Effect of Liquidity and Credit Risk on Bank Financial Performance: A Case of Afghanistan’s Commercial Banks

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Abstract

Aim: The aim of this study was to examine the impacts of liquidity risk and credit risk on financial performance of commercial banks in Afghanistan.

Methods: Panel data from six commercial banks was collected from their official website for the period 2010 – 2014. The data was analyzed by Gretel software using Ordinary Least Square (OLS) model. Dependent variable (financial performance) was measured by return on assets (ROA) while independent variables liquidity and credit risks were measured by current and leverage ratios respectively.

Results: It was found that liquidity risk and credit risk have negative impact on financial performance of selected commercial banks in Afghanistan. The impact of credit risk on financial performance was less than the impact of the liquidity risk on financial performance. The correlation between return on asset and leverage ratio was weak (23 percent) and the correlation of current ratio with leverage ratio and return on asset is as low as minus 6 percent and minus 37 percent respectively.

Conclusion: This study detected the negative relationship between commercial banks’ financial performance and liquidity and credit risks. So there is a negative significant impact of liquidity and credit risks on selected commercial banks’ financial performance in Afghanistan

Recommendations: The Study recommend that CBs in Afghanistan should not unnecessarily keep cash amount in idle form because it decrease return in asset. Cash is a valuable asset which should be invested for fruitful investment results. In addition, CBs should not refrain from advancing loans since it has minor effects on return on asset and reduces unfavorable liquidity.

Keywords: Liquidity risk, credit risk, financial performance, commercial banks

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INTRODUCTION

Commercial banks perform a major and important role in all economic and financial activities because the presence of suitable and comprehensive financial system can have significant contribution to the GDP growth. It is an acknowledged fact that the efficient and effective performance of banking industry guarantees financial stability of any nation (Osborn, Fuertes, & Milner, 2012). The strong and healthy financial sector depend chiefly on sound banking system (Kayaa & Pastory, 2013). Because of the significance of banks and their contribution to the economy of countries, bank managers apply different regulations to make certain that the stability of the bank’s is ensured to some anticipated time in the future. The very basic profitability sources of banks are accepting deposits from people with surplus of funds and advancing loans to businesses or individuals with deficit of funds. The channeling of and intermediation of receiving money from those who have surplus of fund and providing loan to those who have deficit of fund is the key function of a bank. In this context, bank is responsible to meet and satisfy withdrawal needs of customers, it means to maintain a suitable liquidity ratio in order to avoid liquidity risk. Graham (2013) defined liquidity as it’s a bank’s capacity to fund increase in assets and meet both expected and unexpected cash and collateral debts at an equitable cost and without upcoming undesirable losses. Liquidity measures the presence of money in hand and the rate by which the current assets were changed the rate by which changed the current assets into cash to meet ordinary and extra ordinary petition (Nwaezeaku, 2006). Thus, liquidity means the proportion of capital available for the repayment of liabilities. Accordingly, if banks industries to fail to keep a reasonable ratio of liquidity dependently, the would be faced with liquidity risk (Kamau & Njeru, 2015).

Moreover, banks are responsible for receiving loans from the borrowers on the maturity dates, it means know its credit risk ratio to avoid or mitigate credit risk. Credit risk is a probability that debtors will not pay back their debts on due date or not repay at all (Sinkey, 2002). Compared to other financial institutions, banks are exposed to more risk. Usually the risks faced by banks are identified in the laws relating to banks, such as interest rate risk, market risk, liquidity risk, credit risk, currency risk, counterparty risk and operational risk (Farue, 2013). The most significant responsibilities for banks is to study the risks that they are facing with, and take actions to eliminate or reduce them. Managing liquidity risk and credit risk is a centric part of financial risk management in commercial banks. Credit risk is a serious hazard to the performance of banks which when unchecked would lead to the total collapse of banks. Liquidity risk also act as a snare to banks with an unsound risk assessment and control policy (Ejoh, Okpa & Inyan, 2014). Because of significant effect on the financial performance and the survival of banks, both credit risk and liquidity risk cannot be overlooked (Coyle, 2000).

Looking to the current situation of Afghanistan, reasons such as insecurity, high rate of poverty, enormous portion of uneducated people and many more have caused uncertainty and suspicion in carrying and performing economic and financial activities, especially in commercial banking sector. In growth stage, it is very important to analyze the effects of liquidity and credit risks on financial performance, to select the right decisions for boosting their financial activities. Therefore, this study examines the impacts of these risks on the financial performance of selected commercial banks in Afghanistan.
FINANCIAL PERFORMANCE OF COMMERCIAL BANKS

According to Schmidt (2015), financial performance provides useful and vital information for both external and internal parties of the business. It helps the internal parties to know about the weaknesses, strengths and the business target level which are extremely important for reaching business’ objective and the assessment and evaluation of budgeting and investment decisions. Financial performance is also important for external users to know about financial position of the business for their future decision regarding investment. According to Murthy (2003), the determination of bank’s profitability emphasizes on ROA, ROE and NIM.

Return on Equity (ROE)

ROE ratio is used to find out how much profit earned by a company Capered to the shareholders’ equity total amount invested or shown in balance sheet. The business which has high return on equity most probably could be capable of producing cash internally (Ongore, 2013). So, the company which has higher ROE definitely will be better because of profit generation. It is obtained by dividing net income after tax by total equity. It denotes the shareholders’ funds’ return earned invested in the bank Khrawish (2011). 

\[ \text{RoE} = \frac{\text{Net income}}{\text{Equity}} \times 100 \]

Return on Asset (ROA)

ROA ratio is used to show the productivity of a bank (Ongore, 2013). ROA show bank management’s capability to make income by using company assets at their disposal. In addition, ROA shows a company management efficiency in the generating of net income from the using of all its resources (Khrawish, 2011). According to Wen (2010), a company with a higher level of ROA is more efficient in use of its resources. Return on asset present the profitability rate of a bank (Khrawish, 2011).

\[ \text{RoA} = \frac{\text{Net Income}}{\text{Total assets}} \]

Net Interest Margin (NIM)

NIM is also a method of measurement of financial performance for a bank, which is the variance among interest income and total earning assets. NIM shows in term of percentage what the financial institution makes on loans over a period of specific time. The bank more is profitable and stable if the NIM is higher. Therefore, NIM is a vital and key scale for measuring the bank profitability (Ongore, 2013). NIM could be reflection of a riskier lending performance related with considerable loan loss requirements (Khrawish, 2011). Gul et al (2011) mentioned that the NIM is calculated by dividing net interest income by total earnings assets.

\[ \text{NIM} = \frac{\text{Net interest income}}{\text{Total earning assets}} \]

CREDIT RISK MANAGEMENT IN BANKING SECTOR

Risk means that the borrower or other parties will not fulfill its obligations under the agreed terms (Saarman, 2017). Risk occurs when there is a doubt or uncertainty with the lenders about the repayment from borrowers on due. According to Ghosh (2012), mostly banks make their equity from loans. Therefore, any failure in the repayment of loans will face banks with serious harms. Credit risk also arise form asymmetric information between lender and borrowers. So, this event makes hard for banks to recognize admirable borrowers (Mwanza & Makori, 2023). Thus, banking industries have to set a critical credit management system to analyze and evaluate the creditably of borrowers to stop adverse selection and moral hazard which cause massive accumulation of
nonperforming loans in their records. CRM assists to modify measure and manage the activities of a bank and avoid credit risk (Raghavan, 2003).

Most of the banks which use effective CRM on daily financial performance have gotten successes at the end. According to Casu et al. (2006), banks use CRM as a weapon to grow up their incomes by making the credit risk at lowest level. According to Winner et al. (2007), CRM empowers financial institutions to become stronger and attain a sustainable growth. Financial performance of financial institutions is extremely hanged on effective and efficient credit risk management. Though, there are some drawbacks of using CRM at the primary step, but in the long run has significant positive impacts on banks’ profitability (Asare, 2015).

LIQUIDITY RISK MANAGEMENT IN BANKING SECTOR

Liquidity is the ability of a financial organization to meet the obligations. There are two fundamental issues which are liquidity creation and the management of liquidity risk. Liquidity creation aids creditors and companies stay afloat. Management of liquidity risk ensures the banks own liquidity for the reason that the bank can support all their functions (Vossenand Ness, 2010). It is the responsibility of banks to soundly manage their liquidity risk to meet their debts and to fund the increase in assets as it arises without allowable costs or losses. The liquidity risk of banks increase due to funded short-term liabilities using long term assets as well as involvement in fraud and embezzlement (Tsi, 2018). Additionally, rising interest rates disturbs the market values of assets, so it may essential for the bank to sell them, for the reason to raise extra liquid funds, which directly affect borrowing cost in the financial market (Drehmann & Nikolaou 2010). Effective LRM ensures bank’s capability to repay its debts as they fall due (Kumar & Yadav, 2013). It is necessary for banks to set up a strong LRM system to make sure there is satisfactory liquidity with several high quality liquid assets to compete with a series of liabilities.

LIQUIDITY AND CREDIT RISKS MANGEMENT THEORIES

Extreme Value Theory

It was developed by Leonard Thorpe in 1950s, which is a practical and valuable instrument for modeling and measuring risk. EVT offers directions on the type of distribution that must be set so that the riskiest ones can be managed conservatively (Kamau & Njeru, 2015).

Capital Structure Theory

This theory was developed by Modigliani and Miller in 1950s. It presents that a business financial operation can continue through use of liabilities or equity, or by the various combination of these two. It supposed a perfect capital market free of asymmetric information issues, no transaction costs, no bankruptcy cost and the securities are boundlessly dividable.

Liquidity Preference Theory

Bibow’s (2005) LPT state that people value money for both current business transactions and as asset storage. Therefore, they will victimize the capability to make interest on money, which they want to use in the present. They are prepared to save some money for these purposes in order to save a profit. The banks’ LPT recommends that banks should follow active balance sheet policies instead of passively accepting the demand for credit.
Shiftability Theory

ST was suggested by H.G Moulton and suggest that the bank’s liquidity would sustain if its assets could be moved to other banks for cash without any loss of material. This perspective claims that bank liquidity can improve if it has available assets to sell, and provides the central bank and discount market ready to buy asset supplied with discount. Thus, it identifies that the ability of a bank to transfer assets, marketing or transferring capacity is the basis for liquidity assurance. The theory reinforces that greatly merchantable security detained by a bank is an outstanding rout of liquidity.

Agency Theory

Moyers and Smith (1987) clarifies this theory a conceivable disparity of interest between shareholders, management, and debt holders because of asymmetries in earning distribution, which can result in the company taking too much risk or not being involved in a positive net worth project.

Loanable Funds Theory

LFT Theory was suggested by Dennis Robertson and Bertil Ohlion in 1930s. It states that individuals only care about the original variables (product gains or losses, buying power gains or losses). The marginal production of capital assets is identified with technical features of the productive assets. The time inclination of entities is given by the tastes of individuals.

Conceptual Framework

This is a graphic display of the theory which is being presented as a model where researchers show relation between dependent and independent variables (Osu & Onen, 2007). In this research the dependent variables liquidity risk which is measured by current ratio and credit risk that is measured by leverage ratio and the independent variable financial performance measured by return on asset ratio (ROA).

<table>
<thead>
<tr>
<th>IV</th>
<th>Credit Risk</th>
<th>Leverage Ratio (LR)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Liquidity Risk</td>
<td>Current Ratio (CR)</td>
</tr>
<tr>
<td>DV</td>
<td>Financial Performance</td>
<td>Return on Assets (ROA)</td>
</tr>
</tbody>
</table>

Figure 1: Impact of credit risk and liquidity risk on ROA

METHODOLOGY

Research Design

This study utilized a correlational research methodology which studied the effects of credit and liquidity risks on the financial performance of commercial banks, as well as to check out the correlation between the dependent and independent variables of this study. To study the effects of both mentioned risks on commercial banks financial performance in Afghanistan, commercial banks’ (Azizi bank, Bakhtar bank, AIB bank, Ghzanfar bank, Maiwand bank and Arian bank) annual financial reports was collected for the time period of 2010 – 2014.

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Empirical Model

Regression model was used to estimate the result and determine the effects and correlation between dependent and independent variables for the selected banks in Afghanistan. The model of this study was as follows:

\[ FP = \alpha + \beta_1 \text{(LR)} + \beta_2 \text{(CR)} + \epsilon \]

Where:

FP = Financial Performance
LR = Liquidity risk
CR = Credit Risk
\[ \alpha \] = Alpha is the intercept or constant
\[ \epsilon \] = the error term

Variables Definition

To analyze the effects of credit risk and liquidity risk on bank financial performance, there are used 3 variables in this study which are as follow:

**Dependent variable**

*Return on Assets (ROA)*

Net income and total assets ratio of a bank present return on asset. It specifies how to be effective and efficient in the management of a bank in terms of producing revenue from a limited source. Higher ROA means management is more efficient and able to convert assets into income and this interprets into higher bank profits (Asare, 2015). According to Ahmed (2008), commercial bank’s financial performance is usually determined by the help of efficiency examination. In this study, ROA is used to determine the financial performance level of selected commercial banks.

\[ \text{ROA} = \frac{\text{Net income}}{\text{Total assets}} \]

**Independent variables**

*Current Ratio (CR)*

Current ratio measures a company’s capability of responding to its short-term financial responsibilities or debts. The current ratio identifying in current assets (amount to be received in less than a year) and current liabilities (amount to be paid in less than a year). Current ratio creates a relationship between current assets and current liabilities. Current ratio is calculated as: Current ratio = Current assets ÷ Current liabilities

*Leverage Ratio (LR)*

Leverage lets a bank to increase the possible achievements or losses on a situation or investment outside what would be probable through a direct investment of its own funds (Hulster, 2009). The Basel Committee banking supervision team conceive that a simple leverage ratio framework is critical and compatible to the risk-based capital framework; and a reliable leverage ratio is one that confirms broad and suitable capture of both the on- and off-balance sheet sources of banks’ leverage (Basel Committee, 2014)
Data Collection Techniques

A total of 6 six commercial banks out of the total 13 registered commercial banks were selected for this study. The number of banks included in the study was determined based on the financial reports available for these banks for the target period. Moreover, the units of time series data are given in terms of year. This study includes financial reports for the year 2010-2014 both years inclusive. Due to data availability constraints for certain banks the five-year data was used.

Microsoft excel was used to calculate ratios from the balance sheet and income statements of the respective banks. The financial statement of each bank was carefully read and the required input data was placed in appropriate cell of the excel sheet. When completed, the final ratios were exported to Gretel Software using Ordinary Least Square (OLS) model.

The banks’ working background value and wealth means that, the secondary data used generally had a pre-established degree of validity. In this study, validity was ensured by collecting data from the original sources. Authorized approved annual financial reports as secondary data was collected from each individual bank’s official web.

FINDINGS

Table 1: Summary of descriptive statistics analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Ratio</td>
<td>1.1328</td>
<td>1.1408</td>
<td>0.1138</td>
<td>1.6628</td>
<td>0.23148</td>
</tr>
<tr>
<td>Leverage Ratio</td>
<td>8.9253</td>
<td>6.985</td>
<td>1.5086</td>
<td>17.272</td>
<td>5.0999</td>
</tr>
<tr>
<td>Return on Asset Ratio</td>
<td>0.0051756</td>
<td>0.004504</td>
<td>-0.0458</td>
<td>0.03435</td>
<td>0.01341</td>
</tr>
</tbody>
</table>

CR has the highest mean with numerical Value of 1.13 LR has Mean of 8.92 and ROA has the Mean of 0.005. It was found that liquidity risk and credit risk have negative impact on financial performance of selected commercial banks in Afghanistan. In table 1, coefficient values show that the relationship between dependent variable (financial performance) and independent variables (liquidity and credit risks) is positive. It means that one percent change in current ratio will cause a 10 percent decrease return on asset. Similarly; one percent change in leverage ratio cause 0.2 percent decrease in return on asset.

R-Square is the quantity of variance in the dependent variable (Financial performance) which can be predicted from the independent variables (liquidity and credit risks). In the above table the value of R-Square is 0.05 which indicates that 5% of the variance in dependent variable can be predicted by independent variables. The following regression model can be retrieved from the above output data as:

\[ FP = 0.04 + (-0.10) \text{LR} + (-0.002) \text{CR} + \epsilon \]

Where:
FP = Financial Performance
LR = Liquidity risk
CR = Credit Risk
\( \alpha \) = Alpha is the intercept or constant

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ε = the disturbance term or Error of thumb or those factors which are not considered in this study but still affect the result.

**Table 2: Multi-collinearity diagnostics result**

<table>
<thead>
<tr>
<th>Variance inflation factors</th>
<th>Current ratio</th>
<th>Leverage ratio</th>
<th>VF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.161</td>
<td>1.161</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

The VIF values for current ratio and leverage ratio are 1.16 and 1.16 respectively. Since these values are less than 5, it shows no multi-collinearity exists between the independent variables.

**Table 3: Heteroscedasticity diagnostics result**

The calculated value of the test statistics 1.23236 is less than the tabulated value which is 11.0705. The data is homoscedastic and therefore no heteroscedasticity exist.

**Correlation Matrix**

To examine the relationship among variables under the study, correlation analysis was used. The coefficients of Pearson or one to one correlation define the nature of relationship among the variables of the study. The value of correlation coefficient ranges from -1 to +1, where -1 stands for strong negative and +1 stands for strong positive correlation between the variables. For this study the correlation matrix is presented below in table 4.
Table 4: Correlation matrix

<table>
<thead>
<tr>
<th>Variable</th>
<th>Current ratio</th>
<th>Leverage ratio</th>
<th>Return on asset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leverage ratio</td>
<td>-0.37</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Return in asset</td>
<td>-0.06</td>
<td>0.23</td>
<td>1</td>
</tr>
</tbody>
</table>

The output shows, current ratio has negative correlation with leverage ratio and return on asset. Whereas, leverage ratio has positive correlation with return on asset. In other words, the correlation between return on asset and leverage ratio is weak (23 percent) and the correlation of current ratio with leverage ratio and return on asset is as low as minus 6 percent and minus 37 percent respectively.

Regression

Table 5: Regression and coefficient model

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient</th>
<th>R - Square</th>
<th>Std. error of regression</th>
<th>P- value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const</td>
<td>0.002</td>
<td>0.05</td>
<td>0.013</td>
<td>0.4</td>
</tr>
<tr>
<td>Current Ratio</td>
<td>-0.002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leverage Ratio</td>
<td>-0.10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dependent variable: ROA

CONCLUSION

This research was conducted to study the impact of liquidity risk and credit risk on financial performance of commercial banks in Afghanistan. This study detected the negative relationship between commercial banks’ financial performance and liquidity and credit risks. There is a negative significant impact of liquidity and credit risks on selected commercial banks’ financial performance in Afghanistan. The impact of credit risk on financial performance is less than the impact of the liquidity risk on financial performance. So the null hypothesis of this study which was “there is no significant impact of liquidity and credit risk on commercial banks financial performance” was rejected. The correlation between return on asset and leverage ratio is weak (23 percent) and the correlation of current ratio with leverage ratio and return on asset is as low as minus 6 percent and minus 37 percent respectively.

RECOMMENDATIONS TO COMMERCIAL BANK MANAGERS

The managers of commercial banks in Afghanistan attempt to apply the following recommendation in their organization to mitigate both liquidity and credit risks and find more opportunities for fruitful profit earnings:

1. Commercial banks in Afghanistan should unnecessarily not keep cash amount in idle form because it decreases return in asset. Cash is a valuable asset which should be invested for fruitful investment results.
2. Commercial banks should not refrain from advancing loans for two reasons; it has minor effects on return on asset and it reduces unfavorable liquidity

RECOMMENDATIONS FOR FURTHER RESEARCH

1. As in this study used only one proxy (ROA) for measuring dependent variable (financial performance), and independent variables liquidity risk through current ratio and credit risk through leverage ratio, so it is recommended for other researchers to use the rest proxies such as (ROE) along with (ROA) for financial performance, loan loss, capital adequacy, non-performing loan, log of total deposit, asset quality of bank, credit rating and other ratios for measuring liquidity and credit risks which will explore other site of knowledge.

2. This study was based on 30 observations from six commercial banks, other researchers are recommended to increase the number of banks and their observation as well.

3. The study used only secondary data for the analysis of the impacts of liquidity and credit risks on commercial banks financial performance, other researchers are recommended to use primary data as well.

4. Other researchers are recommended to investigate the same topic in the public banking sector.

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