

Determinants of Banks Profitability: A Case Study of Afghan Commercial Banks

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Abstract

This study is based on studying the major factors comprises of Earning Assets to Total Assets, Loan to Deposit and Size of firms affecting the profitability in Afghan banks, the views of those various authors and researchers who conducted papers on banks profitability is also considered. The analysis is based on panel data comprised of six Afghan banks over the periods of (2010 – 2015). As a result of diagnostic test The Fixed effects model is identified and applied to analyze and discuss the results of the data. The results suggest that each of the three variables which are ETA, LTD and size of firm has significant impacts on Afghan banks profitability, with the values of 0.000, 0.048, and 0.057 respectively. The data analyses carried out for this research was to test the hypothesis that whether there is a positive or negative relationship between the variables. The results reveal that there is a positive effect of the independent variables on the dependent variable i.e. earning asset to total asset, loan to deposit and size of firm.

Key words: Assets, Loan, Deposit and Commercial banks

JEL Codes: G20, G23, G28, F52

1. Introduction

As per the banks efficiency and role in economy of a country it is required to pay greater attention toward it in Afghanistan. It is because the banks as financial intermediaries or financial institution can play a significant role. Banks are those parties which can transfer the additional fund from those who are in excess to those who can utilize it in a productive or efficient manner to produce significant return. So as a result it will indirectly affect the economy and wealth of entire country.

The existence of proper and sound financial system can cause significant level of productivity in economy today. Having a healthy and good financial sector in a country is supporting and making the role of banks more important. Therefore the banking system is observed as a vital part in the economy of a country and signifies the essential component in nation's capital. As also stated before Banks in its

Primary roles acts as financial intermediaries in between depositors and lenders, they are the sources/parties which acts as money/loan providers for businesses and also a mean for the central bank (regulator) to implement their monetary policy in a country.

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Because of the significant positions of banks and their importance of their well contribution to the economy of countries, different controllers (governments) apply different regulations to make sure that the continuity of banks are guaranteed to some predictable future of time. The very basic profitability sources of banks are clearly know to everyone which are accepting deposits from customers and granting/providing loans to business or individuals but these are not the only sources of profitability of banks there are many more which are as followings.

The main problem with Afghanistan banks is that there access to international markets is limited due to which they cannot utilize there liquidity more efficiently and effectively. If we give a look to audited financial statements of Afghanistan banks and compare their financial statements to international banks we will come to know that Afghanistan bank's profitability is too low in compare with international ones.

The main reason behind the greater profitability of international banks is due to having multiple sources of investment which are provided by the central banks of those countries. For instance we don't have corresponding banking relationship with the US banks directly, with the help of Afghanistan central bank this distance can be removed as a result of which Afghanistan's banks profitability will increase. The main objectives of the research are to identify the applicable determinants of profitability of Afghanistan banks and too determine those factors which contribute more in banks profitability.

2. Literature Review

The profitability sources of banks are divided into two factors of internal and external. Internal factor belongs to bank's policies and management decisions in making profit. Management effects are the results of differences in bank management objectives, policies, decisions, and actions reflected in differences in bank operating results, including profitability. Management's judgment regarding concentration on portfolio of loan is contributing very well in the performance of bank Zimmerman (1996). Researchers repeatedly relate the better performance of banks to the quality management of banks. The good quality management is measured as per the alertness and governing of senior management (senior officers) in regard of bank performance and policies.

The computations of ratios from balance sheet and income statement for all member banks of US Federal Reserve System is done in study of two-years Haslem (1968, 1969), the results shows that most ratios belong to profitability are Interest paid and received, Wages, Capital ratios and Salaries. He also added that the better management first emphasize on management of expense, management of fund source and finally management of fund use. As a result of many studies it is also concluded that expense control is considered as primary factor of bank profitability. Effective management of expenses creates key and reliable chances for profitability enhancement. To efficiently use the labors and huge changes in salaries and wages can be considered as an important factor of relative profitability. To reduce staff expenses which cause decrease in costs is also related to the profitability as a result of which total operations of bank is reduced. Bourke (1989) in a study concluded that staff expenses seems to negatively affect "ROA" in banks. On the other hand, Molyneux (1993) indicates direct relationship between profitability and staff expenses. He says that firms can generate more profits when it will provide more staff salaries and benefits. External factors influencing bank profitability belongs to factors other than bank's

policies and decisions. Other than the bank structure some outside factors are there which can separate the influence on profitability in banks.

The structure-conduct-performance (SCP) hypothesis, shows that banks in a concentrated markets can extract dominant rents through its ability of offering lower rates on accepting the deposits and charge higher rates on provision of loan. One another relevant theory is relative-market-power hypothesis (RMP), this shows only those firms which successfully differentiate their products and having greater portion of market share are able to enjoy more return and exercising market power in pricing these products (Berger, 1995). Lloyd-Williams et.al. (1994) in instance of Spanish banks in period 1986-1988 found the support for SCP hypothesis. Main conclusion is this that structure-performance relation with banks can be expressed by a two parts relationship. If it actually takes place, banks operating in market overhead some level of concentration generate large profit while those operating below generate fair profit in compare with others.

Efficient-structure (EFS) hypothesis is considered as a challenge to this interpretation. In those industries where various businesses own greater efficiency is not a random event in market concentrations but rather the result. Firms because of their ability of making large profits, increase in size and also market share that usually causes the higher market concentration is indicated by this hypothesis. To differentiate the tow hypotheses, the independent variable market share with positive coefficient which usually supports the EFS hypothesis is added by the past researchers (Smirlock, 1985). Smirlock used factors such as function of market concentration and share, also interaction between market concentration and share for 2,700 unit state banks as a model of bank profitability. But the results depends on where share in market can be measured as a substitute for betterment of bigger firms rather than as a portion of market power. A degree of efficiency has to be added directly in the model as a clear solution to the problem. The efficiency should positively belong to market concentration and share as a required condition for EFS hypothesis to be true.

Some authors [Berger and Hannan (1992), Goldberg and Rai (1996)] have recently tried to observe the effects of the EFS hypothesis concerning the implications of efficacy on market structure. Models including two degrees of efficiency, scale-efficiency and X-efficiency are formulated, to check the structure-performance relationship Berger (1995). Lower costs attained due to either greater management or processes of production explain the direct relationship between concentration and profits. It is found that most literatures on banks indicates that profitability in banks can be expected to increase as the banks provides more loans in relation to some other secure assets. (García-Herrero et al., 2009) As result of holding a larger ratio of loans to assets and as long as rates on loans are left open to banks applying profit, despite the larger operating cost of holding high portfolio of loans, bank's profitability should increase. The higher portfolio of loans in banks usually include with greater liquidity risk getting up form incapability of banks to decrease the liabilities or increases of fund in assets therefor banks having lower percentage of liquid assets is able to make more profit. Kosmidou and Pasiouras (2007), Molyneux and Thornton (1992), Iannotta et al. (2007), Goddard et al. (2004), DeYoung and Rice (2004), Chiorazzo et al. (2008), Barros et al. (2007), Angbazo (1997), Abreu and Mendes (2002) conducted studies and reached to conclusion that there is a direct relationship between profitability and proportion of loans in bank assets and a opposite relationship between profitability liquidity. Profitability is directly

related to proportion of loans in the asset of a bank. There is also an agreement that the profitability of bank have direct relationship to the degree of the assets like poor quality of credit in a bank can have negative effect on its profitability and vice versa. Banks due to increases in doubtful assets which does not increase profit are required to allocate a sufficient portion of its gross margin to support the anticipated credit losses, therefore profitability will be lower. So the development of losses on provision of loan and accepting deposits indicates huge portion of profit in banks. Nieto and Hernando (2007), Rice and DeYoung (2004), Chiorazzo et al. (2008), Aghanasoglou et al. (2008), Sofoklis and Alexiou (2009) and Angbazo (1997)'s papers indicate direct relationship between asset degree and profitability. As a result following hypothesis is formulated.

There is a direct relationship between profitability and characteristics of assets of a bank. (Iannotta et al., 2007; Kasman et al., 2010) the loans include more risk will lead banks to make larger interest earning with a positive effects on profitability. (Mester, 1996) Besides, the loan of higher quality involves more resources dedicated to monitoring loan and credit underwriting which actually causes increase in bank costs. These discussions lead to new hypothesis. Quality of the assets in bank and its profitability are negatively related to one another. Based on the economic theory that bigger size must allow banks to get economies of scale banks expect to have a positive relationship between their size and profitability. Mercieca et al. (2007), Iannotta et al. (2007) Sofoklis and Alexiou (2009)'s papers accept this principle. But there is an agreement in many literatures that the curve of average cost in banks has a U-shape, where medium-sized banks have high efficiency scale in compare with small and large banks. Only small sized banks are seems to have the capability for gaining scale efficiency, and calculated economies seems to be small on order of 5 per cent or lower Berger and Humphrey (1994) . The implication of size cannot be linear because the profitability initially it is increasing and then decreasing with administrative and other reasons Athanasoglou et al. (2008). Large sized banks can also enjoy economies of scope as result of providing related services jointly rather than in separate (for example, banks can use their branch networks to provide mortgage loans and home insurance together). Even though Elsas et al. (2010) also conclude that economies of scope in banks is increasing their profitability. Barros et al. (2007) reached a result that larger and more varied banks have the possibility to perform poorly and proposing that small sized and specialized banks can decrease irregular problems related with provision of loans. The earlier discussions are caused to express two hypotheses of various signs.

In standard banks can expect to experience higher increase in profitability in large sized bank through the economies of scale. But beyond a certain limit of size can cause diseconomies of scale and the size of bank can perform the role of negative determinant for its profitability. It is required to add uncertain impacts of bank size on profitability resulting from probable economies of scope in addition to probable too-big argument for betterment of bigger size. In a situation of low interest rates joined with aggressive struggle among banks can bound the probabilities for banks to create proper prices for providing loans and accepting deposits, to negatively affecting profitability in banks and pressurizing the operating margin. Staikouras and Wood (2003), Thornton and Molyneux (1992), Garcia-Herrero et al. (2009) Huizinga and Demircug-kunt (1999), Vander Vennet and Claeys (2008), Bourke (1989) conducted studies which shows direct relationship between bank profitability and interest rates. In Spain it is assumed a positive relation between the two variables. Usually the earning and disbursements needs

among the firms unequal in an economy. In a combined economy there are two types of firms, one type have interest to own more fund so that they can use while another types tends to have fewer funds to go for borrowing and to use them. As a result of this incompatibility between consumption and savings needs cause a reason for presence of financial markets. Financial markets then connect this gap in, Direct and Indirect financing. In direct financing, creditor directly interact with debtor by getting financial asset provided by debtor to get claim against the debtor (Mishkin, 2012). While indirect financing is the one which represent the main role played by banks where banks acts as bridge to transfer the amount form those who are in excess to those how are in need, banks here acts as financial intermediary among the parties. Banks as financial institution are capable of overcoming problems challenged by entities in capital market via following functions.

Ameyaw and Kakrah (2010) conducted papers of MBGL and GCB from year 1990 to 2009. They reached the result that banks particular variables including bank size, non-interest income and expense were considered significant key factors of profitability in bank however credit risk didn't have significant influence. Bentum (2012) distinguished by discovering the four profit factors in banks changed throughout the worldwide financial crises. He also discovered the indications that macro-economic variables left higher impact on profitability throughout the crisis period whereas bank particular variables had significant influence outdoor the crises period. Eventually, Gyamerah and Amoah (2015) used internal and external figures of commercial banks from 1999 to 2010 in Ghana to define profitability and discovered that cost management in reverse touch profitability whereas credit risk and banks sized directly touched the bank's profitability. Flamini et.al (2009) discussed that credit risk in sub-saharan Africa is considered as a key risk in banks. Credit risk explains the risk that debtor will not pay their loan by deteriorating to do the mandatory payment as per the schedule. It was recognized as a key problem for financial institution and banks in Ghana. PWC (2014) stated banks in Ghana are violent in loan funding practices particularly in between the years 2006 and 2009, and as such hurt large non-payments rates. Large-risk debtor also have a tendency to get benefit out of weak governmental environment and nonappearance central credit reference system for non-payment and borrowings throughout the banks. Wanzenried and Dietrich (2011) claim that when it is predicted that as number of nonpayers inside a loan portfolio is high, it shows a poor credit quality of loans in a bank. The influence of poor credit quality on profitability of banks is negative due to the loss costs of default are expecting to be more for banks with poor asset quality in compare to those of greater asset quality. Constantly Miller and Noulas (1997) similarly argue that credit risk has negative impacts on profitability for the reason that more the risky loans will cause more nonpayment level of loan. Same is the case in Ghana, it is discovered that credit risk has a negative impacts of profitability on commercial banks Amoah and Gyamerah (2015). It is respectively found by Dietrich, Wanzenried and Athanasoglou et al. (2008) in Greece and Switzerland that there is a significant negative effects of variable on profit in banks. On the other hand paper's conducted by Flamini et al. (2009) and Al-Haschimi (2007) showing direct relationship of variable on profitability. In sub-Sahara Africa the direct relationship of credit risk of profit in banks is discovered by using Short term fund and loans to deposit ratio Flamini et al. Liquidity risk is another key issue for banks as in-existence of sound liquidity management causes bank a big failure. Liquidity shows the ability of entities/firms to pay its liability or financial obligations as they become dues. It is stated that

banks in Ghana are very careful in keeping liquid funds to pay off their financial obligations as they falls. Additionally the whole industry is not taking the risk and more than 80 per cent banks are maintaining adequate liquid assets to fulfill the needs of 50 per cent customers for withdrawing and deposits (PWC, 2014).

Banks having extremely liquid assets are more likely to make lower income meanwhile because of being less risky the liquid assets are gaining lower rate of returns Kashyap et al. (2002). Also when the regulators are imposing banks to possess liquidity is causing banks to bear cost particularly when want for liquidity from creditor is not connected with want for liquidity from debtors. Also as an alternative to liquidity the net loans to total assets ratio is used. The proportion of bank assets engaged in loans is shown with the help of this ratio. There are varied conclusions as a result of practical studies on the impacts of liquidity on profit. Amoah and Cyamerah (2015), Guru et al. (1999) and Thorton and Molyneux (1992) discovered indirect relationship whereas Kosmidou and Pasiouras (2007) and Bourke (1989) discovered direct relationship. In similar papers conducted regarding liquidity effect on profitability Kosmidou and Pasiouras (2007), among local banks discovered significant direct impacts on profitability and indirect impacts on external banks. Bank size is one another factor for profitability which is broadly argued among the investigators and is measured as a related factor effecting the bank profitability. Bank size indicates the probable economies of scale in banks. As per the economies of scale large size banks are able to decrease the cost per unit of service being produced which is cheaper for them. Also the large sized banks are connected with various opportunities which can enable them to rise incomes as well to decrease the costs and risks Garcia-Herrero et al. (2009).

3. Theoretical frame work

3.1: Hypothesis

Ho: Earning Assets to Total Assets has no effects on profitability.

H1: Earning Assets has a positive effects on profitability.

Ho: Loan to Deposit has no effects on profitability.

H1: Loan to Deposit has a positive effect on profitability.

Ho: Firm Size has no effects on profitability.

H1: Firm Size has a positive effect on profitability

4. Research Methodology

4.1: Sample/ Population

There are 15 national and international banks working in Afghanistan banking sector. The Data was collected form 5 Banks listed in banking sector of Afghanistan and the periods for data collection are from year 2010 – 2015 for banking sector.

Data that was collected from banks are mentioned as below:

1. Afghanistan International Bank (AIB)
2. Aziz Bank
3. Bakhtar Bank
4. Ghazanfar Bank
5. Maiwand Bank

4.2: Source of Data

Data was collected from financial statements (balance sheet and Income statement) which are issued as audited financial statements by banks.

4.3: Sampling Technique

As there are 15 national and international banks in banking sector of Afghanistan, it was not possible to select all 15 banks data because of unavailability. So convenience sampling method was used to select those banks whose' data were available.

4.4 Variables used

Dependent variable *Return on Assets:*

Return on assets (ROA) is a dependent variable. It is the quotient of dividing profit after tax by total assets (Khalas 2013). It is an indicator of measurement, how profitable a company is relative to its total assets value therefore ROA gives a concept that as to how efficient and effective management is at using its assets to generate earnings. Calculation is made by dividing a company's annual earnings by its total assets; that is therefore is displayed as a percentage. Sometimes this is explained to as "return on investment in assets" and sometimes it is known as return on assets. The formula for return on assets is: $\text{Net income} / \text{Total Asset}$ the ROA formula looks at the ability and feasibility of a company to utilize its assets to gain a net profit and economic benefits.

$$\text{Return on equity (ROA)} = \frac{\text{Profit before tax}}{\text{Total Assets}}$$

Independent variable

- a) **Earning Asset to Total asset (ETA):** This ratio shows how well bank management puts bank assets to work. High-performance banks have a high ratio. Where earning assets are consider as Loans, leases, investment securities, and money market assets.

$$\text{Earning Asset to Total asset} = \text{Average Earning Asset} / \text{Average Total Asset}$$

- b) **Loan to Deposit (LTD):** The loan-to-deposit ratio (LTD) is a commonly used statistic for assessing a bank's liquidity by dividing the bank's total loans by its total deposits. This number is expressed as a percentage. If the ratio is too high, it means that the bank may not have enough liquidity to cover any unforeseen fund requirements, and conversely, if the ratio is too low, the bank may not be earning as much as it could be.

Loan to Deposit (LTD) = Loans/ Deposit

- c) **Size of Firm :** Size is measured by the natural logarithm of total assets.

Size of Firm = Natural log (Firms Asset)

Large sized firms normally have more business diversification than small firms in terms of credit ratings, constant cash flow, and lower risk of bankruptcy. Furthermore large firms are capable of decreasing transaction costs of issuing long-term debt at a favorable low rate of interest. Consequently, since it is easier for large sized firms to raise funds from creditors, a positive sign is expected between firm size and leverage (Titman and Wessels, 1988; Agrawal & Nagarajan, 1990; Rajan & Zingales, 1995; Wald 1999; Buferna et al., 2005; Supanvanij, 2006; and Akhtar& Oliver, 2009, Liaqat. A., 2011; Qureshi et al, 2012; Bhaduri, 2002.

4.5 Estimated Model

$$ROA = \beta_0 + \beta_1 (ETA) + \beta_2 (LTD) + \beta_3 (SIZE OF FIRM) + \mu$$

B0 = Constant

ROA= Return on Asset

INTC= Interest coverage ratio

Size of firm= Error Term

5) Data Analysis and Results

This chapter contains the empirical results of the study including the diagnostic tests, descriptive statistics, and selection of the appropriate model and interpretation of the results of the selected model. To select the model of the study, diagnostic test i.e. Chow test, Breusch-Pagan test and Hausman test have been used for the selection of appropriate model. Table 4.1 summarizes the results of the panel diagnostic tests.

Table 4.1: Diagnostic tests for Model selection

Diagnosics test	Null hypothesis	P value	Recommended Model
Chow Test	Pooled is Better than Fixed Effects	0.0001	Fixed Regression Model

Breusch-Pagan	Pooled is Better than Random Effects	0.5742	Pooled Regression Model
Hausman Test	Random Effects is better than Fixed Effects	0.1618	Fixed Effects Model

Source: Data output from SPSS

Based on the results of the panel diagnostic tests, it is concluded that fixed regression model is the best and appropriate model for this study as suggested by the Chow and hausman tests.

Table 4.2: Variance Inflating Factor (VIF) Test

Variable	VIF	1/VIF
ETA	1.37	0.711
LTD	1.42	0.833
Size of the firm	1.21	0.631

Source: Data output from SPSS

Multicollinearity refers to a situation where a number of independent variables in a multiple regression model are closely correlated to one another. Multicollinearity can lead to skewed or misleading results when a researcher or analyst is attempting to determine how well each one of a number of individual independent variables can most effectively be utilized to predict or understand the dependent variable in a statistical model. In general, multicollinearity can lead to wider confidence intervals and less reliable probability values (P values) for the independent variables. So in order to make sure that our variables doesn't have the issue of multicollinearity the calculated values should be greater than 1. As we see the calculated values in the table above values for Loan, Deposit and Size of the firm are 1.37, 1.42, and 1.21 respectively.

6. Results and Discussion

Table 4.3: Fixed Effect Model

Return on Asset	Coefficient	Robust Std. Error	T-Value	P-Value
Const.	-0.089	0.039	-2.299	0.029
ETA	0.014	0.004	-4.092	0.000*
LTD	0.015	0.015	-2.115	0.048*
Ln_Asset	0.032	0.016	1.988	0.057
Observations	F(3, 26)	Prob > F	R-squared	Adjusted R-sq
78	10.48	0.000	0.547	0.495

Source: Data output from SPSS

Regression:

The regression equation obtained after the analyses of the data is as follows:

$$Y = \alpha + \beta_1 (\text{ETA}) + \beta_2 (\text{LTD}) + \beta_3 (\text{Ln Asset}) + \sigma$$

$$Y = -0.089 + 0.014 (\text{ETA}) + 0.015 (\text{LTD}) + 0.032 (\text{Ln Asset}) + \sigma$$

Coefficients:

The coefficients show the nature of relationship and the amount of change brought in the dependent variable by the independent. In the coefficients table the β shows the amount of percentage change and the sign with each variable shows its negative or positive relationship with the dependent variable. The table shows that if all the independent variables are equal to zero there will still be increase in the profitability of -0.089 due to α . This table further shows that there is a positive relation between Loan, Deposit and size of firm as one unit change in these variables increases the bank's profitability 0.014, 0.015 and 0.032 by respectively.

F- test:

F test is a part of ANOVA table which shows the significance of the whole model. The model is considered to be significant if the F calculated value is greater then the F tabulated value (The F tabulated value is 4) i.e. $F_{cal} > F_{tab}$. As the ANOVA table shows that Value of F test is 16.428 which is greater than 4 therefore it is concluded that the model as whole is significant. The sig value also approves this fact as its value is less than 0.05 i.e. $F_{cal} < 0.05$.

P-value (Overall model significance):

P value shows the individual independent variable relationship with dependent variable either their relationship is significant or not ($P_{cal} \leq P_{tab} 0.05$). The P values stated in the table 4.3 shows that Loan and deposit has significant relationship with profitability as their values are 0.000, 0.048 respectively but size of firm doesn't have that much significant relationship with profitability as its value (0.057) which is greater than $P_{tab} 0.05$.

R Square (Coefficient of determination):

R^2 is also known as coefficient of determination. It shows us the goodness of fit. Or in simple words it shows us that how much change in the dependent variable is brought by independent variables as a whole. If the value of R^2 is near to 1 it is considered to be a good fit. As we can see in the model summary table that our value of R^2 is 0.547 which means that it is not a good fit. The value of R^2 tells that 54 per cent changes in the profitability are brought by the independent variables discussed in this research.

7. Conclusion

The relationship of dependent and independent variables are mutually inter related and understanding regarding these variables is very much important especially for research. After comprehensive study and analysis, I have concluded that independent variables such as earning asset to total asset has dramatic impact on profitability, if we concentrate more on the current asset as an earning asset, we can generate more profit like, utilizing a banks liquidity in various financial market, instead of keeping it in the vault. Practical example some banks don't invest their fund in Afghanistan because of security reason, but some of the bank do, in result the earning asset to total asset ratio of the second bank will be high. For banking industry collecting deposit and disbursing loan is the primary business and it has

very vital impact of the firm profitability, if our deposit decline so defiantly we won't be able to give loan and in result bank will have very low profitability.

Some of the banks accept deposit but they are not lending due to high risk, they just utilize the liquidity in other treasury operation which has low profit compare to lending. (Approximately treasury operations will have 5 per cent return while lending will give 15-20 per cent return). So we can say that both deposit and loan have significant impact on bank's profitability. If we take the example of firm size, so I will refer it to practical example, Azizi Bank is one of the large bank operating in Afghanistan, if we compare their profitability with Afghanistan Commercial Bank, so they have different profitability ratio because of the firm size, network of branches, assets size, lending volume, liquidity and so on, so as a result we can say that firm size have vital role in bank profitability.

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