The Effect of Liquidity Risk and Credit Risk on the Bank Performance: Empirical Evidence from Iraq

Noor Hashim Mohammed Al-Husainy[1], Hamid Mohsin Jadah[2]

[1] Lecturer at the Department of Banking and Finance, Imam AL-Kadhum College for Islamic Studies- Babylon Departments, Email: noorhashim136@gmail.com

[2] Associate Prof. at the Department of Finance and Banking, College of Administration and Economics, University of Kerbala, Iraq, Email: hamed.m@uokerbala.edu.iq

ARTICLE INFO

OPEN ACCESS

ABSTRACT

The main objective of this paper is to study the effect of liquidity risk and credit risk on the profitability of commercial banks in Iraq. The sample is 18 private commercial banks listed in Iraqi Stock Exchange for six years for the period 2010 to 2020. This paper especially focuses on Iraqi commercial private Banks. The dependent variable is bank performance is measured by return on asset (ROA) and independent variables are, liquidity risks, credit risks. This paper employs a dynamic panel model, using Generalized Methods of Moments (GMM) panel data regression of Fixed-effects models. Furthermore, the findings illustrate that liquidity risk has a positive significant association with bank profitability. Meanwhile, credit risk has an adverse significant association with bank profitability. This paper contributes to the debate of risk management as well as determinants of bank performance from several dimensions. First, this study is the first to investigate the impacts of liquidity risks on bank performance in Iraq. Secondly, this is the first study that investigates the impacts of credit risks on bank performance in Iraq. It is hoped that the result of this paper can fill the gap of the literature on the association between liquidity risks, credit risks, and bank performance.

Corresponding Author's Email: hamed.m@uokerbala.edu.iq

1.   Introduction

The large size of the banks and the variety of stakeholders of depositors, borrowers, and shareholders are of considerable importance for the economies of developing economies. The strength of every domestic economy rest on the soundness of the banking sector (Abbas et al., 2019). Risk in banking such as objectives can accomplish with the sudden results of happening of something and it consist of uncertainty or gain chance with threat (Adeusi et al., 2014). In order to ensure economic stability and growth, the strong banking system is critical. The banking environment is full of great risk because it depends on the lending business which have higher percentage more than owner's capital (Owojori et al., 2011). As compared to other industry banking business is riskier. According to Crouhy (2005) insufficient liquidity decrease the profitability because it reduces the

unexpected cash which used for extra cost. This insufficient liquidity makes the deficiency of capital which leads to bank insolvency. There should be strategies for funding, risk management process, liquidity risk revelation limits, and plan of alternative strategy along crisis scenario included in the liquidity management policies of bank. A study by Santomero (1997) found the liquidity risk as a funding crisis risk due to high risk with unexpected happening which can lose the confidence and also make existence of national proportion in crisis.

Via financial services, they offer banks are germane to economic growth. It can be said that the position of their intermediary motivates economic development. One of the financial stability indexes is effective and efficient performance of the banking system over time. The acceleration of a nation's economic growth step and its long-term sustainability is achieved through bank credit extended to citizens' productive activities (Jadah et al., 2021). According to Alalade et al. (2014), credit risk is the risk of default emerging from an inability to comply with the payments of borrowers or obligors. Therefore, the credit risk can be viewed as the bank's vulnerability to a default in the fulfilment of a maturing contract as a result of borrowing.

For a variety of factors, the Iraqi banking industry was chosen. To begin with, there are few conversations and insights in the Iraqi banking industry. Second, in recent years, Iraq has experienced major financial reforms and deregulation. Third, the private sector is considered susceptible due to a variety of factors that result in bank lending limitations, which have a knock-on impact of financial swings in the region. (Jadah et al., 2020a). Henceforth, policymakers and regulators can use the examination of the influence of risk management on bank performance to help them take steps to stabilize the financial situation.

2. Literature Review
2.1. Theoretical and Conceptual Background

This section of the study examines theoretical and empirical literature, including a series of broader studies on the association between bank's performance and risk management practices, as well as several studies on this relationship using traditional profit theory, the majority of which have been conducted in developed countries and in other developing countries.

2.1.1. Theoretical Background

Credit risk refers to the possibility that a borrower may default on his loan and fail to pay it in full or in part as promised for any cause (Salas & Saurina, 2002). This sort of risk is, nevertheless, one of the most significant hazards facing banks at all times due to its nature. Iwedi and Onuegbu (2014) emphasized, in addition to the feasibility and profitability of their corporate businesses and also the banking system through effective credit risk management and the efficient use of funds available to indifferent economic sectors, that they play an important role in achieving the stability of the bank and reducing the credit risk of banks. A number of potential risks exist, including credit risks, liquidity risks, market risk, operational risks and policy risks. Credit risk is unfortunately the greatest risk facing banks (Chen & Pan, 2012). In the case of the banks, the credit risk and the related difficulties may be caused by the increased degree of perception of hazards. This is due to certain features of the customers and their economic situations, which require extensive empirical consideration in most cases. In addition, while banks may accept the losses from their usual incomes, unexpected losses that cannot be absorbed by normal income might occur

(Olalekan & Adeyi). Moreover, banks must dedicate enough resources to enhance credit management's capacity to balance available loan, risk and borrowing requirements resources. However, the current study relates to the following theories which illustrate the theoretical framework and its influence on banking performance of the liquidity risk and credit risk:

2.1.2. The Credit Risk Theory

The credit risk theory indicates the risk of a delay or a default in the loans or interest owed to the borrower or both of them (Louzis et al., 2012) where a lender is in danger of exposing itself to financial distress after the loss of capital and interest and lender's exposure to significant losses, where the lender is unable to return deposits to their owners or to compound with his other obligated liabilities. Accordingly, credit inspections were carried out by lenders, and loans such as mortgage insurance would be requested from lenders, as would the requested improved mortgage guarantee on borrower's assets such as personal guarantees and third-party guarantees. The risk level for borrowers, therefore, has a direct impact on the costs of lending, such as interest, fees, etc.

2.1.3. The Liability Management Theory

This theory focuses on that it is not important to traditional trends in the management of debt and liquidity at banks, since money may be collected from the capital markets by means of short-term debt instruments when the reserve deficit must be filled, which means that the bank does not only manage its liabilities, it also focusses not on the management of its assets but on its liability (Shafiq & Nasr, 2010). Nevertheless, in liquidity this theory has taken a further turn, proposing that, in order to provide adequate liquidity, a bank might make use of its debts to fulfil withdrawal demand and meet the applications for loans. Furthermore, credit alone is not the source of income, but the bank will inevitably not be able to keep its depositors in charge, as it cannot supply the appropriate liquidity to fulfil the demand for lending and banking facilities.

2.2.   Empirical Review and Hypotheses Development
2.2.1. Liquidity Risk

The risk of liquidity can be characterized as the possibility that a facility cannot satisfy its maturing obligations or can do so only through overly high borrowing or dispose of property at rocky low prices. The association between risk management and bank performance is particularly crucial for understanding risk management practices impact on banks' performance. Theories and empirical evidence associated with the current study are presented by examining and analyzing the association between credit risk management and liquidity risk and bank's performance. Liquidity risks in banks result from short-term liabilities funding long-term assets which place liabilities at risk of rollover or refinancing (Kumar & Yadav, 2013).

Liquidity risk has two key points in definition: i) make possible the asset liquidity when it is required; and ii) with fair value of market. The banks have more liquidity risk because they settle or liquidate the assets at suitable price (Muranaga & Ohsawa, 2002). Correspondingly, the study by Emami et al. (2013) discussed the association between the liquidity risk and commercial banks profitability in Iran, their spaper used the panel data to analyses the performance of Iran's commercial banks. Moreover, their study considered two groups of banks with macro-economic and specific variables for the empirical model. The findings of this paper illustrates that there is an adverse association between liquidity risk

and proxies of performance including return on equity and return on assets, therefore, it is clear that liquidity risk can weaken the banks' profitability. Furthermore, Tafri et al. (2009) examined the influence of risk management on the profitability of Malaysian conventional Banks. Their paper utilized panel data approach of GLS of random effects and fixed effect approach. By utilizing ROE and ROA as measures of bank performance and liquidity risk, credit risk, and interest rate risk as independent variables, this paper pointed out that the credit risk has significant adverse influence on ROE and ROA. Nonetheless, this paper fount insignificant effect for liquidity risk on both ROE and ROA. In the contrary, Olagunju et al. (2012) pointed out a positive association between bank performance and liquidity risk. Their study shows that the liquidity risk and banks' performance have bi-directional relationship, it means that both liquidity risk and banks' profitability have significant effect on each other. Consequently, this paper hypothesized the association between liquidity risk and the performance of bank as bellow:

H1: The liquidity risk has a significant influence on the performance of bank.

2.3. Credit Risk

Credit risk is a key factor in determining bank performance. Credit risk occurs when a creditor, counterparty or bondholder is exposed to loss that fails to satisfy its obligation pledged under a contract (Poudel, 2012). The goal of credit risk management is to minimize risk and lift the risk adjusted rates of return of the bank by assuming and retaining credit exposure within appropriate parameters (Kanchu & Kumar, 2013). In addition, previous literature and theories indicated that there is an adverse association between the credit risk and banks' profitability, when credit risk will high than performance will decrease (Al Khatib, 2009). The study by Kargi (2011) explored the association between profitability and credit risk in Nigerian banks. He suggested significant positive relationship of advances and loans and non-performing loan with bank performance. His study used cross section, time series and the sample size of this study 6 banks and 4 years which indicates that sample is small. They employed pooled regression and correlation analysis which is not rigorous methodology. The estimation method was ordinary least squares estimation method. This method presumes many assumptions to produce robust results. Asymptotic statistical theory does not work for small sample case. Small sample may lead to wrong or biased estimates that can mislead researchers (Kargi, 2011).

Furthermore, Berrios (2013) examined the association amongst credit risk and the profitability and liquidity of banks in the USA public state commercial banks. The author used 200 bank observations for 5 years. He has used regression model with OLS. The study pointed out a significant statistically and positive association between the credit risk and banks' profitability. This study has used analytical method more robust than Kargi's analytical methods. However, he used single equation estimation method for each year. Panel data analysis could be used in this situation. This study has not accounted non-public banks; thus, the results of this study does not represent other types banks in USA or other countries banks. Berrios (2013) used only single credit risk measure, bank profitability. Other credit risk information is not covered in this study. Time series effects were not accounted in this study. Therefore, this paper hypothesized the association between the credit risk and the performance of bank as bellow:

H2: The credit risk significantly association with banks' performance.

3. Methodology

This paper lays emphasis on the influence of liquidity risk and credit risk on the performance of private commercial listed bank in Iraq. The study sample comprises of 18 commercial banks in Iraq for the period of 2010-2020, an unbalanced panel of 185 observations was employed. The independent variables are liquidity risk and credit risk which are collected from annual reports. However, the macroeconomic variable is collected from World Bank data base. Bank performance is measured by return on asset and is computed by dividing the net income of banks with their total asset (Ali & Nasir, 2014). Moreover, liquidity risk following to Barth et al., (2003) is calculated by ratio of liquidity (liquid asset to total assets). In addition, in this paper, the credit risk base on non-performing loan ratio which is measured as non-performing loan (NPL) to total loan (Alalade et al., 2014). Moreover, this study used control variables like bank size, inflation, and GDPG (Jadah et al., 2016a). Following to Hamid et al. (2021) this paper used GMM method to investigate the influence of liquidity risk and credit risk on banks' profitability in Iraq. The proposed dynamic model for this study is:

$$ROAit = \beta_0 + \beta_1 RO_{(t-1)} + \beta_2 LQ_{it} + \beta_3 CR_{it} + \beta_4 BSIZE_{it} + \beta_5 INFL_{it} + \beta_6 GDPG_{it} + \varepsilon_{it} \quad \ldots \quad (1)$$

Where: β_1 to β_6= beta coefficient, ROA=return on asset, LQ=Liquidity Risk. CR=Credit Risk, BSIZE = bank size, INFL = inflation, GDPG = gross domestic product growth, ε = Error Term.

4. Analysis and Finding

In this section, a model evaluation is performed with multiple regressions. Before run the multiple regression, descriptive statistics, Pearson correlation, Hausman Test were obtained to fulfil the multiple regression requirements.

4.1. Descriptive Statistics

The descriptive statistics of the independent variables and the dependent variable used in this paper are illustrated in Table 1. The dependent variable is return on asset. However, the independent variables are liquidity risk and credit risk. The size of the bank, GDP growth and inflation rate are the control variables. Table 1 also illustrates that the mean value of return on asset is 18% with a standard deviation of 11%, maximum 52% and minimum-13%. Moreover, the mean value of liquidity risk is 33% with a minimum, maximum value and standard deviation are 0%, 95% and 96% respectively. And credit risk has mean, minimum, maximum and standard deviation (24%, 4%, 49% and 14%) respectively. However, bank size has a mean value of (8.151) percent with a standard deviation of 57%, maximum (6.981) percent and minimum (6.99) present. And GDPG has a mean value of (1.7) percent with a standard deviation, Maximum and Minimum are (7.8, 4.35 and -4.3) percent respectively. While, inflation has a mean value of (4.3) percent with a standard deviation, Maximum and Minimum (6.9, 2.03 and 1.9) percent respectively.

Table1
Descriptive Statistics

Variable	Mean	Maximum	Minimum	Std. Dev.
ROA	0.188	0.1092	-0.134	0.515
LR	0.3269	0.1961	0.0001	0.9559
CR	0.2395	0.1423	0.04	0.4875

BSIZE	8.1518	0.5793	6.9808	9.2141
GDPG	1.65	4.3498	-4.3	7.8
INFL	4.3	2.0251	1.9	6.9

Notes: ROA=return on asset, LQ=Liquidity Risk, CR=Credit Risk, BSIZE = bank size, INFL = inflation, GDPG = gross domestic product growth.

4.2. Correlation Analysis

Table 2 illustrates correlation matrix of the variables. This is showing the correlation between the variables used for this study.

Table 2.
Pearson Correlation Analysis

	ROA	LR	CR	BANKSZ	GDPG	INFLATION
ROA	1					
LR	0.3301*	1				
CR	-0.4363**	-.2420**	1			
BSIZE	0.2527**	0.1879*	0.1932	1		
GDPG	0.3699**	0.049	0.0737	0.0523	1	
INFL	-0.4746*	0.0041	-0.0473	0.0112	0.0064	1

Note: ** and * indicates correlation significant at 1% level and 5% level, respectively.

Table 2 illustrates the correlation matrix portrays that bank performance is positively correlated with liquidity risk, bank size, and GDPG, whereas negatively correlated with credit risk and inflation. According to Gujarati (2003), the correlation matrix negates to be multicollinear between independents variables since all correlations are under 0.80.

Table 3.
Liquidity risk, credit risk and bank performance (ROA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA (-1)	2.226**	0.359	6.202	0.000
LR	0.348*	0.173	2.014	0.045
CR	-2.012**	0.761	-2.641	0.009
BSIZE	0.094**	0.033	2.814	0.005
GDPG	2.536**	0.781	3.246	0.001
INFL	-0.875*	0.444	-1.969	0.050
Constant	6.365	8.722	0.729	0.466
R-squared				0.834
Adjusted R-squared				0.826
F-statistic				100.93
Prob(F-statistic)				0.000
Durbin-Watson				2.78
AR (1) test				0.002
AR (2) test				0.987
Hausman Test				0.000

Note: ** and * indicates significant at 1%and 5% level respectively.

4.3. Regression Analysis

According to the Hausman test, the p-value is less than 0.05. This suggests that the Fixed effect technique is a good choice for running the ROA model. The results of the Fixed effect of GMM panel data regression of liquidity risk, credit risk and macroeconomic control variables on the performance of Iraqi banks using ROA as measurement are depicted in table 3 as below:

4.4. Robustness checks

The influence of liquidity risk and credit risk on bank performance was investigated to strengthen the study's findings. It should be noted that the tables are not on display since they take up too much room. Firstly, it is determined whether the impact of liquidity and credit risk on performance is non-linear. All variables' quadratic terms are placed into Equation here (1). The fixed effects estimate of Equation (1) with quadratic factors find insignificant impact for the liquidity risk and credit risk on bank performance in the non-tabulated findings. This implies that the association between liquidity risk and credit risk and banks' performance is linear. Secondly, for bank size, other metrics are employed. As a result, the median of total assets is used to dichotomize bank size. When a bank's total assets fall below the median, it is classed as tiny, but when total assets surpass the median, it is defined as significant. Finally, the core model's regressions are re-estimated utilizing another bank size measurement that is a dummy variable rather than total assets algorithm, hypothesizing if total assets exceed the median and 0 otherwise. The major findings in all of these instances were identical to those in Table 3.

5.   Discussion of the Findings

Table 3 illustrates that the F-statistics of the model ROA is significant, implying that there is an association amongst the dependent variable ROA and the sets of independent variables (liquidity risk and credit risk) and control variables (bank size, GDPG, inflation). The value of the adjusted R-squared indicates that the regression model that consists of liquidity risk, credit risk, bank size, GDP growth and inflation explain 82 % variations in return on asset. However, the regression result illustrates that, all the independent variables and control variable are significant to return on asset Among the two significant variables (liquidity risk and credit risk) and control variable (bank size, GDP growth, and inflation), it shows that both credit risk and inflation have an adverse association with ROA.

Table 3 also shows that liquidity risk has a positive association with ROA. Furthermore, from the table, liquidity risk coefficient is (0.348) this indicates that one unit increases in liquidity risk will increase bank performance by (0.348) unit, implying that higher liquidity risk lead to increase the banks' performance, When the liquid assets ratio is higher, it will lead to decrease the bank liquidity risk subsequently, lead to the lower premium of liquidity risk for the banks' performance (Shen et al., 2009). If banks don't liquidate their assets at a fair price, they are faced with liquidity threats. This could lead to losses and major declines in bank performance. In addition, when the bank has more liquid asset, the bank could be less exposed to lose, and when a bank has low liquid asset can need to raise its cash reserves to minimize its liquidity risk (LR). Therefore, the banks may borrow at a high rate from the market during liquidity crunch and decline their returns. The finding of this paper is consistent with the study of (Srairi, 2009).

In addition, Table 3 shows that the credit risk is found to be significant to ROA and adversely associated to ROA. Credit risk beta coefficient is (-2.012) which means that one unit rise in credit risk lead to declines the ROA by (-2.012) unit, indicating that an increase

in credit risk does not induce banks to increase their ROA. Moreover, the result illustrates that the increasing of non-performance ratio will lead to decline ROA. The potential explanation is that the non-performing loan ratio suggests the higher credit risk which could lead to additional reserves, which gradually declines bank profitability benefit and return. The results of the current study are in line with the study done by Poudel (2012). Furthermore, bank size has the beta coefficient (0.094) and the findings revealed that the bank size has a positive significant effect on ROA at 1% level. The positive relationship of bank size with bank performance is in the line with the findings of Jadah *et al.* (2020b), Jadah et al. (2016b), Arouri (2011). Bank size is generally used as a measure of the economy of scale of the banking industry. The plausible reason behind the positive influence of bank size on banks' performance is that the banks benefit from the economy of scale positively significantly associated with bank performance.

Moreover, GDP growth has the beta coefficient (2.536) and GDP growth has a positive significant impact on Iraq banks' performance measured by ROA at 1% level. The positive impact of GDP growth on bank performance in the same line of previous studies of Petria et al. (2015), Athanasoglou et al. (2008). This indicates that a good economic environment helps banks to get high profits. On the other hand, inflation has the beta coefficient (-0.875) and the findings revealed that the rate of inflation has an adverse significant effect on ROA at 5% level. The negative relationship of inflation with bank performance is consistent with Jadah et al. (2020a), Saksonova and Solovjova (2011). When predicted inflation, the banks earn income using high-interest rates at a high inflation rate and when the unforeseen bank does not change the rates on time, the cost of overheads rises more than inflation and contributes to low profits.

6.   Conclusion and Recommendation

The objective of this study is defined by the research subject, and in this area, the influence of liquidity risk and credit risk on bank performance was studied for 11 years utilizing unbalance panel of eighteen commercial banks in Iraq (from 2010 to 2020). For the econometric study, an unbalanced panel of 185 observations was employed. This sample was taken to measure the performance of the bank. ROA was taken as dependent variables while liquidity risk, credit risk were taken as independent variables and bank size, inflation and GDP growth were taken as control variables. The findings illustrated that, ROA were significantly and adversely associated with the credit risk. Liquidity risk is significantly positively associated with the ROA. On the other hand, ROA is negatively influenced by the control variable of inflation and is statistically significant. Furthermore, bank performance significantly positively associated with bank size and GDP groth. Concerning the practical aspect, this paper is useful for managers and bankers in making their decision to improve the performance of bank and draw up policies that will enhance effective financial system. This study also suggested measures that could be adopted by banks to make sure soundness in their operations.

Conflict of Interests/Disclosures
The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

Reference:
Abbas, A. A., Obayes, A. K., & Abdulkadhim, A. Q. (2019). Use of CAMELS standard in the assessment of Iraqi commercial banks. International Journal of Multicultural and Multireligious Understanding, 6(3), 24-48.

Adeusi, S. O., Akeke, N. I., Adebisi, O. S., & Oladunjoye, O. (2014). Risk Management and Financial Performance of Banks in Nigeria, *European Journal of Business and Management, 6*(31), 336-342.

Al Khatib, A. (2009). Financial performance of Palestinian Commercial Bank, International *Journal of Business and Social Sciences, 3(*3), 175–184.

Alalade, S. A., Binuyo, B. O., & Oguntodu, J. A. (2014). Managing Credit Risk to Optimize Banks' Profitability: A Survey of Selected Banks in Lagos State, *Nigeria, Research Journal of Finance and Accounting, 5(*18), 76-84.

Ali, A., & Nasir, S. Bin. (2014). Impact of board characteristics and audit committee on financial performance: A Study of Manufacturing Sector of Pakistan, *Research Journal of Finance and Accounting, 5(*7), 144-1 52.

Athanasoglou, P., Brissimis, S. N., & Delis, M. D. (2008). Bank specific, Industry-Specific and Macroeconomic Determinants of Bank Profitability. Journal of International Financial Markets, *Institutions and Money, 18(*2), 121-136. https://doi.org/10.1016/j.intfin.2006.07.001

Barth, J. R., Nolle, D. E., Phumiwasana, T., & Yago, G. (2003). A Cross-country Analysis of the Bank Supervisory Framework and Bank Performance, *Financial Markets, Institutions & Instruments, 12(*2), 67-120.

Berrios, M. R. (2013). The Relationship between Bank Credit Risk and Profitability and Liquidity*, the International Journal of Business and Finance Research, 7(*3), 105-118.

Chen, K., & Pan, C. (2012). An Empirical Study of Credit Risk Efficiency of Banking Industry in Taiwan. *Journal of Chinese Management Review*, *15*(1), 1–16

Crouhy, M. Galai, D., & Mark, R. (2005). The essentials of risk management. McGraw-Hill.

Louzis, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking & Finance*, *36*(4), 1012-1027.

Emami, M., Ahmadi, M. &Tabari, N. (2013). The Effect of Liquidity Risk on the Performance of Commercial Banks, *International Research Journal of Applied and Basic Sciences, 4(*6), 1624-1631.

Iwedi , M., & Onuegbu, O. (2014). Credit Risk and Performance of Selected Deposit Money Banks in Nigeria: An Empirical Investigation. *European Journal of Humanities and Social Sciences, 31*(1).

Gujarati, D. (2003). Essentials of econometrics. (3rd ed.). Singapore: Irwin McGrawHill.

Jadah, H. M., Alghanimi, M. H., Al-Dahaan, N. S., & Al-Husainy, N. H. (2020a). Internal and External Determinants of Iraqi Banks Profitability. *Banks and Bank Systems, 15(*2), 79-93. http://dx.doi. org/10.21511/bbs.15(2).2020.08

Jadah, H. M., Hassan, A. A. Hameed, T. M., & Al-Husainy, N. H. M. (2020b). The Impact of the Capital Structure on Iraqi Banks' Performance. *Investment Management & Financial Innovations, 17(*3), 122- 122-132. http://dx.doi.org/10.21511/imfi.17(3).2020.10

Jadah H. M, Hasan M. F, & Al-Husainy N. H. M. (2021). Dynamic Panel Data Analysis of Capital Structure Determinants: Evidence from Iraqi Banks. *Journal of Business Strategy Finance and Management, 2(*1, 2), 102-114. http://dx.doi.org/10.12944/JBSFM.02.01.11

Jadah, H. M, Murugiah, L. A., & Adzis, A. B. (2016a). The Effect of Board Characteristics on Iraqi Banks Performance, *International Journal of Academic Research in Accounting, Finance and Management Sciences, 6(*4), 205-214.

Jadah, H. M, Murugiah, L. A., & Adzis, A. B. (2016b). The Joint Effect of Ownership Structure on Bank Financial Performance: Empirical Evidence from Iraq, *International Journal of Research in Management, Economics and Commerce, 6(*7), 46-52.

Kanchu, T., & Kumar, M. (2013). Risk Management in Banking Sector- An Empirical Study, *International Journal of Marketing, Financial Services & Management Research, 2(*2), 145-153.

Kargi, H. (2011). Credit Risk and the Performance of Nigerian Banks, Ahmadu Bello University, Zaria.

Kumar, M., & Yadav, G. (2013). Liquidity Risk Management in Bank: A conceptual Framework, *AIMA Journal of Management & Research, 7(*2), 2-12.

Muranaga, J. & Ohsawa, M. (2002). Measurement of Liquidity Risk in the Context of Market Risk Calculation, Working paper, Institute for Monetary and Economic Studies, Bank of Japan, Tokyo.

Olalekan, A., & Adeyinka, S. (2013). Capital Adequacy and Bank's Profitability: An Empirical Evidence from Nigeria. *American International Journal of Contemporary Research*, *3*(10), 87–93

Olagunju, A., David, A. & Samuel, O. (2012). Liquidity Management and Commercial Banks' Profitability in Nigeria, *Research Journal of Finance and Accounting, 2(*7-8), 24-38.

Owojori, A. A., Akintoye, R. I., & Adidu, A. (2011). The challenge of risk management in Nigerian banks in the post consolidation era, *Journal of Accounting and Taxation, 13(*2), 23-31.

Petria, N., Capraru, B., & Ihnatov, L. (2015). Determinants of Banks' Profitability: Evidence from EU 27 Banking Systems. *Procedia Economics and Finance, 20,* 518-524. https://doi.org/10.1016/S2212-5671(15)00104-5

Poudel, R. (2012). The Impact of Credit Risk Management on Financial Performance of Commercial Banks in Nepal, *International Journal of Arts and Commerce, 1(*5), 9–15.

Saksonova, S. and Solovjova, I. (2011). Analysis Of The Quality And Profitability Of Assets In The Banking System And The Impact Of Macroeconomic Factors On Its Stability-Case Of Latvia, In International Conference on Applied Economics (pp. 537-548).

Salas, V. A., & Saurina, J. (2002). Credit Risk in Two Institutional Regimes: Spanish Commercial and Savings Banks. *Journal of Financial Services Research, 22*(3), 2003-224. https://doi.org/10.1023/A:1019781109676

Santomero, A. (1997). Commercial Bank Risk Management: An analysis of the Process, *Journal of Financial Services Research, 12(*2), 83-115.

Shen, C., Chen, Y., Kao, L., & Yeh, C. (2009). Bank Liquidity Risk and Performance'. Proceedings of 17th Conference on the Theories and Practices of Securities and Financial Markets, Hsi-Tze Bay, Kaohsiung, Taiwan (June).

Srairi, S. (2009). Factors Influencing the Profitability of Conventional and Islamic Commercial Banks in GCC Countries, *Review of Islamic Economics, 13(*1), 5-30.

Tafri, F., Hamid, Z., Meera, A. & Omar, M. (2009). Impact of Financial Risk on Profitability of Malaysian Commercial Bank: 1996–2005, *International Journal of Social and Human Sciences, 3(*3), 807–821.