

Impact of financial leverage on firm's profitability: An investigation from the banking sector of Pakistan

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Abstract

The motive of this research is to find out that is there any impact of financial leverage on firms' profitability which is the banking sector. It has been noticed that limited researches are available in the banking sector of Pakistan. Convenient sampling technique is used to identify the impact of firms' profitability on the data gathered from annual reports of 10 private banks from 2007 – 2016. Eviews system is used to regress the model. From the outcome, we determined that there is a significant relationship between ROA, ROE with Leverages which means that financial leverages have a significant impact on firms' profitability.

Keywords: ROA, ROE, Leverage.

1. INTRODUCTION

In this present day corporate period, each organization makes effort to persist the intense rivalry. Decision making for the choice of capital structure has turned out to be a standout amongst the most challenging and demanding tasks for the survival of a firm. Proper capital structure has a significantly important part for any firms who want to increase their growth (Abor, 2005). Risk-taking is unavoidable for management when they want to evade any vital threats. In this way, management must consider the cause and effect relationship, search for any distinct solution that helps the management to make an appropriate and adequate decision that must focus systematic approach, otherwise any immature decision may lead the firm to destruction. (Jensen & Meckling, 1976).

The cause and effect relationship between financial leverage and profitability of an organization has been a focal point of consideration for some

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analysts for the last 25 years. There is a contrast of belief and acceptance amongst many analysts about the function of debt, few researchers found and establish an inverse relationship like Abor (2005), and some research extracts positive relationship of debt with profitability like Margaritis & Psillaki (2010) whereas some researcher found mix relation like Weill (2008).

The role of a bank in the country's economy is very vital and important if any changes and deviation found in the structure of a bank can affect the banks' competitiveness amongst other banks (Black & Strahan, 2002). The motive of the study is to understand the impact of financial leverage (debt) on bank's profitability (ROA), of the top ten private banks in Pakistan including ASKARI, ALLIED, BANK ALFALAH, BANK ALHABIB, FAYSAL BANK, HBL, HMBL, MCB, MEEZAN, and UBL.

The main reason of this research is to study the impact of financial leverage (debt) on bank's profitability (ROA, ROE) we examine the relationship between degrees of assimilation of banks profitability (ROA, ROE) along with the variance and changes in debt (financial leverage) over some time. Financial statements of the top 10 private banks for the year 2007 to 2016 were gathered from available published data of these different bank's websites.

Statement of the Problem

To investigate either there is any impact of debt on the bank's profitability (ROA & ROE) related to the private banking sector of Pakistan.

Research Objectives

The purpose and motive of this study are to observe and investigate how debts impact the profitability of banks such as ROA and ROE by using a different analytical tool to measure the impact of debts.

Research Question

1. How debts impact the profitability of banks?
2. What is the relationship between the ROA and ROE with leverage?

Research Scope

The research aims to analyze the impact of debts on a bank's profitability.

The section employed in the present research is based on secondary data extracted from annual reports of the top 10 banks from 2007-2016.

Literature Review

Many researches have already been conducted on the company's financial debt and its impact on a company's profitability. Abor (2005) researched bank's profitability including 175 observations of 35 top European banks over the period 2009-2013. Considering Net Interest Margin (NIM), Return on Assets (ROA) & Return on equity (ROE) as dependent variables & Total assets of a bank representing bank's size (SIZE), Ratio of equity to total assets representing capital strength (CAP), loans to total assets (LOAN), total deposits to total assets (DEP), Asset quality expressed as the ratio of loan loss provisions over total loans (LLP) as independent variables. All the regressors included in the model have a significant impact on the bank's profitability. Saying that the performance of the European banks was at high and growing significantly, regardless of global financial crises that affected the economic world since 2008.

Habib et al. (2016) also researched 340 non-financial sectors of the KSE 100 index in Pakistan, using random effect regression analysis. Results reveal that there is a negative relationship between independent variables which is short term, long term debt and total debt to assets means the higher the debt lower the profitability, saying that the proper dimension of capital structure has significant vital importance in the success of a company. The accurate percentage of debt along with equity in capital structure will help the firm to increase its profitability.

Abor (2005) conducting research on banking concentration and their impact on firm's leverage including 5,779 firms with a combined total of 48,280 no. of observations over the period from 2006 to 2013, considering firm's leverage as the dependent variable drive from book leverage, market leverage, and Firm size, Asset tangibility, Firm profitability, Firm growth rate Non-debt tax shields as independent variables. Using regression analysis (two-step system general method of the moment). The result shows a positive relationship between all the determinants variable (banking concentration) and firm leverage as firms are more concentrated they face lower financing hindrances.

Abor (2005) wants to determine the firm's capital structure by using 1481 non-financial firms which are listed in Chinese stock exchange in the year of 2011. Considering capital structure as a dependent variable in terms of the market value of debt and equity and independent variables is the ratio of total debt to total assets by market value or book value. The ratio of long-term debt to the total asset by market value or book value. Size of the firm (Size). Growth opportunity (Grow). Intangibility (INTANG) Tax shields effects (Tax) & Ownership structure (OS). The study suggested that a large firm mainly focuses on debt financing and lucrative firms depend on internal capital growth. Further, they said the firm's size positively affect the capital structure, firms that have more growth opportunity face excessive leverage ratio but they use less long term debt.

Abor (2005) conducting the research by using 22 firms that are listed in GSE (1998-2002) considering ROE (dependent variable), SDA which is determined by short term debt divided by total capital. LDA which is determined by long term debt divided by total capital, DA which is determined by total debt divided by total capital, Size which is the log of sales, SG growth of sales, (Independent variables) from the result he concluded that there a negative relationship between LDA and ROE and there is a positive relationship between ROE and SDA researcher saying that the decision for the capital structure is vital, the decision is too much important as the organization need to capitalize and maximize the firm's yields, as well as this decision, makeable the government to deal with competitive circumstances.

Habib et al. (2016) want to know the relationship between capital structure and performance of Islamic banks. From which they took the data of 85 Islamic banks which is a structure in 19 countries using income statement and balance sheet from 2003 to 2008. Considering ROE, ROA & non-interest margin (NIM) & capital ratio for bank and independent variables are Macro-economic variables for the country, it includes (Real GDP growth and inflation), Financial market structure variables, (ratio of total assets of the deposit money banks divided by GDP and the ratio of stock market capitalization to GDP), Taxation indicators which include the required reserves of the banking system (RES), Local market effects in-country, results show Islamic Banks' performance interim of profitability respond positively against

the increase in equity this indicates that sufficient capital ratio can play a significant role for enhancing Islamic banking performance, equity is considered as a cheaper source when Islamic banking focuses on financing and it can also provide sufficient guidance to the manager of Islamic banking in raising of capital.

Habib et al. (2016) want to identify the impact of profitability and leverage on economic efficiency firms by using a sample size of 667 non-financial firms from Malaysia up to 2013, considering the price of the firm's equity or market value as the dependent variable and independent variables are Earnings per share, Book value and Vector variable including other important variables. The shareholders can play a vital part in establishing the firm real value as some investors have a desire to maximize the firm's wealth while making their investment decision. Further saying that a decrease in internal like environmental cost will just prompt a higher external cost like shareholder cost result all things considered firms may be seen to have higher liability and risk which could decrease the firm's esteem.

Habib et al. (2016) conducted a research in which they want to identify the relation amongst firm's leverage, firm's dynamic performance and financial crises by using a sample size of 18 industrial sectors of 400 firms which are listed on the stock exchange for the period of 2004-2012 of Qatar, considering dependent variable as Return on Asset (ROA) and the market perspective using Tobin's Q and independent variables are Leverage the ratio, Company size (SIZE), Growth in sales, Risk & Tangibility using Generalized Method of Moment as a statistical tool. Result produce form GMM shows that firm's leverage is a major regressor and determinant of firm's performance as financial crises hurt firm's performance in GCC) (Gulf Cooperation Council) countries, firms in GCC countries must find a proper and appropriate capital structure that helps the firms to enhance and maximize the firm's performance.

According to the research of Titman & Wessels (1988) which took the data from 459 firms from 1974 -1982. From findings, they conclude that firms usually have a lower debt ratio which took a high cost on labor, customer, and suppliers. Furthermore, they concluded that short term debt negatively associated with the firm's size.

RESEARCH METHOD

Hypotheses

- H1. Debt ratio has a significant impact on the bank's profitability.
 H2. There is a significant relationship between ROA, ROE with Leverage.

Research Design

Data

This research study is consisting of secondary data gathered from the official website of banks to know about the influence of financial leverage on firms' profitability.

Variables

In this research, three variables are identifying which Return on Assets and return on equity as the dependent variable and Leverage as Independent Variable.

Inclusion Criteria

The nature of the study is a convenient sampling technique which is the statistical technique in which data is drawn from those banks that are very easily available and can be volunteered due to their ease of access.

Sampling Design

Population

The relevant data for this research will be collected from official websites of banks.

Sampling Technique

S. NO.	BANKS
01	ASKARI BANK
02	ALLIED BANK
03	BANK ALFALAH
04	BANK AL-HABIB
05	FAYSAL BANK
06	HABIB BANK LIMITED
07	HABIB METROPOLITON BANK
08	MCB
09	MEEZAN BANK
10	UNITED BANK LIMITED

The technique used in this study is Regression Analysis. Data will be taken from the official websites of ten banks from 2007 to 2016. The sample size of this study is 10 banks which are:

Statistical Technique:

The techniques used in this study is Linear Regression

ROA01 (Leverage)

ROE01 (Leverage)

Where,

ROE: Return on Equity

ROA: Return on Asset

Correlational Test

As described by (Habib et al., 2016), correlation is a statistical measure of the relationship or association between two variables. A positive relationship shows that both independent and dependent variables rise or decline correspondingly; a negative relationship indicates when one variable increases as the other decreases (Habib et al., 2016)

Pearson's r indices of correlation

Pearson's r	Indication
Between ± 0.80 to ± 1.00	High Correlation
Between ± 0.60 to ± 0.79	moderately high correlation
Between ± 0.40 to ± 0.59	moderate correlation
Between ± 0.20 to ± 0.39	low correlation
Between ± 0.01 to ± 0.19	negligible correlation

Source: (Black, Babin, Anderson, & Hair, 2010)

RESULTS

Eviews was used to test the collected data by using different techniques to serve the basic purpose of this chapter.

Descriptive Analysis

	ROE	ROA	LEVERAGE
Mean	0.183836	0.013388	0.949881
Median	0.202000	0.012350	0.921950
Maximum	0.365500	0.037200	0.952000
Minimum	-0.319200	-0.013600	0.855300
Std. Dev.	0.082030	0.007521	0.026053
Skewness	-2.454618	0.354814	-0.974607
Kurtosis	15.71168	4.995706	3.177916
Jarque-Bera	773.6981	18.69339	15.96288
Probability	0.000000	0.000087	0.000342
Sum	18.38360	1.338800	91.98810
Sum Sq. Dev.	0.666155	0.005600	0.067195
Observation	100	100	100

The descriptive analysis of the sample is done by using Eviews, the following table shows the coefficients which represent the sample.

Interpretation

The above table shows the summarized approximate results of sample data and period. The answer of coefficients enables us to overview measures of central tendency, measures of dispersion and measures of variability, and spread of the companies under analysis for the period of ten years from 2007 to 2016.

1. Mean values of accounting performance indicators e.g. Return on Assets and Return on equity are 0.18 and 0.013.

Correlation

The correlation matrix of the sample is done by using Eviews, the following table shows the correlation coefficients which shows the relationship between variables

Covariance Analysis: Ordinary
 Date: 08/30/17 Time: 07:54
 Sample: 2007 2016
 Included observations: 100

Correlation	ROE	LEVERAGE
ROE	1.000000	
LEVERAGE	-0.338451	1.000000

Interpretation

Since correlation shows the degree of relationship between the variables which is leverage has a low correlation with ROE with the r-value of -0.338

which falls under the range of 0.20 to ± 0.39 (Habib et al., 2016)

Covariance Analysis: Ordinary
Date: 08/30/17 Time: 07:56
Sample: 2007 2016
Included observations: 100

Correlation	ROE	LEVERAGE
ROA	1.000000	
LEVERAGE	-0.82143	1.000000

Interpretation

Since correlation shows the degree of relationship between the variables which is leverage is highly correlated with ROA with the r-value of -0.82 which falls under the range of 0.80 to ± 1.00 (Hair et al., 2005),

Regression

The regression analysis is performed on data by using Eviews, following tables shows the results

ROA as a Dependent Variable

Dependant Variables
Method: Panel Least Squares
Date: 08/18/17 Time: 23:38
Sample: 2007 2016
Periods included: 10
Cross-sections included: 10
Total panel(balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.231521	0.015304	15.12807	0.0000
LEVERAGE	-0.237131	0.016630	-14.25892	0.0000
R-squared	0.674761	Mean dependent var		0.013388
Adjusted R-squared	0.671442	S.D. dependent var		0.007521
S.E. of regression	0.004311	Akaike info criterion		-8.035536
Sum squared resid	0.001821	Schwarz criterion		-7.983433
Log likelihood	403.7768	Hannan-Quinn criter.		-8.014449
F-statistic	203.3168	Durbin-Watson stat		0.845941
Prob(F-Statistic)	0.000000			

Interpretation

$$ROA = \beta_0 + \beta (\text{Leverage}) +$$

$\beta_0 = 0.23$	When all the variable which is leverage is assumed 0 then return on assets will be 23% on average.
$\beta \text{ Leverage} = -0.23$	When leverages increase by one unit, then return on assets will decrease by 0.23% on average. When all the other variables are held constant.
t-value= 2.63	Since $t=14.25 > 2$, therefore the relationship between Leverage and ROA is significant at $\alpha=0.05$.
Adj R2=0.67	Around 67% of variations in Return on Assets can be explained by leverage, therefore if we want to forecast return on assets based on the above-mentioned variable then we will get 67% accuracy in our results. The model is quite useful but it also contains a lot of variabilities.
F-Value = 203.31	Since f-value = 203.31 > 3.5 therefore there is a significant relationship between return on assets and Leverage at $\alpha=0.05$.

ROE as a Dependent Variable

Dependant Variables: ROE
 Method: Panel Least Squares
 Date: 08/18/17 Time: 23:45
 Sample: 2007 2016
 Periods included: 10
 Cross-sections included: 10
 Total panel(balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.164112	0.275419	4.226695	0.0001
LEVERAGE	-1.065655	0.299288	-3.560630	0.0006
R-squared	0.114549	Mean dependent var		0.183836
Adjusted R-squared	0.105514	S.D. dependent var		0.082030
S.E. of regression	0.077581	Akaike info criterion		-2.255184
Sum squared resid	0.589848	Schwarz criterion		-2.203080
Log likelihood	114.7592	Hannan-Quinn criter.		-2.234097
F-statistic	12.67809	Durbin-Watson stat		1.129570
Prob(F-Statistic)	0.000573			

Interpretation

$$ROE = \beta_0 + \beta (\text{Leverage}) +$$

$\beta_0 = 1.161$	When all the variable which is leverage is assumed 0 then return on equity will be 1.16% on average.
$\beta \text{ Leverage} = -1.06$	When leverages increase by one unit, then return on equity will decrease by 1.06% on average. When all the other variables are held constant.
t-value= 3.56	Since $t=3.56 > 2$, therefore the relationship between Leverage and ROE is significant at $\alpha = 0.05$.
Adj R ² =0.10	Around 10% of variations in ROE can be explained by leverage, therefore if we want to forecast return on assets based on the above mentioned variable then we will get 10% accuracy in our results. The model is quite useful but it also contains a lot of variabilities.
F-Value = 12.67	Since f-value = 12.67 > 3.5, therefore, there is a significant relationship between return on assets and Leverage at $\alpha = 0.05$.

Discussion:

In this research 10 years' data, 2007-2016 is extracted from the top 10 banks. Which are Askari, Allied, bank al Falah, bank al Habib, Faysal Bank, HBL, HMBL, MCB, Meezan, and UBL the three variables are used in this research which is ROA, ROE and leverages. ROA and ROE are a key indicator to measure profitability while leverage is used to measure the debt of the banks. Different statistical techniques are used in this research which are descriptive analysis, Correlation Analyses, and regression analyses to check whether the debt is important or not for any company's profitability. From the descriptive analysis, we check that the mean value of ROA and ROE are 0.18 and 0.013 means the overall average of 10 banks 0.18 and 0.013 respectively. From the Correlation result, the findings suggest that there is a significant relationship between the independent and dependent variables. Lastly, regression analyses are run and from sig value result is observed and proves that company profitability is depending on company debt. The previous studies of Habib et al. (2016) also have the same results which they have concluded that there is a significant negative relationship between a firm's profitability and leverage.

CONCLUSION

A proper capital structure certainly has an important role in firm success. Two key and major sources for finance in a firm are equity and debt. It is a management decision and choice to use an adequate proportion of debt and

equity. On one hand, debt will make the firm able to do those activities that would not be possible without debt but on the other hand, firms would also face high risk due to a high proportion of debt.

This study examined the relationship between debt ratio and its impact on bank's profitability (ROA, ROE) of the top 10 private banks in Pakistan. From the result, we concluded that there is a significant relationship between ROA and Leverages the same as ROE and leverages which means that financial leverages have a significant impact on a firm's profitability.

Limitations

This study consists of some limitations as this research is done only in the banking sector so these limitations provide a basis for future studies.

Future research recommendations

The sample period of 10 years of banks in a specific country, the results may not represent the complete picture and may not be appropriate for the entire world.

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NO.	Banks	Year	ROE	ROA	Leverage
69	HMBL	2015	0.2314	0.0157	0.9248
70	HMBL	2016	0.1647	0.0116	0.9245
71	MCB	2007	0.3361	0.0372	0.8657
72	MCB	2008	0.2943	0.0347	0.8683
73	MCB	2009	0.2482	0.0306	0.8587
74	MCB	2010	0.2369	0.0296	0.8563
75	MCB	2011	0.2382	0.0294	0.8604
76	MCB	2012	0.2325	0.0275	0.862
77	MCB	2013	0.2191	0.0267	0.8594
78	MCB	2014	0.225	0.0263	0.8553
79	MCB	2015	0.2172	0.0245	0.8607
80	MCB	2016	0.1846	0.0206	0.8644
81	MEEZAN	2007	0.1684	0.0143	0.9151
82	MEEZAN	2008	0.098	0.0073	0.9299
83	MEEZAN	2009	0.1708	0.0134	0.9186
84	MEEZAN	2010	0.1617	0.012	0.9218
85	MEEZAN	2011	0.2181	0.0151	0.9265
86	MEEZAN	2012	0.2264	0.0128	0.9396
87	MEEZAN	2013	0.2209	0.012	0.9426
88	MEEZAN	2014	0.1964	0.0104	0.9454
89	MEEZAN	2015	0.1818	0.0095	0.9446
90	MEEZAN	2016	0.2124	0.01	0.9476
91	UBL	2007	0.3655	0.0234	0.92
92	UBL	2008	0.1874	0.0136	0.9204
93	UBL	2009	0.1697	0.0148	0.8949
94	UBL	2010	0.1724	0.0152	0.8966
95	UBL	2011	0.2013	0.0184	0.8936
96	UBL	2012	0.2296	0.02	0.8941
97	UBL	2013	0.2066	0.0182	0.8973
98	UBL	2014	0.2355	0.0203	0.8837
99	UBL	2015	0.2373	0.0182	0.8953
100	UBL	2016	0.2262	0.0169	0.9015