sort of profitability.

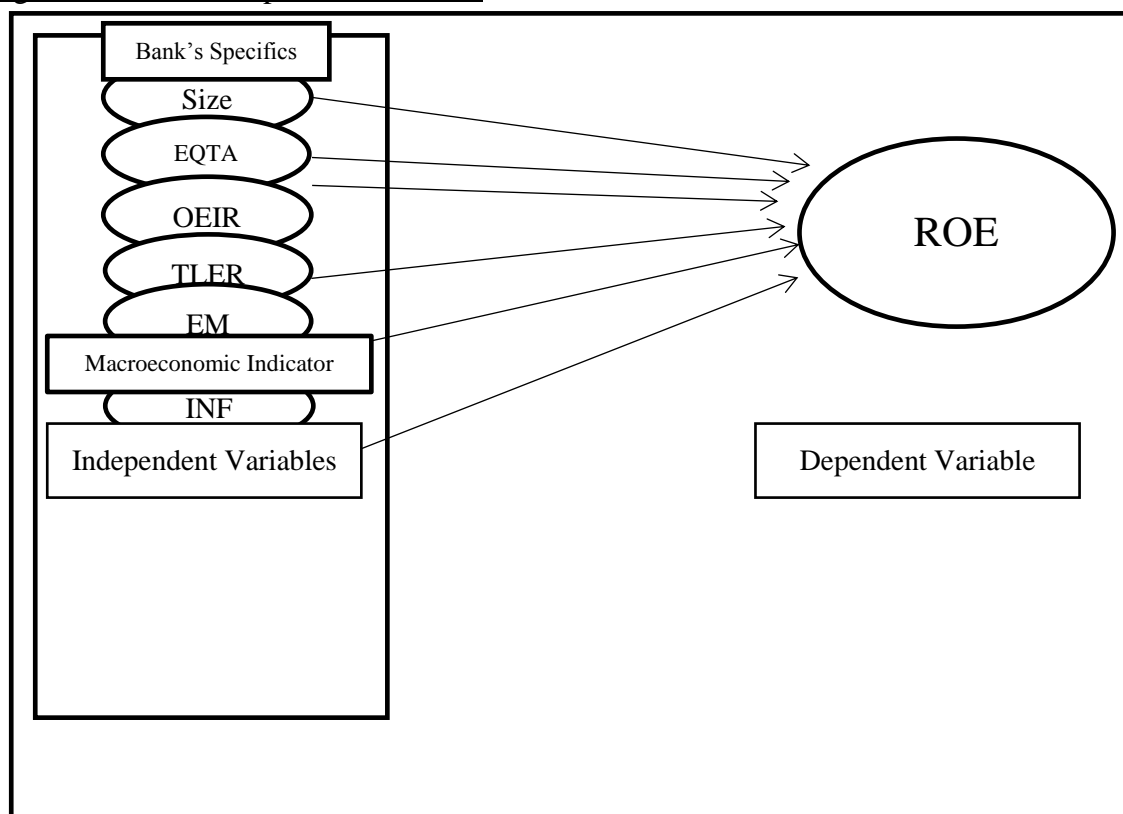
Khalil, Ali Raza, Hafiz (2011) studied the financial performance of nonbanking finance companies of Pakistan that provide investment advisory, Asset Management, leasing, and investment finance. The study covers the period of two years the 2008 & 2009. For this purpose, they used ratios to evaluate the performance of NBFCs. They divided ratios into three groups. 1- Profitability, 2- Leverage ratio, 3- Liquidity ratio. The study concluded that there is a decline in the profitability of NFBCs in 2008 compared to the year 2009, except for mutual funds.

Khrawish (2011) examined the commercial banks of Jordan and found the positive impact among the Equity to total Asset ratio (EQTA), Total liabilities to total asset ratio (TLTA) and Net Interest Margin (NIM) and negative relationship between expenses and positive association between (GDPG), inflation (INF) and banks' profitability.

Berger et al (2000) found that profitability depends on practical activities of enterprises. Pillof and Rhoades (2002) found positive co-relation between bank size and profitability, in contrast, Kyrikai Kosmidou, Constantin Zopounidis (2008) evaluated the bank's performance in Greece for the period of 2003-2004. Usman Dawood (2014) observed external and internal factors of 23 commercial banks of Pakistan for the period of 2009-2012. The study found a negative relation between the bank size and profitability.

Hassan, Ali Raza, Akram (2011) examined the financial performance of public Vs private banks. They gathered data for the period of 2006-2009. They also used financial ratios such as efficiency, profitability, capital/ leverage, liquidity ratios to assess the performances of these banks. The study concluded that the financial performance of banks depends on changes in financial ratios.

Figure No. 2.1 Conceptual Framework



METHODOLOGY

This section is divided into two major segments Bank Specific variables and macroeconomic indicators that affect the Profitability of investment banks of Pakistan. This section also will describe the data used and the conceptual framework and model formulation.

3.1 Description of Variables

Financial ratios provide an easy and swift way of assessing the financial performance of the business. These financial ratios provide a better understanding of the financial position of banks. The data for computing financial ratios derived from Banks financial statements of analysis and balance sheets. The study used different financial ratios to measure the financial performance of the banks. These ratios are grouped into different categories

- a) Profitability ratio
- b) Risk & Solvency ratio
- c) Efficiency ratio
- d) Asset Management ratio

3.1.1 Profitability Ratio

- Return on Equity ratio (ROE)

3.1.2 Risk & Solvency Ratios

- (T. Liabilities to T. Equity) ,
- (T. Liabilities to T. Asset Ratio)
- (Equity Multiplier)

3.1.3 Asset Management Ratios

- Equity to Assets Ratio

3.1.4 Efficiency Ratios

- Operating Expense to income ratio

3.2 Macroeconomic Indicators

- Inflation

Among the all commercial and investment banks, seven pure investment banks are selected which covered a hundred percent sample.

3.2 Data Collection

This study sample is used unbalanced panel data set of seven investment banks of Pakistan over the period 2006-2016 consisting of 77 observations. The quantitative research methodology, annual bank-level data, and macroeconomic data are used in this study. The bank-specific data is obtained from financial statement analysis maintained by Statistics and DWH Department of State Bank of Pakistan and annual reports of banks and the macroeconomic variables data is obtained from the IMF's International Financial Statistics (IFS). The Panel least square is used on the data having 11 years of period and making 7 cross sections and 77 observations. Descriptive statistics and normality of the data are analyzed.

3.3 Methods of Analysis

Both descriptive and econometric analyses are used in this study. The descriptive analyses are used for normality distribution and mean of data. To determine the explanatory variables an initial estimation of correlation coefficient of all variables was carried out that finally appeared in the regression findings. Econometric analysis is done by running multiple tests such as, stationary test, correlation, and panel regression model, and Hausman test, fixed and random effect model.

4.1 Pooled Regression Models

ETL R	0.65332 5	0.515 9	1.87090 7	0.065 8	1.62408 3	0.109 0	1.63663 2	0.106 3	-	-
LITA	-1.48576	0.142 3	-	-	-	-	-	-	-	-
OEI R	1.00101	0.320 6	0.81194 3	0.419 7	0.64367 4	0.522 0	0.64924 2	0.518 3	0.93476 8	0.353 1
OIA R	0.98570 1	0.328 0	1.35304 9	0.180 7	-	-	-	-	-	-
OET A	-2.16152	0.034 4	-1.6262	0.108 7	-	-	-	-	-	-
TLE R	-6.07015	0.000 0	- 5.79829	0.000 0	- 5.48723 6	0.000 0	- 5.53062 3	0.000 0	- 5.22849 6	0.000 0
TLT A	-1.67153	0.099 5	-	-	-	-	-	-	-	-
EM	3.56083 2	0.000 7	3.11562 0	0.002 7	2.83065 0	0.006 1	2.85470 9	0.005 7	2.49983 7	0.014 8

SIZE	3.00843	0.003 8	2.69922 9	0.008 8	3.66378 9	0.000 5	3.69324 1	0.000 4	3.27188 6	0.001 7
GDP G	- 0.42650 2	0.671 2	- 0.52175	0.603 6	- 0.02976 0	0.976 3	-	-	-	-
INF	0.72963 3	0.468 3	0.79274 3	0.430 8	1.89980 6	0.061 7	2.01442 0	0.047 9	1.82558 2	0.072 2

As discussed, the main objective of the study is to examine the financial structure as a determinant of the financial performance of investment banks of Pakistan. For this purpose, seven investment banks have been selected for the period from 2006 to 2016. Dependent variables of investment bank performance whose proxy (ROE) Return on asset and independent variables of the financial structure are equity multiplier (EM), equity to total asset (EQTA) measures equity financing. Risk and solvency ratio is measured by total liabilities to total asset ratio (TLTA) and total liabilities to equity ratio (TLER). The efficiency of banks is measured with the proxy operating expense to income ratio (OEIR). Asset management is measured with long term investment to total asset (LITA) ratio. Size of banks is measured with (NLTA). Macroeconomic indicators are the gross domestic product (GDP) and inflation (INF).

4.2 Descriptive Statistics

Table 4.2

Descriptive Statistics														
	ROA	ROE	EQTA	ETLR	LITA	OEIR	OIAR	OETA	TLER	TLTA	EM	SIZE	GDPG	INF
Mean	-5.39634	34.91141	-1.41238	121.7835	15.16041	125.8587	4.162593	5.32571	-802.024	0.799509	1.061759	14.53438	3.879954	10.51766
Median	0.4254	1.701	16.0555	19.065	9.5905	37.39859	5.38161	3.717953	59020.2	0.811539	3.540133	14.4171	4.396457	7.411553
Maximum	37.2318	2857.292	97.1352	2226.703	56.0697	4560.731	17.24123	53.7236	2981686	3.061604	55.6191	16.31843	6.177542	20.66652
Minimum	-160.36	-449.281	-1215.56	-397.033	0.0985	-3665.96	-35.8597	-3.05751	-1.4E+07	0.043623	-240.46	9.962511	1.606692	0.545966
Std. Dev.	25.67247	345.2936	159.6887	395.4636	14.21839	928.5307	6.653672	6.543675	1698407	0.410802	29.16882	1.09785	1.448356	6.512162
Skewness	-4.51227	7.212507	-6.45045	3.788663	1.202864	0.586708	-3.09099	5.471822	-7.65489	2.155056	-7.41921	-1.30107	-0.19703	0.33203
Kurtosis	26.43047	59.66042	46.97525	17.54528	3.559761	14.01085	19.03886	40.24739	65.29919	14.13577	62.83984	7.048323	1.870407	1.830038
Jarque-Bera	2022.627	10967.64	6738.32	862.981	19.57361	393.3923	947.9407	4835.381	13204.15	457.4518	12194.83	74.30518	4.591964	5.806397
Probability	0.00000	0.00000	0.00000	0.00000	0.00006	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.10066	0.05485
Sum	-415.518	2688.179	-108.753	9377.327	1167.352	9691.12	320.5196	410.0797	-61755.9	61.56221	81.75541	1119.147	298.7564	809.8595
Sum Sq. Dev.	50089.75	9061306	1938036	11885752	15364.36	65524858	3364.622	3254.296	2.19E+14	12.8256	64662.32	91.60079	159.428	3223.027
Observations	77	77	77	77	77	77	77	77	77	77	77	77	77	77

4.3 Stationary

Table 4.3

Variables	Levin, Lin & Chu test						Im, Pesaran and Shin W-stat						ADF - Fisher Chi-square						Result
	Level		First Difference		Second Difference		Level		First Difference		Second Difference		Level		First Difference		Second Difference		
	t-stat	p-value	t-stat	p-value	t-stat	p-value	t-stat	p-value	t-stat	p-value	t-stat	p-value	t-stat	p-value	t-stat	p-value	t-stat	p-value	
ROE	-0.3728	0.3546	-0.8969	0.1849	-4.8828	0	0.69757	0.7573	0.35422	0.6384	0.72304	0.2348	7.37941	0.9191	11.9283	0.6121	25.5987	0.0291	I(2)
EQTA	-92.0977	0.0000	-45.0557	0.0000	-11.8864	0.0000	-14.2761	0.0000	-5.53851	0.0000	-2.09838	0.0179	31.5107	0.0047	30.9343	0.0057	32.6873	0.0032	I(0)
ETLR	-33.8137	0.0000	-18.0023	0.0000	-2.01299	0.0221	-4.04968	0.0000	-2.07059	0.0192	-0.83663	0.2014	24.8369	0.0362	31.8855	0.0042	26.7784	0.0206	I(2)
LITA	-6.774	0.0000	-8.03912	0.0000	-16.0694	0.0000	-0.88671	0.1876	-0.81177	0.2085	-2.02111	0.0216	24.6637	0.0380	24.8744	0.0358	41.7853	0.0001	I(2)
OEIR	-4.33844	0.0000	-9.00685	0.0000	-9.27171	0.0000	-0.2755	0.3915	-2.25431	0.0121	-4.59743	0.0000	17.9991	0.2068	41.7626	0.0001	64.1052	0.0000	I(1)
OIAR	-46.2004	0.0000	-14.5024	0.0000	-7.5323	0.0000	-6.70299	0.0000	-3.02283	0.0013	-2.32003	0.0102	29.7292	0.0083	46.4508	0.0000	46.6792	0.0000	I(0)
OETA	-9.7144	0.0000	-2.91797	0.0018	-7.14375	0.0000	-0.53824	0.2952	-0.14432	0.4426	-0.66897	0.2518	21.9016	0.0807	16.9699	0.2578	22.5992	0.0671	I(0)
TLER	-26.7568	0.0000	-8.68207	0.0000	-2.88783	0.0019	-3.80124	0.0001	-2.1679	0.0151	-1.71341	0.0433	31.0186	0.0055	40.9485	0.0002	37.7167	0.0006	I(0)
TLTA	-16.7708	0.0000	-9.14003	0.0000	0.95669	0.8306	-2.80135	0.0025	-1.14308	0.1265	-0.35889	0.3598	36.6642	0.0008	28.7928	0.0111	19.5697	0.1443	I(0)
EM	-10.5632	0.0000	-4.45485	0.0000	1.68099	0.9536	-1.33799	0.0904	-0.79881	0.2122	-0.59809	0.2749	28.2181	0.0133	24.0514	0.0452	22.4919	0.0691	I(0)
SIZE	-30.2163	0.0000	-10.4225	0.0000	-1.85774	0.0316	-4.46389	0.0000	-1.5575	0.0597	-0.41965	0.3374	31.9900	0.0040	36.3781	0.0009	21.6074	0.0870	I(0)
GDPG	-17.6151	0	-0.98831	0.1615	20.1286	1.0000	-5.39825	0.0000	-0.26793	0.3944	-0.09187	0.4634	74.6069	0.0000	16.3945	0.2899	15.2385	0.3620	I(0)
INF	-3.06668	0.0011	-3.48897	0.0002	-15.3441	0.0000	0.24122	0.5953	-1.8223	0.0342	-3.58669	0.0002	9.65282	0.7871	38.7293	0.0004	65.4260	0.0000	I(1)

Any random pattern of data of each variable is plotted on timeline called stationary of data. When data shows an upward or downward trend portrays on stationery of data. To transform non-stationary data into stationary data there is always unit root test need to be applied. Stationary data can be transformed at a level or at first difference. Reason for applying unit root test is that non-stationary data provides spurious regression that cannot be acceptable for reliability and validity for predictions. In addition, non-stationary data may create multiple problems such as autocorrelation and multicollinearity. To avoid such sort of problems in data, multiple unit root test are available so ADF Fisher test is applied for exploring stationary of data. Each independent and dependent variable is tested individually at a level and at first difference. Its result is summarized in above table 4.3, detailed results are annexure in the appendix. In accordance with the hypothesis of unit root test, there are multiple methods to check stationary.

If the absolute test statistics is more than the critical value, then we can reject the null hypothesis but if the absolute test statistics is less than the critical value, then we cannot reject the null hypothesis rather we accept the null hypothesis. The null hypothesis for the ADF Test can be like y has a unit root that means the variable is not stationary. An alternative hypothesis for ADF Test is y has not a unit root that means the variable is stationary. If the P value is less than 5% we can reject the null hypothesis and accept alternative

hypothesis but if the P value is more than 5% we cannot reject the null hypothesis rather we accept the null hypothesis. As shown in table P value at the level of all the variables in the majority of all test is significant except Inflation (INF).

4.4 ESTIMATION THROUGH STOCHASTIC MODEL

$$Y = ROE = \beta_0 + \beta_1 EQTA_{bt} + \beta_2 OEIR_{bt} + \beta_3 TLER_{bt} + \beta_4 EM_{bt} + \beta_5 SIZE_{bt} + \beta_6 INF_{bt} + \varepsilon_{it}$$

4.5 Fixed Effect Model or LSDV MODEL

Table 4.5 (Model 5)

Dependent Variable: ROE

Method: Panel Least Squares

Date: 02/23/19 Time: 14:41

Sample: 2006 2016

Periods included: 11

Cross-sections included: 7

Total panel (balanced) observations: 77

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1043.109	382.8780	-2.724391	0.0083
EQTA	-0.251921	0.155528	-1.619773	0.1102
OEIR	0.005882	0.017000	0.346003	0.7305
TLER	-0.000368	7.92E-05	-4.648040	0.0000
EM	10.63027	4.624556	2.298658	0.0248
SIZE	70.76976	26.79533	2.641123	0.0104
INF	3.493945	2.469422	1.414884	0.1619

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.892085	Mean dependent var	34.91141
Adjusted R-squared	0.871851	S.D. dependent var	345.2936
S.E. of regression	123.6079	Akaike info criterion	12.62485
Sum squared resid	977851.1	Schwarz criterion	13.02055
Log-likelihood	-473.0566	Hannan-Quinn criter.	12.78313
F-statistic	44.08826	Durbin-Watson stat	1.831522
Prob(F-statistic)	0.000000		

As discussed above that which stochastic model is appropriated and the best fit on data, fixed or random effect, Hausman test is applied on panel data, from above table 4.5 P value is above 0.05, therefore, we can accept the null hypothesis that is random effect model is appropriated therefore it can be concluded that the random effect model is appropriated and suitable and best fit to data.

4.6 Hausman Test

Table 4.6

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.911619	6	0.6886

** WARNING: estimated cross-section random effects variance is zero.

4.7 Random Effect Model Results and Hypothesis testing

Table 4.7

Dependent variable (Profitability) ROE

Variable	Coefficient	St. Error	t- statistics	Probability
C	-880.3007	264.1913	-3.332058	0.0014
EQTA	-0.231157	0.114336	-2.021735	0.0470
OEIR	0.014845	0.016115	0.921186	0.3601
TLER	-0.000359	6.97E-05	-5.152527	0.0000
EM	10.02275	4.068476	2.463515	0.0162
SIZE	59.04389	18.31189	3.224346	0.0019
INF	4.175969	2.321200	1.799056	0.0763

As shown in above table 4.7, Random effect model is applied to summarize all the results. Bank performance (ROE) has been taken as the dependent variable and EQTA, OEIR, TLER, EM, SIZE, and INF are independent variables. All hypothesis has been tested at a 5% level of significance.

H₁: Equity to total asset is positively related to profitability

As shown in an above table P value of EQTA is 0.0014 that is less than 0.05 that indicates that there is a significant and sound impact of EQTA on investment banks profitability therefore null hypothesis is rejected and the alternative hypothesis is accepted. Since the coefficient is negative that shows an inverse relationship between profitability and asset management ratio.

H₂: Operating expense is positively related to profitability

As shown in above table P value of OEIR is 0.3601 that is more than 0.05 that indicates that there is not a significant and sound impact of efficiency on investment banks profitability therefore null hypothesis is failed to reject an alternative hypothesis that is There is a positive and significant impact of efficiency on profitability is not accepted. Since coefficient is positive that shows the relationship between profitability and efficiency. It can be concluded that only controlling banks operating expenditure cannot increase banks' profitability.

H₃: Total Liability to equity ratio is positively related to profitability

As shown in above table P value of TLER is 0.0000 that is less than 0.05 that indicates that there is a significant and sound impact of total liabilities to equity ratio on investment banks profitability therefore null hypothesis is rejected and alternative hypothesis that is There is negative and significant impact of debt management ratio on profitability is accepted. Since coefficient is negative that shows inverse relationship between profitability and total liabilities to equity ratio.

H₄: Equity multiplier is positively related to profitability

As shown in an above table P value of EM is 0.0162 that is less than 0.05 that indicates that there is a significant and sound impact of equity multiplier on investment banks profitability therefore null hypothesis is rejected and the alternative hypothesis is accepted. Since the coefficient is positive that shows the relationship between profitability and equity multiplier.

H₅: Bank size is positively related to profitability

As shown in an above table P value of NLTA is 0.0019 that is less than 0.05 that indicates that there is a significant and sound impact of the size of the bank on investment banks profitability therefore null hypothesis is rejected and the alternative hypothesis is accepted. Since the coefficient is positive that shows the relationship between profitability and bank size. Results of Athanasoglou et al (2008) are the same confirming previous findings.

H₀₆: Inflation is positively related to Profitability

As shown in above table, P value of INF is 0.0763 that is more than 0.05 that indicates that there is not a significant and sound impact of INF on investment banks profitability therefore null hypothesis is failed to reject, and an alternative hypothesis is not accepted. Since coefficient is Positive that shows a positive relationship between INF and profitability.

Table 4.8

Effect Specification**Cross Section Random Effect**

R-squared	0.885373	Mean dependent variable	34.91141
Adjusted R-squared	0.875548	S.D of the dependent variable	345.2936
S.E of Regression	121.8120	Sum squared resid	1038671
F- statistic	90.11269	Durbin- Watson stat	1.776494
Probability- (f-statistic)	0.000000		

As shown in above table R^2 is 88.53% that indicates investment banks performance or probability is explaining 88.53% by all independent variables.

R^2 is the main determinant of the stochastic model to predict the results by the statisticians. Since R^2 is near to 1 that is much higher 88.53% tells that variables are truly relevant. Durbin Watson value is more than R^2 also indicates the best fit model. In addition to the model explanation, the effectiveness of the model can be revalidated with f-statistics value 90.11269 that is above 4 and P value of f-statistic is less than 5% that is 0.00000.

4.8 Diagnostic Test

The diagnostic test applied to the panel data to validate conformity with multiple regression techniques to ensure the results are more robust and significant.

4.9 Multicollinearity

Table 4.9

Correlation														
	ROA	ROE	EQTA	ETLR	LITA	OEIR	OIAR	OETA	TLER	TLTA	EM	SIZE	GDPG	INF
ROA	1	-0.0311	0.885232	0.221684	-0.03697	0.051502	0.743968	-0.76053	0.051497	-0.70311	0.054986	0.573405	-0.06792	-0.10994
ROE	-0.0311	1	-0.00901	-0.03232	-0.11123	-0.01147	0.017206	-0.06923	-0.92445	0.071229	-0.91205	0.110571	-0.15876	0.041609
EQTA	0.885232	-0.00901	1	0.315193	0.0192	0.061057	0.801707	-0.85616	0.011934	-0.83238	0.022077	0.526435	-0.16036	-0.01245
ETLR	0.221684	-0.03232	0.315193	1	0.049273	0.308409	0.13745	-0.09488	0.006896	-0.61603	0.009126	-0.21275	0.119907	-0.23126
LITA	-0.03697	-0.11123	0.0192	0.049273	1	0.026452	0.105179	-0.04242	0.098115	-0.19057	0.102016	-0.08924	0.006161	0.173557
OEIR	0.051502	-0.01147	0.061057	0.308409	0.026452	1	-0.11858	-0.01001	-0.00555	-0.15556	-0.0105	-0.18357	0.166972	-0.14377
OIAR	0.743968	0.017206	0.801707	0.13745	0.105179	-0.11858	1	-0.79103	0.054785	-0.63463	0.041396	0.633726	-0.22179	0.247207
OETA	-0.76053	-0.06923	-0.85616	-0.09488	-0.04242	-0.01001	-0.79103	1	0.002449	0.570364	0.0105	-0.67174	0.133626	-0.19233
TLER	0.051497	-0.92445	0.011934	0.006896	0.098115	-0.00555	0.054785	0.002449	1	-0.03985	0.990757	-0.00328	0.129587	0.06745
TLTA	-0.70311	0.071229	-0.83238	-0.61603	-0.19057	-0.15556	-0.63463	0.570364	-0.03985	1	-0.05063	-0.11319	0.085555	0.08741
EM	0.054986	-0.91205	0.022077	0.009126	0.102016	-0.0105	0.041396	0.0105	0.990757	-0.05063	1	-0.04821	0.144299	0.041599
SIZE	0.573405	0.110571	0.526435	-0.21275	-0.08924	-0.18357	0.633726	-0.67174	-0.00328	-0.11319	-0.04821	1	-0.27116	0.272672
GDPG	-0.06792	-0.15876	-0.16036	0.119907	0.006161	0.166972	-0.22179	0.133626	0.129587	0.085555	0.144299	-0.27116	1	-0.34168
INF	-0.10994	0.041609	-0.01245	-0.23126	0.173557	-0.14377	0.247207	-0.19233	0.06745	0.08741	0.041599	0.272672	-0.34168	1

CONCLUSION & RECOMMENDATION

The aim of this study was to fill the gap which is excessively uncommon and can be helpful for assessing the performance of investment banks of Pakistan for this study secondary data by state bank of Pakistan were used seven investment banks of Pakistan were selected over the period of 2006 to 2016.

The research was conducted for eleven years, the period was selected from 30 June 2006 to 30 June 2016. For analyzing mean, median and standard deviation descriptive statistics were made. Level of stationary has been tested and discussed. To avoiding rigorous results and determining appropriate OLS model Hausman test applied and random effect model was run. Diagnostic tests were applied and consist of multicollinearity test and serial correlation. Return on equity whose proxy was ROE is selected as the dependent variable of banks performance and EQTA, OEIR, TLER, EM, SIZE, and INF are the independent variable

The conclusion was drawn on the basis of drawn conclusions in this chapter. Recommendations also have given to achieve study objectives as discussed conclusion is bring into line with the corresponding hypothesis.

5.1 Effect Of Equity To Total Asset Ratio Of The Investment Banks Of Pakistan

It is evident from chapter four, Equity financing has a significant impact on investment banks performance and holding negative relationship so it can be concluded that larger percentage of assets that would be claimed by its shareholder is owned by investments banks and its shareholder. It is supported by Abdus Samad (2015).

5.2 Effect Of Operating Expense To Equity Ratio On Profitability Of The Investment Banks Of Pakistan

As discussed in chapter 4, It is evident that the efficiency ratio has an insignificant association with profitability as well as a positive impact on the bank's performance of the bank. It may be concluded that for investment banks of Pakistan, controlling operating expenditure does not exceed the level of performance of investment banks, there may be other factors too.

5.3 Effect Of Total Liabilities To Equity Ratio On Profitability Of The Investment Banks Of Pakistan

As discussed from the findings of chapter four, total liabilities to equity (TLER) is a risk and solvency ratio total liabilities to equity (TLER), it is significant and positively associated with investment banks performance. It can be concluded that negatively association of TLER with the profitability of investment banks of Pakistan are at a lower risk.

5.4 Effect Of Equity Multiplier On Profitability Of The Investment Banks Of Pakistan

As discussed from the findings of chapter four, equity multiplier (EM) is a risk and solvency ratio. EM has significant and Positive relationship with the profitability of investment banks. So it can be concluded that banks are taking debt to buy their assets.

5.5 Effect Of Size On Profitability Of The Investment Banks Of Pakistan

As discussed in chapter four, it is evident that the size of investment banks has significant as well as the positive impact on the bank's performance of the bank. It may be concluded that for investment banks of Pakistan, size of bank may have a positive impact on the performance of bank. Our findings are supported by Molyneux & Thornton (1992), Gennay (1999) Bikker & Hu (2002), and Goddard et al. (2004).

5.6 Effect Of Inflation On Profitability Of The Investment Banks Of Pakistan

As discussed from the findings of chapter four, INF is significant and positively associated with the performance of investment banks of Pakistan. The results are opposite in line with Demirgüç Kunt & Huizinga (1999). Imad. Z. Ramadan (2011), Naceur (2003). Perry (1992) examined and found inflation depends on the accuracy of antedating the inflation. The result showed a positive and insignificant impact on ROE. This can be concluded that investment banks lose an opportunity to get benefit from the inflationary environment to increase profitability due to the inability of banks to accurately predict the level of inflation.

5.7 Recommendations

On the basis of our results discussed as above, the following are the recommendations for Investment banks of Pakistan

- Investment banks need to focus on more debt financing comparatively to equity financing in order to enhance their performance.
- Investment banks also should emphasis on increasing its current and fixed assets to increase its size. Size has a significant impact on profitability.
- Investment banks should try to increase the equity multiplier ratio, as EM ratio shows that the bank is relying on debt financing that may also increase cash flow. Investors are always interested in banks cash flow to ensure whether the bank can meet its financial obligations and their investments are in safe hand.

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