NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
BANKING AND FINANCE PROGRAM

BANK LIQUIDITY RISK AND BASEL III LIQUIDITY AND PERFORMANCE THE CASE OF IRAQ

PARESHAN JABAR HAMAD

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ABSTRACT

BANK LIQUIDITY RISK AND BASEL III LIQUIDITY AND PERFORMANCE THE CASE OF IRAQ

This paper lays forth a proposed legislative structure for the Iraqi regime banking by depending on Basel III to strengthen the financial condition, Decisions was specifically organized by the Basel Committee on Banking Regulation and in collaboration with other representatives of the Bank for foreign Agreements to find ways to resolve the dangers to their financial structures around the world. In an explicit reaction to the financial crisis, which ripped down many major banks and revealed numerous flaws in supervision and financial systems, the Basel Committee on Banking Supervision introduced updated guidelines on the minimum threshold holding ratio and the aggregate composition of bank capital on 12 September 2010. Generally speaking, the current regulations, commonly referred to as Basel III, still provide for a minimum total capital ratio of 8%. However, in addition to increasing the 8 per cent threshold of Core Tier 1 Capital (from 2 per cent to 4.5 per cent), banks are expected to hold more treated equally in what they consider Capital Management Buffer 2.5 per cent. This thesis investigates the effects of bank liquidity risk and Basel III liquidity on performance of Iraqi banks by means of the dynamic model of FMOLS and DOLS using a panel quarterly data from 2000Q1 to 2019Q4. Liquidity coverage ratio is used in this thesis as a proxy to Basel III The result shows that results from the FMOLS and DOLS revealed that liquidity coverage Liquidity coverage ratio has a positive relationship with ROA, this means that when banks have a high liquidity coverage ratio to cover a 30 days operation, it helps in stimulating their profitability. However, liquidity risk has a negative relationship with Return on assets; this means that a percentage increase in liquidity risk will decrease ROA

by 0.61%. This research is therefore also vital for potential investors in the banking industry and the country's economy as banks are the only institutions that trade in customer funds, thus further investors are desperate to learn their investment's exposure to risk and potential consequences.

Keywords: Basel III, Iraq, Bank Performance, Liquidity Coverage, liquidity risk

ÖZ

BANK LIQUIDITY RISK AND BASEL III LIQUIDITY AND PERFORMANCE THE CASE OF IRAQ

Bu belge, finansal durumu güçlendirmek için Basel III'e bağlı olarak Irak rejimi bankacılığı için önerilen bir yasama yapısını ortaya koymaktadır.Kararlar, Basel Bankacılık Düzenleme Komitesi tarafından ve yollar bulmak için Yabancı Anlaşmalar için Bankanın diğer temsilcileriyle işbirliği içinde özel olarak düzenlenmiştir. dünyadaki finansal yapılarına yönelik tehlikeleri çözmek için. Basel Bankacılık Denetim Komitesi, birçok büyük bankayı yerle bir eden ve denetim ve finansal sistemlerdeki sayısız kusuru ortaya çıkaran finansal krize açık bir tepki olarak, 12 Eylül'de minimum eşik elde tutma oranı ve banka sermayesinin toplam bileşimi hakkında güncellenmiş yönergeler sundu. 2010. Genel olarak, genellikle Basel III olarak anılan mevcut düzenlemeler, hala% 8'lik bir asgari toplam sermaye oranı sağlamaktadır. Bununla birlikte, Çekirdek Tier 1 Sermayesinin yüzde 8'lik eşiğini (yüzde 2'den yüzde 4,5'e) yükseltmenin yanı sıra, bankaların Sermaye Yönetimi Tamponu olarak gördükleri yüzde 2,5 oranında daha eşit muamele görmeleri bekleniyor. Bu tez, 2002'ten 2019'e çeyreklik bir panel verisi kullanılarak, FMOLS ve DOLS dinamik modeli aracılığıyla banka likidite riski ve Basel III likiditesinin Irak bankalarının performansı üzerindeki etkilerini araştırmaktadır. Bu tezde likidite karşılama oranı, Basel III Sonuç, DOLS sonuçlarının likidite riskinin varlıkların getirisi ile negatif bir ilişkisi olduğunu ortaya çıkardığını göstermektedir; bu, likidite riskindeki yüzde artışın ROA'yı% 0,61 artıracağı anlamına gelir. Bu nedenle bu araştırma, bankacılık sektöründeki ve ülke ekonomisindeki potansiyel yatırımcılar için de hayati önem taşımaktadır, çünkü bankalar müşteri fonlarıyla ticaret yapan tek kurumdur ve bu nedenle daha fazla yatırımcı,

yatırımlarının riske ve potansiyel sonuçlarına maruz kalma konusunda çaresizdir.

Anahtar Kelimeler: Basel III, Irak, Banka Performansı, Likidite Karşılama

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CHAPTER 1

INTRODUCTION

2.1 Background

The productivity of the financial sector is of considerable economic significance. This direction can be accomplished by adapting the norms of the banking system to acceptable performance levels, and this has become a matter of urgency for the Iraqi banking system to carry the Iraqi economy to the verge of early growth, particularly after 2003, which marked the country's acceptance of the market economy and its openness to the global market.

Risk reduction is not unique to financial companies, but recent changes in the operating climate have been of interest to senior management (AMF, 2018). The economic crisis of the 1980s forced the central bank governors of the G-10 countries to take proactive measures to protect financial risks (Bcbs, 2015). The capital committee introduced capital requirements systems on the Basel capital cord, which initially focused on credit risk with market risk exposure requirements. The Basel arrangement was concluded after the Asian crisis of 1997 and the question of a new capital adequacy system, and the Basel 1 regulation of 1988 based on capital criteria and concentrated on the credit risk climate. Basel II of 1999 has three pillars: minimum capital criteria, supervisory oversight and business regulation. As a consequence, three categories of threats have been defined under pillar 1 as credit risk, market risk and operating risk. Banks were to assess their capital requirements using simplified regulatory standards or their own inbuilt models. The key aspect of the Pillar 2 Supervisory Review was that banks had to assess interest rate risk in their

banking book where regional regulators needed banks to conduct a stress check on their exposure to decide how banks retain capital commensurate with interest rate danger. Therefore, Pillar 2 creates complexity because it encourages employers to exert fair flexibility and right to adjust the capital allowance (Janabi & Al-Rikabi, 2018). “During the 2007-2009 financial crisis, bank regulators set up Basel III Capital standards to provide banks with adequate capital to withstand any possible credit danger, liquidity risk, and market risk problems (Commttee, 2013).

Banking networks pose unnecessary threats, though, as per Markowitz’s portfolio principle, which implies that risky investing produces further income. Regulatory bodies strive to reduce the incidence of emergencies, but banks want large income so that they can compensate their customers for 2 advanced assets. Such techniques are related to elevated risks in delivering financial facilities that carry specific financial risks (Helder, Délio & Renato, 2011). In today's volatile and uncertain environment, all financial companies face major threats, including credit risk, operational risk , liquidity risk, equity risk , foreign exchange risk, and interest rate risk, along with other business risks.

In 2003 Euro bank failed with billions of shillings of Parastatals, which triggered debilitating shortages against Iraq 's regulatory central bank, prompting the government to enact the money laundering bill and the Credit Review Bureau in 2009 (Sundararajan & Balino, 2011). Liquidity risk occurs as a consequence of a bank's failure to fulfill its commitments without incurring losses, and thus there is a danger that it may not be willing to liquidate its role at a fair and timely price (Arif & Anees, 2012). Commercial banking operations include delivering services, participating in financial intermediation, selling goods to clients, and overall risk control. This calls for the study of financial structures from a non-institutional, functional viewpoint, since the roles become more robust over a broader span of time than the entity (Rudra & Jayadev, 2009). Financial risk reduction allows financial companies to set in place precautions to rising

possible risks arising from disruptions in capital markets (Aleksandra, Dalia & Julija, 2014). Risk assessment originated as a government practice aimed at assessing the danger to investment and market organizations.

In the pre-Markowitz era, financial risk was considered a correction factor for the expected return, when risk-adjusted earnings were described on an individual basis, Markowitz showed that to measure this same risk associated with the return on each investment, a standard deviation could be used (Aleksandra et al., 2014). Such old steps are helpful in allowing an immediate favorable order for investment. In order to grasp the partnership and to reduce harm, the application of financial analysis and harm control has allowed investors to keep enterprise more profitable. Most of the investments that have been valued using financial accounting methods are increasingly judged on a risk-adjusted basis (Giorgio, 2002). Many companies track enforcement when going into operation, and this has helped risk management to minimize operational risk costs by growing the profitability and valuation of the organization. Risk management identifies losses of exposures for companies and selects appropriate techniques to reduce such exposures (Rejda, 2003).

Financial risk control became a primary determinant of certain investment decisions taken by investors. Some participants believe that option premiums represent the degree of ambiguity that the business represents on investment. When forecasting average return, option prices remain silent in this regard, particularly where traditional wisdom is applied (Peter & Jimings, 2012). Kempf, Merkle and Niessen (2012) in their analysis of more than 900 non-financial stocks on the Frankfurt Stock Exchange for the period 1962 to 2006 found that successful attitudes have a strong association between high anticipated returns and low risk, which contradicts the forecast of the conventional finance theory.

The association was greater for people with lower financial education compared to those with higher financial literacy, because they were able

to improve their cognitive interpretation when presented with the danger and return assessment challenge. Confidence thereby leads to a more informed assessment; this is confirmed by other scholars who claimed that companies may use ads to influence consumer behaviour (Fehle, Tsylakov & Zdorovtsov, 2005). However according Sumbramanyan (2008) in their study, which builds on the growing literature on behavioral finance, emotions and effective attitudes have an impact on stock ratings and returns, thus making financial decisions? According to Obamuyi (2013), the efficiency of banks in Nigeria has stayed impressive in the last decade. Profit before tax fluctuated and the opportunities for banks declined between 2002 and 2005. It may have been attributed to the global economic downturn and the reality that some of the metrics used to assess the output of the banks have been affected. In Ross (2011) the Black-Shock model is found to be surprising as an investor interest choice without understanding the anticipated return, Standard Finance Theory postulates that prudent investors prefer to weigh the danger and potential returns, leading to a strong connection between vulnerability and anticipated return that investors will use to make decisions on the basis of fundamental facts (Weber & Nosic, 2012).

In the past two decades, the financial success of several banks in Asia has become a significant subject. Many bank executives are searching for ways to boost efficiency by pursuing the primary transition of banking sector (Olweny & Shipho, 2011). As a result, stiff competition has emerged, forcing banks to implement expansion strategies. Asian banking has introduced new forms of lending with improved performance-enhancing technology, but these changes are threatening the Asian banking sector as banks have to prepare complicated balance sheets with higher risks in assets and liabilities. New financing strategies for small and medium-sized businesses with the goal of enhancing profitability have contributed to default, which is why credit risk comprises a significant portion of loans in Asia. The implementation of microfinance and Internet banking in the African banking sector has been dangerous, because most

clients are weak or inexperienced with Internet infrastructure (Szego, 1999). Rapid fluctuations in the value of the currency against other world currencies often occur in most Asian countries owing to discrepancies in accounting, economies, tax auditing standards; fiscal, diplomatic or political dispute leading to exposure to foreign exchange risk; Several other securities or assets that are sometimes traded by the banking sector may not be traded quickly without incurring losses, which may lead to liquidity risk in the banking sector, or may arise where bank liabilities cannot be met due to additional charges on the banking sector. Changes in market risk factors can also influence the fall in investment or trading portfolio valuation, including foreign exchange levels, equity values, asset prices and interest rates (Szego, 1999)"

2.2 Overview of Iraq Banking Sector

The banking industry consists of many types of entities that are now handling the existence of cash and funding, and we will seek to view these things in order to provide a good picture of the reach of our research.

2.2.1 Iraq Central Bank

It is clear that every nation has a central bank that regulates the country's existence and monetary policy. As is evident, Iraq has a body that handles the financial activities and tracks and controls the cash flow exports to the Iraqi economy. This organization was distinguished by its history and its generation. This bank was founded at the start of the creation of a new Iraqi state under its name of the Iraqi National Bank in 1947 on the remnants of the Currency Council founded by the British Mandate Authority of Iraq in London in 1931. In 1949, the Assembly was officially dissolved. The National Bank of Iraq became the Central Bank of Iraq in 1956. The duties involved distributing currencies, monitoring foreign exchange trades, managing and managing the financial sector. The Central Bank performs these positions in differing and fluctuating proportions of effectiveness for factors linked to its management style and degree of freedom as an individual entity, as well as the general

circumstance that the state has been undergoing since 2003 and so on. As regards its role in applying the judgments and requirements of the Basel Committee, the Central Bank developed the Financial Stability Division in 2017. This portion concerns the enforcement of Basel decisions and guidelines and the calculation of the quantitative effect before operation with respect to the adequacy and ratio review of LCR and NSFR2 and the assessment of conformity of Iraqi banks with foreign requirements, in particular Standard No (9).

2.2.2 Government and Private Sector Commercial Banks

Commercial banks are the primary lending vehicle and the most significant component of the financial structure that runs banking and finance in every economy. The most significant criterion for the effectiveness of the banking and political system in every nation are the effective performance of these institutions in both their groups and methods of controlling and performing their duties. The Iraqi banking network comprises of 70 corporate, governmental and private institutions. Government banks include; Rafidain Bank and Rashid Bank and the Iraqi Bank for Trade TBI as well as a variety of specific banks such as The Agricultural Bank and The Commercial Bank and The Real Estate Bank and The Islamic Bank of Nahrain, as well as the Governmental Fund for Residential Loans, which is comparatively small in market and lending ability and is not provided by the Housing Fund. Private Banks are a community of banks of private national shares, as well as other subsidiaries of international banks, with a minimum number of sixty-eight banks before the paper has been drawn up. State banks have around 94 per cent of the total deposits and net assets of the Iraqi banking sector.

2.2.3 Exchange and transfer money companies

Approximately 2,000 foreign exchange companies operating in the area of the trade of foreign currencies against the Iraqi dinar function on the Iraqi sector. There are money services firms working in the area of movement of funds to and from the Iraqi economy and functioning with

some supervision by the Central Bank and providing a small proportion of total cash flows in the Iraqi sector, and there are counter businesses that do business close to the expertise of such firms without having to do so. The power of the central bank to monitor them and some of them flows by swap and financial transfer agencies, which is not recorded in documents regulated by the central bank. The preceding overview contains the operational elements of the systems and modules that perform banking and finance activities that are subject to the criteria of the decisions and guidelines of the Basel Committee.

2.2.4 Standards of the Basel Committee and the Iraqi banking system

Concern in the problem of credit risk and liquidity in Iraq's financial sector has recently arisen, and structural and operational attempts are currently ongoing to study the practices and directions of Iraqi financial function in the light of vision2 of the Central Bank's cash policy literature and its management and regulation of the banking system. Some of the essential steps is the implementation of three Basel decisions and criteria, in particular Basel III, with a view to growing the profitability of Iraqi banks, maintaining the integrity of the financial sector and maintaining the optimum utilization of Iraqi banks' capital. The Central Bank has also been active in the review of the application of the Basel decisions since 2015.

2.3 Research Problem

Fukunaga et al. (2019) found out that the banks collapsed in the financial crisis owing to inadequate risk management and short-term wholesale borrowing, which exacerbated the collapse of a number of banks. Despite the stability and durability of the banking industry in 2015, three non-systemic institutions, chase bank and Imperial Bank Ltd. were on the receiving end in the third quarter of 2015. Dubai Bank Ltd. was liquidated in the second quarter as a consequence of liquidity risk, shortage of owner collateral for Bank of Africa and lack of sufficient compensation for non-performing loans. Charter house bank has now been put under formal supervision due to financial danger (CBK, 2015). From the 2015 CBK

survey, two entities did not need a liquidity ratio of 20 per cent and one did not need a total capital ratio of 14 per cent to the overall risk weighted asset ratio financial adequacy.

According to Bcbs (2015), banks should consider the interaction between the different risks and should define risk steps, track and manage in order to retain sufficient risk resources and account for the risks incurred. As a consequence, minimum capital is needed to bear losses in continuing operations; nevertheless, in the recent recession, bank losses surpassed the minimum capital threshold due to financial danger (BIS, 2018). This led the Basel Committee to revise the Regulation, which included an incremental risk capital charge and a stress on risk value.

In Iraq, several analysts studied the link between financial risk and financial results of commercial banks over a five-year cycle and found that credit risk, interest rate risk, foreign exchange risk and liquidity had a substantial negative effect on profitability (Muteti, 2014; Mwangi, 2014). Certain scholars find conflicting findings where the interaction was favorable and important (Lukorito, Muturi, Nyang'au & Nyamasege 2014; Tarus, Chekol & Mutwol 2012). The authors suggested more work to be carried out over a prolonged period of time in order to catch times of specific trading cycles in order to offer the issue a wider perspective. The goal of this research is to fill the information gap over a long period of time to decide the situation for Iraqi banks when long periods are considered.

2.4 Research Objective

The main objective of this thesis is to determine the influence of liquidity risk based on Basel III on financial performance of Banks in Iraq.

2.4.1 Specific Objective

1) To determine influence of credit risk on financial performance of Banks in Iraq.
2) To determine influence of liquidity coverage on financial performance of Banks in Iraq.

3) To determine influence of market risk on financial performance of Banks in Iraq.

2.5 Research Benefit

This study is applicable to various stakeholders as set out below. Iraq's government as it seeks to regulate financial institutions, especially banks, as it provides critical services, providing employment that may have a negative impact on financial risk, and for tax purposes. For investors risk control is critical when making investment decisions, there may be a lack of knowledge that can result into bankruptcy and threaten the collapse of an entire finance sector due to severe financial losses.

This research is therefore also vital for potential investors in the banking industry and the country's economy as banks are the only institutions that trade in customer funds, thus further investors are desperate to learn their investment's exposure to risk and potential consequences.

As any other study, the results will be used as a reference point for future studies, which will stimulate more research into new methods of financial risk management which bank performance. Commercial African banks will learn from this Iraqi study to enhance their productivity. Results of the study would inform them about how financial risk affects financial performance and how the different types of risk communicate with each other, thereby saving costs in conducting cost-benefit analysis at their institutions.

2.6 Scope

The study covered commercial banks licensed by the Central Bank of Iraq.

The commercial banks that were used in the study are those that had published their accounts for the periods under review and were in operation.

2.7 Limitation

In the case of secondary data, half of the data was collected from the central bank of Iraq, the remainder was obtained from the website of commercial banks, some banks did not have the correct data on their website, therefore providing only full data for 30 commercial banks used in this research instead of all commercial banks contributing to generalization which could be minimal.

2.8 Systematic Thesis

The thesis is structured systematically as follows: Chapter two gives a detailed summary of related literature on bank liquidity and Basel III liquidity, the section also discussed about the theoretical framework and the theory used. Chapter three therefore introduces the model used, variables and the method used, measurement and the role of the liquidity in the recent financial crisis. Chapter four summarizes the theory of bank regulation in Iraq, analysis and discussion of the main findings. Chapter five is centered on conclusion, implications of the findings and limitation of the study.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This sector discusses the literature on financial risks inherent in banking industry. It explores the key ideas underlying banks' risk, provides a philosophical basis, and identifies research discrepancies on the effect of financial risk on the financial output of banks in Iraq.

2.2 Theoretical Basis

The theoretical context reveals the researcher's interpretation of hypotheses and models for the principles applicable to research topics and the whole area that the research applies to (Kiaritha, 2014). The theories provide a widespread explanation of the problems affecting research as a whole, so the researcher should be aware of the theories applicable to his research field. (Kombo & Tromp, 2009). The theoretical framework allows the researcher to define the study variables that provide the general context for data interpretation and applicable sample design selection (Aguilar, 2009).

The selection of a theory depends on its suitability, implementation and explanatory power for the analysis that should be applicable to the research topic's study field, and connects the researcher.

The choosing of theory relies on its appropriateness, relevance and persuasive capacity to the analysis, which should be applicable to the scientific topic field of the test and ties the researcher to current information (Hannah, 2015). Risk management theory, intermediation theory, and prospects theory are the theories examined in this report. The

hypotheses have been tested regarding the relationships between dependent and independent variables.

2.1.1 Theory of Banking Regulation

This thesis uses the banking regulation theory to describe their variables. The aim of using the banking regulatory theory is to understand the logic behind the banking regulation established in Iraq, taking a closer look at the implications of the current financial meltdown. “Within this paper, within particular, the banking regulatory theory closely explores the justifications for banking regulation in the context of the public and private interests of Iraq.

The evolution of banking regulation is subjective and its objectives vary according to context. Consistent with technological innovations in banking, the development of international financial markets and banking services have posed challenges to the capacity of regulators to promote and maintain market stability. The fact that the path of technological innovation is far from predictable has introduced complexity and uncertainty into banking, and, as a result, the task of regulators has become inevitably more complicated. Globalization has also precipitated a degree of convergence within the changing landscape of banking regulation. It is useful to keep in mind that, typically, regulators fall behind changes in the practices of the banking sector. As a result, regulatory policies are largely ex post in nature and react to changes and developments in banking business. Regardless of how significant occurrences like the GFC have been for economies and individuals, because of the ever-changing nature of banking business, policy makers and regulators are required constantly to reexamine current regulatory concepts and to design better frameworks.

2.1.2 Risk Management Theory

David (1997) developed this theory aiming to study why risk management was required, and outlines theoretical underpinning under contemporary

bank risk management; its emphasis is on market and credit risks. The theory indicates that market and credit risks would have either direct or indirect effect on banks survival (Ozili, 2019). One would expect the credit risk indicators to influence banks profitability if there is no effective and efficient credit risk management (Ngugi, 2001). This theory identifies major source of value loss as Market risk being a change in net value of asset due to change in interest rate, exchange rate, equity and commodity prices (Wu & Olson, 2010).

Regulators are concerned with overall risk and have minimum concern with individual risk of portfolio components as managers are capable of window dressing the bank position. The need for total risk show that measurement of risk cannot be centralized as risk of a portfolio is not just a sum of component as per Markowitz theory. This implies that portfolio risk must be driven by portfolio return which is invariant to changes in portfolio composition (Beverly, 2015).

Regulatory requirements and alternative choices require managers to consider risk return trade off, Measurement of risk is costly thus bank managers compromise between precision and cost (Sovan, 2009). Trade off will have profound effects on any method adopted by the bank. They have one risk measurement goal knowing to a high degree with precision and the maximum loss that the bank will likely experience (Muhammad & Bilal, 2014). Regulators may set capital requirements to be greater than estimated maximum loss to ensure non-failure. Risk management theory has two principle approaches to measurement of risk, scenario analysis and value at risk (Sovan, 2009). Scenario analysis approach does not require distribution assumption of the risk calculation and it's very subjective and assumes that future results will resemble those of the past (Wilfred, 2006).

Value at risk (VAR) uses asset return distribution to estimate the potential losses. Monte-Carlo simulation and analytical VAR method are two principle method of estimating VAR and they enable managers to

estimate forecast. They have advantage of computational efficiency and tractability though they may show non-normal distribution experiencing fat tails reflecting inconstancy of return volatility. This method incorporates sound economic theory that incorporates market structure (Muhammad & Bilal, 2014). Where there is non-normal distribution student t is appropriate, it's useful for fat tails distribution since it's aimed at describing the behavior of portfolio returns. Analytical value at risk uses standard portfolio theory; the return distribution is described in terms of variance and covariance representing risk attributes to a portfolio over horizon (Sovan, 2009)". In this research market risk measurement utilized value at risk (VAR).

2.2 Previous Research

According to Devinaga (2010) Trade banks are mandated by regulators to maintain a certain amount of liquidity reserves. It is to insure that they have adequate resources to cope with financial deposits which has an effect on the capacity of banks to collect capital. Olusanmi, uwuigbe and uwuigbe (2013) considered 14 banks reported on Iraq's security exchange for the duration 2006-2012 in their research on the effect of risk management on banks' financial performance in Iraqi banks. Specific factors included the non-performing percentage of loans, the capital level, the loan to the overall deposit ratio, and the estimation of harm. Dependent factors for calculating efficiency is the return on equity and the return on cash. The report used a regression model and the results were that non-performing loans and loans to deposit as a measure of credit risk had no substantial effect on efficiency, although the association was negative. The scale of the bank calculated as a normal logarithm of assets as a moderating attribute had no moderating impact on the bank's results in Iraq. Evidence has demonstrated that risk reduction does not always turn into good financial results, whereas reduction decreases the incidence of systemic harm.

Hoseininassab, Yavari, Mehregan, and Khoshsim (2013) in their work on the impact of risk factors (Credit, Operational, Liquidity and Market Risk) on Banking System Performance, 15 Iran's top banks were using over a six-year stretch from 2005 to 2011. “External factors covered liquidity risk, operational risk, collateral risk and business risk. Analysis has used bank productivity as a metric of success. Panel data for the six-year duration has been included. As a result, three credit risk metrics were used for facility-to-asset level, capital adequacy and differing demand-to-facility ratios. Returns were given by facility to asset ratio and capital adequacy had a favorable and meaningful connection to performance metrics. While the varying demand-to-facility ratio had a negative and important connection to efficiency. Operational risk was measured by asset-volatility returns, stock-return volatilities, and equity holders. The findings revealed that the bond investors had a positive and significant performance relationship, while the yield on asset turnover and stock-price turnover had a positive and significant performance relationship. Business risk factors included increases in interest rates and adjustments in exchange rates. Interest rate change had a negative and significant relationship to performance, while exchange rate change had a positive significant relationship to performance. Three metrics were used to calculate liquidity risk, including facility-to-deposit ratio, long-term facility-to-long-term deposit ratio and cash-to-deposit ratio. The findings revealed that the facility-to-deposit ratio and the long-term facility-to-long-term deposit ratio had a negative and significant connection to efficiency, whereas the cash-to-deposit ratio was positive and significant. The writers proposed more work to assess the effect of exchange rate danger and other factors on banks ' performance by utilizing both input and output to calculate banks' performance.

Bacha et al. (2014) investigated on the Influence of Financial Risks on The Output of Firms in Iraq, the aim of the analysis was to figure out how credit risk affects the performance of firms, to figure out how liquidity risk affects the performance of firms, to evaluate the influence of market risk

on the performance of firms Evaluating how foreign exchange rate risk affects the performance of firms. The results revealed that there was a substantial association between risk factors and financial output. The analysis concluded that financial threats had a larger effect on the firm's results. As a consequence, the research showed that credit risk impaired lending and financing by financial institutions, foreign exchange risks make businesses understand unforeseeable losses that have an effect on results.

Ibrahim & Alagidede (2018) investigated the effect of credit risk on management of the financial results of commercial banks in Jordan. 13 commercial banks have been selected to share their opinions on all Jordanian commercial banks. The credit risk metrics utilized in the study included capital adequacy, non-performing loans on gross debt, default cost on credit facilities, and leverage ratio. Quality was calculated by asset returns and stock returns. In this study stationarity, the findings showed rejection of the unit root null hypothesis of stationarity were evaluated using the Augumented Dickey fuller check on the first discrepancy. In the first model utilizing return on assets (ROA), the non-performing level of loans had a favorable association with ROA, although the ratio of Debt and Allowance for losses to Total facilities had a negative impact on the financial output of the banks. The ratio of capital adequacy, the ratio of credit interest to credit facilities and the ratio of leverage had no effect on the financial performance of banks. The second scenario in which the return on equity ROE was used the non-performing assets on the Gross Loan Ratio had a beneficial impact on the financial results of the banks. The Leverage Ratio and the Provision for Loss of Facilities to the Net Facility Ratio had a negative effect, while the Capital Ratio, the Credit Interest to the Credit Facility Ratio and the Leverage Ratio had no effect on the financial performance of the banks.

Karim et al. (2017) investigated the effect of financial risk on Islamic banks in Malaysia. Quality was calculated by asset returns, independent

variables were default risk, liquidity risk and rate of return risk, analysis was influenced by GDP, inflation rate and bank scale. Sixty-five major Islamic banks were included in the analysis over a span of eight years from 2004 to 2011. Panel data have been used and the root unit panel test was used where the root unit type fisher (ADF) was used. All variables were stable except inflation, which was stagnant after the first gap. The conclusions were that there was a substantial negative association between credit risk and the rate of return value. Liquidity risk had a positive relationship with (ROA) but was not significant and therefore not considered to be the absolute determinant of the full profitability of the Islamic Bank. The regulation effects of the scale of the bank and GDP were unfavorable and positively linked to ROA, but not important.

Al-Khouri (2011) Conducted financial risk research and performance of Islamic banks in the Gulf Cooperation Council (GCC). Specific factors include liquidity risk measured by total loans at total deposit ratio, collateral risk measured by total loans at total asset ratio, debt risk measured by equity capital at total asset ratio, and operational risk calculated by cost-to - income ratio. The main variable was the contribution on income. Gross domestic product has been used as a reference measure. Eleven banks from a total of 47 banks were chosen for the period 2000 to 2012, of which three were from Kuwait, two from Bahrain, three from the UAE, one from Qatar and one from Saudi Arabia. The results of the regression model found that capital risk and operational risk had a detrimental and substantial relationship to equity returns, whereas credit risk and liquidity risk had an insignificant relationship to equity returns. The gross domestic product did not have any regulation impact on the plan. The report suggested that more focus should be put on capital allocation and operating risk in order to boost results.

Adeusi, Akeke, Obawale and Oladunjoye (2012) Work on risk control and financial efficiency of banks in Nigeria. Secondary statistics were taken from accounting reports for 4 years and the financial statements of 10

banks were included in the estimation methodology of this research group. Results also demonstrated that there is a substantial link between bank success and risk reduction. Better risk control in terms of controlled assets, a decrease in the cost of poor and questionable loans and a debt-equity ratio culminated in improved bank results. It is therefore of vital importance that banks practice proactive risk control and safeguard the investments of banks and preserve the interests of investors. Umar, Muhammad, Asad, Muhammad and Mazhar (2015) in their report on the effect of bank liquidity vulnerability on the success of traditional banks in Pakistan. A list of 10 banks from Pakistan's banking industry has been included. The separate variables were the present level and the loan-to - deposit level, while the main variable was the return on assets and the return on liabilities. The results showed that both the current level and the loan-to - deposit level had a favorable relationship for both the return on assets and the return on liabilities that were important for Pakistani banks. In this study, as liquidity risk increases the efficiency of Pakistani banks.

Hansen (2009) published a report on the nature of strategic foreign exchange risk management among Danish medium-sized non-financial, non-listed firms engaging in international operations. The analysis found that foreign exchange vulnerability was positively associated with financial results. The scale of the business had a major beneficial connection to results. Ahmed, Akhtar and Usman (2011) carried out a study on risk management practices and Islamic banks. Research aimed at assessing the firm's degree of influences that have greatly affected the risk control activities of Islamic banks in Pakistan. The analysis concluded that the scale of Islamic banks had a favorable and statistically relevant connection to financial threats, including credit and liquidity threats.

Imamul and Arif (2015) In their research on the correlation of financial risk with financial performance and the perspective of the Indian Banking Sector, the objectives of the study were to evaluate the relationship between credit risk and financial performance of commercial banks in

India and to measure the effect of liquidity threats on the financial performance of commercial banks in India, and to measure the influence of interest rate risk financing. Financial details is obtained from the annual reports of the chosen commercial banks and the annual reports from the websites of the banks. The work covered a span spanning five years from 2008 to 2012. The study included the identification of ten leading institutions, five from the public sector and five from the private sector as members on the basis of total assets. The review of the report found that Interest Rate Threat and Liquidity Risk were negligible to results, whereas Solvency Risk Capital Risk and Loan Risk were statistically important to the financial output of Commercial Banks in India. The study suggested that banks would re-engineer the traditional risk management framework to provide sufficient resources and build regulatory expertise to reduce legal or litigation threats, as well as adopt constructive strategies to managing financial risks.

Virginie (2015) work explored the impact of capital and liquidity levels on the competitiveness of banks depending on their scale. The data used was collected from the government, the Dijk desk's daily financial database. The study provided the total financial results of 1,270 European banks for the period 2005 to 2012. The banks were split into three classes of 346 commercial banks, 487 cooperative banks and 835 savings banks. Independent variables included bank money, liquidity risk and credit risk. The results were that Liquidity vulnerability had a favorable connection to success that was important to small banks. This meant that on average small banks had less demand deposits than large banks, although large banks had better access to external funds than small banks. Credit risk demonstrated a detrimental connection to the competitiveness of banks, which was important for major banks. As a consequence, overall debts were correlated with reduced productivity for major banks, while higher provisions suggest non-performing rates with lower asset quality.

Şerife and Ugur (2012) investigated the effect of macroeconomic variables on stock returns for listed companies in Bosnia and Herzegovina. Forty-five companies from 11 industries were selected to examine the position of each macro-economic element in the return on stocks. The following indicators were used: inflation rate, exchange rate, interest rate, unemployment rate and current account deficit the final findings showed that the exchange rate and interest rate were the most important variables that affected the company's stock price volatility. Stock returns for companies in different industries have been much related to interest rates and exchange rates".

2.3 Conceptual Framework

Conceptual framework in research is regarded as the graphical representation of the relation between variables in a study based on ideas generated from the interpretation of analysis by researchers (Borg, 2005)." The dependent variable for this research was financial performance measured by asset return (ROA) and the independent variables include; liquidity risk, credit risk, and market risk that were proposed by Basel III.

Risk management theory suggests that financial and credit threats will have either a direct or indirect effect on the viability of banks included in the conceptual context. In risk management philosophy, the approach of managing monetary production of deposits and funding of the economy influences the solvency and liquidity of mediators and the restoration of loans resulting in liquidity risk and credit risk that have been included in the conceptual system. Al-Khouri (2011) Investigated on the effects of bank-specific risk factors on the efficiency of commercial banks in the Gulf Cooperation Council (GCC) countries; liquidity risk and credit risk were recognized and were therefore also included in this study. Muteti (2014) used credit risk, interest rate risk, foreign exchange risk to measure financial risk management and its impact on the financial performance of commercial banks in Iraq, and also embraced similar policies".

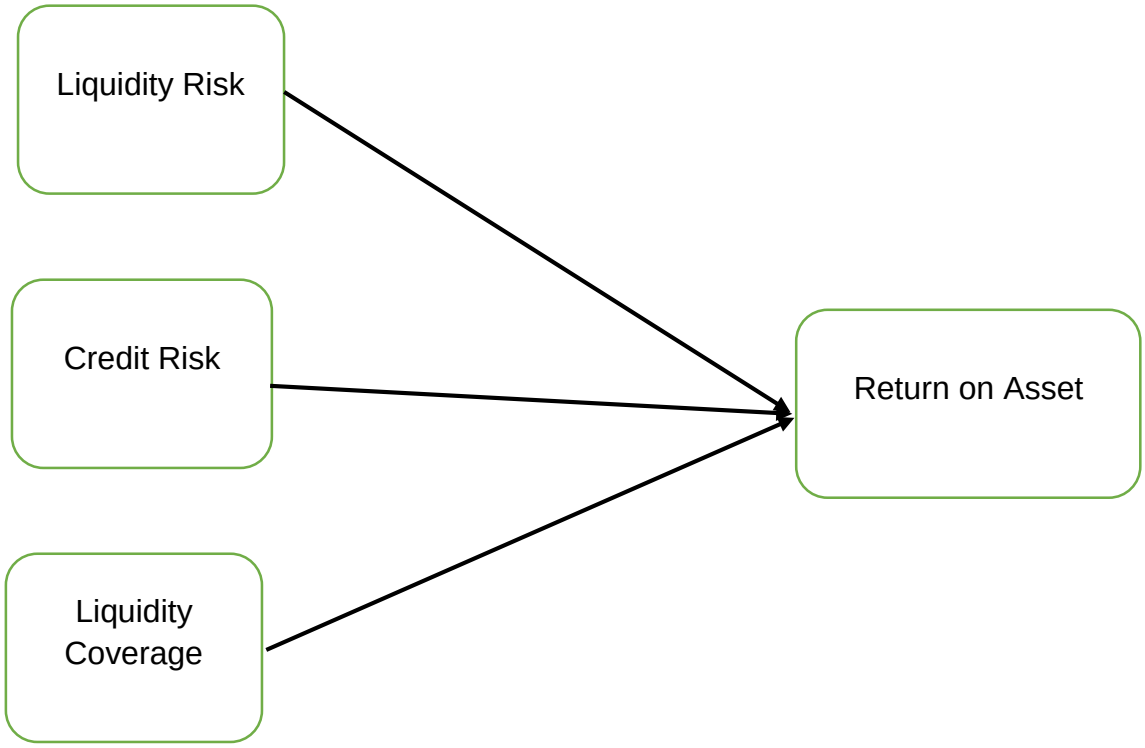

Figure 1 Conceptual Framework

2.4 Variable Definition

Many foreign organizations prefer to follow risk-based management, where risk evaluation is essentially conducted in order to devise a risk-based audit strategy. Risk management is known to be an autonomous practice aimed at detecting, tracking and managing risk. Risk-based management involves the recognition of danger associated with the operations conducted by companies, the evaluation of the efficacy of the control mechanism for controlling market risk, and ultimately the creation of risk matrix for banks. Risk management can use both a qualitative and a quantitative methodology when business-related and qualitative data are used where behavioral finance assessments are made on-site (Fukunaga et al., 2019). This segment discusses the variables included in this study and outlined in the analytical context the independent variables

include credit risk, interest rate risk, liquidity risk, equity risk, foreign exchange risk, bank size as a control variable and bank output as a dependent variable.

2.4.1 Liquidity Risk

Liquidity risk management includes the retention of appropriate funds, marketable assets and the provision of liquidity for dedicated credit facilities (CBK, 2016). “BCBS (2008) claims that the basic role of banks in turning short-term deposits into long-term loans renders banks susceptible to liquidity risk. A liquidity deficit in a single bank may have a system-wide effect. The global sub-prime crisis of 2007 to 2008 demonstrated the value of liquidity reduction in the financial industry. The Basel Committee published its 'Principles for Sound Liquidity Management and Oversight' and included two aspects of liquidity, liquidity funding and business liquidity. Liquidity capital relates to the flexibility with which a company may receive funds. Market liquidity is strong because it is possible for a company to collect funds by selling an asset, rather than investing against it as leverage. Liquidity is a risk factor as the size of the effect varies spontaneously over time (Tsaurai, 2018).

Mustafa et al. (2015) create a number of metrics for calculating liquidity risk, including cash in hand to asset ratio, liquidity ratio, lending fund-to-deposit ratio, cash balance ratio, deposit-to-credit ratio, lending fund-to-deposit ratio, and debt-to-deposit power. Amizuar et al. (2017) in their work on Liquidity Threat and Efficiency, Bahrain and Malaysian Banks The liquidity risk metrics used by the panel for the duration 2008 to 2014 included improvements in the current level, increase in total asset loan performance, bank capitalization, asset turnover, loan-to - deposit level, management capacity, interbank ratio and bank scale. As a consequence, deposit stability, bank capitalization, total asset-loan-volatility growth, management performance, bank size and loan-to - deposit ratios are essential to liquidity risk. Deposit stability and liquidity risk have a strong negative association for Bahraini banks, which is why higher deposit

stability contributes to lower liquidity and thus raises liquidity risk exposure. Test also showed that the bank capitalization coefficient had a favorable and important association with the liquidity exposure of all banks.

Karim et al. (2017) find liquidity exposure from three viewpoints. The first is called where the bank cannot collect funds at a fair expense owing to factors relating to the degree of interest rates, the scale of deposits and difficulty in funding the counterparty. Second, liquidity is seen as a safety cushion that helps to gain in difficult situations. As a result, liquidity risk is a situation where there is misunderstanding and short-term assets are insufficient to pay for short-term liabilities. The last view is when the liquidity danger is perceived to be a serious case. These circumstances occur where there is a significant loss that causes liquidity issues. Large-scale withdrawal of deposits may give rise to liquidity risk in the banking sector, but may not be a significant cause of liquidity danger. Many reasons that can contribute to liquidity risk include significant obligations or heavy exposure to long-term debt, and they can face liquidity issues (Rajan & Zingales, 1998).

BCBS (2008) released guidelines for sound liquidity risk control and oversight, underlining basic concepts for the management and monitoring of liquidity risk. As a result, banks should have a risk management framework that ensures that liquidity assets are sufficiently available to survive the stress environment (Kim, 2015). The principles recommend that banks identify, monitor, measure and control potential cash flows related to off-balance-sheet liabilities and contingent liabilities as most providing loans and overestimate liquidity risk. Abdulla, Atheer and Delan (2017) suggest that the prerequisite for successful liquidity management is that there should be strict internal and external controls on day-to-day activities, and that there should be contingency measures in place should they encounter liquidity.

Hashemi et al. (1996) examined the profitability determinants of Bangladesh's banking sector, which assessed bank-specific and macro-economic determinants. Research results have shown that liquidity rates greatly impact the profitability of the firm, which is compatible with (Dang, 2011), which showed that a sufficient degree of liquidity is favorably linked to the profitability of the business. Certain scholars considered contradictory results that the connection between liquidity vulnerability and bank productivity in Iraq was negligible (Ongore & Kusa, 2013).

Muriithi, and Waweru, (2017) the research looked at the impact of liquidity risk on the financial results of commercial banks in Iraq for the years 2005 and 2014 across all 43 listed commercial banks in Iraq. The separate liquidity exposure factors comprised the liquidity availability ratio and the net secure financing ratio and the contingent output indicator was the equity return (ROE). Data was collected from the website of the commercial banks and the Central Bank of Iraq. Panel data techniques on the estimation of random effects and the generalized method of timing were used. Findings have shown that the net stable borrowing level is adversely correlated with bank profitability in both the long and short term, although the funding coverage ratio for commercial banks in Iraq has not been important in both the long and the short term". Liquidity coverage had a negative effect on financial performance thus bank's management should pay attention to the liquidity management.

2.4.2 Credit Risk

Bank advances are a significant source of collateral danger Such examples cover interbank trades, foreign exchange, export borrowing, derivative contracts, shares, debt and the expansion of the guarantee commitment. The sound processes developed by the Basel 1 Committee require the creation of a credit risk framework for which the Board of Directors is responsible for regular evaluation and execution of the credit risk plan authorized by the Board of Directors, accompanied by the

development of protocols for managing, tracking and assessing credit risk (BCBS, 1999).

Second, banks can work under reasonable credit granting guidelines by establishing total credit limits at the level of individual lenders, based on the risk, and should provide a mechanism to authorize a new loan expansion of the credit limits, which should be carried out within a limited period of time (Muhammed, 2012). Third, banks should maintain the appropriate credit management and monitoring process that is underway, the management system should monitor the overall composition of the credit portfolio and develop an internal risk rating system to manage credit risk. Potential future changes in economic conditions should therefore be taken into account during the credit and credit exposure assessment (BCBS, 1999). Banks need to ensure sufficient performance of credit risk by establishing an independent on-going credit assessment system and ensuring that the granting of credit is properly managed and within credit limits and early remedial action on deteriorating credits and similar work situations is in place. The principles of credit management applicable to banking institutions include six Cs of character, capacity, interpretation, legitimacy, collateral and circumstances (Aduda & Gitonga, 2011).

In order to maintain an adequate level of profitability, most banks take excessive risk but are at higher risk of becoming bankrupt. Major banking problems relate to low credit standards for borrowers and poor portfolio management. Muhammed (2012) has a credit risk that can lead to credit events such as bankruptcies, failure to meet due obligations. Owojori (2011) suggests that the available figures from liquidated banks suggest that the failure to obtain loans and deposits provided to managers-related consumers was a significant contributor to distress. Anila (2015) was used as one of the independent variables in his research paper on factors affecting the performance of commercial banks in Albania. Capital adequacy had a clear negative and important connection to the success of the banks. Many scholars who also obtained conflicting reports where

capital adequacy has provided a favorable association with success (Frederic, 2014), related observations from other prior studies have been produced (Jobst, 2007).

Rama & Novela (2015) investigated the effect of credit risk reduction on the competitiveness of commercial banks in Europe. The main objective of the study was to investigate the effect of credit risk management and profitability performance of commercial banks in Europe as measured by ROE and ROA while NPLR and CAR are defined as credit risk management proxies. Over the span from 2007 to 2012, 47 biggest commercial banks in Europe have been included. The findings show that credit risk management had positive effects on the profitability of commercial banks. NPLR has a direct impact on performance between the two proxies of credit risk management, while CAR has an insignificant impact on performance. That being said, the correlation between all proxies was not stable between 2007 and 2012. The research suggests that the NPL be controlled by management. We will assess the willingness of the bank to repay while borrowing.

Agbaeze & Onwuka (2014) studied Nigerian banks' credit risk and performance for the years 2004 to 2008 has found a negative relationship between credit risk and performance. Different results from other scholars whose research found a negative relationship between credit risk and efficiency in Australian state housing authorities (Peter & Peter, 2006). Hamed, Sanaz and Hadi (2013) Research into the effects of the credit risk index on shareholder value of commercial banks in Iran showed negative impacts of capital adequacy and degree of questionable debt on total shareholder value loans. Throughout their study, credit risk indicators had a positive association with results. This result suggested that Nigerian banks would improve their potential for credit processing and loan administration.Nyumuah(2018)

His work on banks in Nigeria for the years 2006 to 2010 found that credit risk had a negative effect on results, as concluded with other writers.

2.4.3 Market Risk

Market danger arises as an individual suffers damages from negative stock price fluctuations arising from adjustments in the markets of fixed-income securities, assets, equity products, off-balance-sheet contracts and currencies (Zhang et al., 2012). Business danger is the loss arising from negative shifts in business conditions and values, such as product costs and stock markets (Fukunaga et al., 2019). The Basel Committee on Banking Supervision has demonstrated that the availability of knowledge on specific risk indicators to market investors is essential to a stable banking system. Reduces knowledge asymmetry and aims to facilitate the comparability of bank risk profiles (BCBS, 2015). This is significant because the actions of shareholders, investors and other market players of banks affect the risk-taking decisions of bank managers (Kendall, 2012).

Amizuar et al. (2017) studied the vulnerability of stock returns for Thai commercial banks using the GARCH methodology to analysis. As a consequence, market risk was a major component of the resilience of bank stock returns, and the relationship was favorable and important. Big banks are more sensitive than medium and small banks to changes in market conditions. Strong market power banks would have higher profitability and low market power banks would have lower profitability. For this study, using secondary data, the risk value (RM) was used to calculate market risk.

In Basel II, the capital system is defined by three frameworks Pillar I, which specifies the minimum statutory capital criteria that is focused on the concepts of liquidity, demand and operating risk; Pillar II, which establishes the Bank's supervisory oversight mechanism and Pillar III, deals with transparency standards that allow market participants fully informed of all banking risks. Business danger assessments have been developed using different methodological methods. VAR Monte Carlo simulation is a method of simulating a random cycle that describes a

portfolio after a proper simulation; one is able to acquire a loss distribution, thereby obtaining VAR for various probabilities as achieved with historical simulation (Amizuar et al., 2017). The VAR variance covariance approach has two premises, the first is that the portfolio is constant and thus varies in the portfolio price. The second is the rising standard distribution of return properties. That promise is supposed to be standard for portfolio gains and portfolio losses (Idenyi et al., 2017).

Markowitz portfolio risk under the Markowitz portfolio theory implemented value at risk (VAR) which changed risk measures and hence the systematic usage of derivatives is part of business risk management, which has the benefit of summarizing the exposure of banks to multiple risks (Ibrahim & Alagidede, 2017). The metrics used to evaluate VAR also include time period that relies on the maturity of the portfolio. For a more precise calculation of the developed bank label, it advises use a limited time horizon, however for banks capital adequacy in relation to market risk exposure it is advised to use a longer period of time Tiryaki et al. (2019) the trust likelihood represents the aversion of banks to capital costs that would surpass VaR. Morgan developed VAR in 1994 to estimate the expected losses for a fixed portfolio at a time t and the probability value p to measure the total risk of a single portfolio (Shahbaz et al., 2018). It became frequently used in risk assessment since the financial crash of 2008 and was generally employed to calculate business risk (Masih et al., 2009).

2.4.4 Liquidity Coverage

Liquidity seems to be at the forefront in recent decades, when numerous companies have encountered financial challenges given their sufficient amount of funding and productivity. This was the control of their reserves that placed them under severe pressures and ultimately prompted the acts of central banks to stabilize the financial system globally. Under the current regulatory system, a high LCR reflects the capacity of the bank to withstand shocks arising from financial and economic stress; thus, it is a

vital indicator of the financial resilience of the entity and a strategic priority that determines the way the bank conducts business.

The implementation of the Basel III regulations – and in particular the LCR norm would eventually contribute to major improvements in the bank funding model. Financial institutions (FIs) will and that not only focus on the quality of their assets, but will also direct their dependence on certain types of liabilities, fund their balance sheets and ensure that net cash outflows remain as low as possible in a specified 30-day liquidity stress situation. As a consequence, the reliance on stock market finance would decline in favor of wholesale finance.

As banks are scheduled to follow the LCR requirement consistently, they would need to ensure that high-quality assets and LCR-friendly deposits remain on their balance sheets. Focusing on unsecured bank financing, a most attractive deposits are those generated by transactional activities of clients, such as money management and guardianship. Within the above-mentioned liquidity-stressed case, these forms of liabilities are supposed to have a fairly small run-off factor and are thus more attractive to the banks. Nevertheless, they would need to show to regulators that such adjustments, known as operational, are specifically related to and necessary for the operating operations of their companies.

The liquidity coverage is a new ratio for Basel decisions, which can measure the ability of banks to face the risks of lack of liquidity ratios in banks and in the short term 30 days and less, and it is one of the ratios that support the capital adequacy ratio, and it has been found through measuring the liquidity coverage ratio that the coverage ratios for banks. All of the research sample was higher than the minimum approved by the Basel Committee in its third criterion, meaning that Iraqi banks are able to cope with financial crises arising from a lack of liquidity, and also that capital ratios are high ratios that were able to enhance liquidity ratios, as the sources of financing represented Property rights and other liabilities.

Which correspond to the uses of the bank in the budget equation, shows that the proportion of the sources of funding the rest without the use represented in the form of criticism of high quality that came all the banks ratios higher than 100%, the percentage approved, meaning that Iraqi banks are able to cover all requests fast liquidity easily. This is because bank capital is sufficiently strengthened.

2.3 Overview of Basel III Framework

“Basel III, which is alternatively referred to as the Third Basel Accord or Basel Standards, is part of the continuing effort to enhance the international banking regulatory framework. It specifically builds on the Basel I and Basel II documents in a campaign to improve the banking sector's ability to deal with financial stress, improve risk management, and promote transparency. On a more granular level, Basel III seeks to strengthen the resilience of individual banks in order to reduce the risk of system-wide shocks and prevent future economic meltdowns.

Basel III introduced new requirements with respect to regulatory capital with which large banks can endure cyclical changes on their balance sheets. Throughout durations of credit expansion, additional capital must be set aside by the banks. During periods of credit contraction, capital requirements can be eased. The new guidelines also introduced the bucketing method, in which banks are grouped according to their size, complexity, and importance to the overall economy. Systematically important banks are subject to higher capital requirements.

Basel III likewise introduced leverage and liquidity requirements aimed at safeguarding against excessive borrowing, while ensuring that banks have sufficient liquidity during periods of financial stress. In particular, the leverage ratio, computed as Tier 1 capital divided by the total of on and off-balance assets minus intangible assets, was capped at 3%. Bank's total capital is calculated by adding both tiers together. Under Basel III, the minimum total capital ratio is 12.9%, whereby the minimum Tier 1

capital ratio is 10.5% of its total risk-weighted assets (RWA), while the minimum Tier 2 capital ratio is 2% of the RWA.

In December 2017, the Basel committee agreed on a new regulatory framework denoted the ‘Final Basel III Framework’. The accord was subsequently supported by the G20 Finance Ministers and Central Bank Governors Meeting. The background for the framework was notably an identified variability in internal capital adequacy models that was not seen as being driven by a corresponding variation in underlying risks facing different banks. In other words, banks might not have enough capital to keep the financial system stable in a crisis because they underestimate potential losses.

The Basel III system is a core aspect of the Basel Committee's reaction to the global financial crisis. This tackles the limitations of the pre-crisis regulatory environment and establishes a legal basis for a stable financial sector that serves the real economy. The main goal of the revisions implemented in the system is to reduce the unsustainable volatility of risk-weighted assets (RWAs). During the height of the global financial crisis, a broad variety of creditors lost confidence in the risk-weighted capital ratios published by banks. The Committee's own empiric analyzes have demonstrated the troubling degree of uncertainty in the RWA measurement of the banks. The reform of the regulatory system would help regain confidence in the estimation of the RWA.

2.4 Research Gap

Most developing countries have started deregulating and reforming financial systems, transforming financial institution into effective intermediaries and extending financial services to all segments (Strutt, 2005). The literature reviewed indicates that previous researchers only concentrated on a few variables of financial risk while this study covers additional important variables that have been omitted by previous studies like foreign exchange risk, interest rate risk, market risk and the interaction between the various types of risks. Aduda and Gitonga (2011) in their

research to establish the relationship of credit risk management and profitability in commercial banks in Iraq.

A random sample of 30 financial institutions was taken from the population of 43 licensed banks in Iraq. The data for the banks was extracted from the banks' annual reports and financial statements for a ten year period 2000-2009. Non-performing loans ratio was used as a proxy of credit risk. The findings credit risk was significant and negatively correlated to profitability. The authors recommended that further research should be carried out to determine the relationship between other various risk exposures including operational risks, foreign exchange risk, liquidity risk, and interest rate risk faced by commercial banks and their effects on performance"

CHAPTER 3

METHODOLOGY

The chapter reflects on data acquisition, retrieval and interpretation approaches used to discuss the study objectives. The chapter contains the instruments and methods used for the analysis of data and the subject demographic of the research sample. That was accomplished by discussing the test and sample formats included in the report, data processing, and analysis to be used.

3.1 Data

This thesis investigates the effects of bank liquidity risk and Basel III liquidity on performance of Iraqi banks by means of the dynamic model of FMOLS and DOLS using a panel quarterly data from 2000 to 2019 of 15 banks in Iraq. Liquidity coverage ratio is used in this thesis as a proxy to Basel III; the data for return on asset, liquidity risk, and credit risk and liquidity coverage are obtained from Central Bank of Iraq Data Warehouse data.

LROA=f (LLR, LCR, LLC)

Where LROA represents log return on asset, LLR represent log liquidity risk, LCR is log credit risk and LLC is log liquidity coverage

3.2 Definition and justification of variables

The explanatory variable in the research is return on assets, which was measured by the “Net income/total earning assets. The first dependent variable is LLR at time t denoted by LLR, which is “Current assets/ current liabilities”. The second dependent variable is Liquidity coverage denoted by LLC, which was “measured by the Bank high-

quality liquid asset/total net cash flow over 30 day stress period". The third dependent variable is credit risk denoted by LCR and is calculated by all " debt of income ratio"

Table 1 Definition of Variables

Symbols	Variables	Formula
LROA	Return on Assets	Net income/total earning assets
LLR	Liquidity Risk	Current assets/ current liabilities
LCR	Credit Risk	Debt to income ratio
LLC	Liquidity Coverage	Bank high-quality liquid asset/total net cash flow over 30 day stress period

Source: prepared by author

3.3 Stationarity Test

The essence of stationarity thrives to ensure that the obtained results are not spurious. Breitung (2000) "assert that non-stationarity is a situation which occurs when the model variable has a unit root. Tests are therefore conducted to determine if the model variables have a unit root or not". The estimation of the dynamic model requires the variables be either composed of stationary and non-stationary variables at levels, but all of them must not be integrated of the order two (Pesaran et al., 2001). The characterizing feature of test is that there are initially undertaken at levels: 1st difference, then 2nd difference and either at constant with no trend, or at constant with trend.

3.4 Long-run estimation

Once the stationarity between all the variables are confirmed by the means of ADF test, the Johansen test of cointegration Johansen (1988) and Phillips & Hansen (1990) is employed to circumvent spurious regression. Then long-run association among the considered variable can employed using of a single vector cointegration procedure. Even though many procedures can be employed is appropriate for testing

cointegration. However, the Fully Modified OLS of Phillips & Hansen (1990) is employed in this thesis. The technique has the quality of achieving asymptotic efficiency by taking into thoughtfulness the presence of serial correlation and to hamper the endogeneity problems between the independent variables. The Dynamic OLS developed by Stock & Watson (1993) is employed to check for the robustness in confirming the dependability of the FMOLS outcome. The DOLS methodology additionally has the quality of averting feasible special effects of endogeneity that might occur between the independent variables. If cointegration is established between the dependent and independent, the single cointegration techniques can be employed on the individual order of series. Thus to assess the long-run regression, the FMOLS and DOLS are used. Model expression:

$$LROA=\beta_{0i}+\beta_{1i}LLR+\beta_{2i}LCR+\beta_{3i}LLC++e_{it};$$

Where LROA represents log return on asset, LLR represent log liquidity risk, LCR is log credit risk and LLC is log liquidity coverage and ε is the error term.

3.5 Data Analysis

E-View statistical package was used for analysis all through. Quantitative data was analyzed using descriptive and inferential statistics. “Multiple linear regression analysis was used to test the combined effect of all the independent variables.

Using the conceptual framework together with objectives of the study, the research used secondary tools. Panel data from financial statements of commercial banks in Iraq were obtained from the central bank of Iraq data base and individual banks website. Financial ratios were used to measure various financial risks including credit risk.

Multiple regressions for a univariate analysis were conducted after the data converted to their natural logs to deal with the problem of large numbers and eliminate heteroscedasticity. Stationarity of the data was

checked; where multiple unit root test was done and due to presence of unit root the first difference was done on the data to have the data stationary, the reason for having data stationary was to obtain a meaningful sample mean, variance which would show future behavior if series was stationary. Hausman test was done and random effects model was adopted. Linear regression for each variable was undertaken then significant variables were retained and used to test the combined effect of independent variables”

CHAPTER 4

RESULT AND DISCUSSION

4.1 Statistical Results

“The objective of the study was to determine the influence of financial risk on performance of banks in Iraq. From this overall objective, this study aimed at finding out the influence credit risk, liquidity coverage, and market risk on financial performance of bank in Iraq. The research sought to determine the influence of Basel III as a major element on financial performance of Banks in Iraq. This chapter presents the summary of major findings of the study, the conclusions of influence of financial risk on banks in Iraq. Finally, the chapter highlights important recommendations for further research.

4.1.1 Descriptive Statistics

Descriptive statistics was used to determine the statistical properties of the model in order to select the proper functional form of the model, statistical analysis technique was used and mean, standard deviation, skewness, kurtosis, maximum, minimum and jarque bera values of the variables overtime were calculated for secondary data using E-views software”

Table 2 Descriptive Statistics

	LROA	LLR	LCR	LLC
Mean	0.640607	1.230482	2.039980	2.413461
Median	0.662061	1.246472	2.052167	2.424991
Maximum	1.408508	1.614418	2.081285	2.782533
Minimum	-0.478319	0.613491	1.920949	2.048619
Std. Dev.	0.337447	0.210984	0.034729	0.141632
Skewness	-0.340350	-0.590926	-1.219603	-0.066565
Kurtosis	2.919871	3.337946	4.127738	2.990500
Jarque-Bera	5.167513	16.62078	79.43673	0.195953
Probability	0.075490	0.000246	0.000000	0.906670
Sum	169.1203	324.8472	538.5548	637.1537
Sum Sq. Dev.	29.94786	11.70721	0.317206	5.275712

Source: computed by author with Eviews

The descriptive statistics highlighted that Return on assets, liquidity risk, credit risk and liquidity coverage of the banks in Iraq have an average annual growth rate of 0.6%, 1.2%, 2% and 2.4% respectively. Likewise, the series have recorded a highest value of 2.7% and minimum of 0.03%.

4.1.2 Unit Root Result

Table 3 Unit Root Test of Breitung

Variables	Level intercept &	Trend	First Difference	
	T-statistics	P Values	T-statistics	P Values
LROA	0.64483	0.7405	-405499	0.0000***
LLR	0.85010	0.8024	-6.96372	0.0000***
LCR	2.72117	0.9967	-1.40940	0.0094***

LLC	-1.09977	0.1357	-1.7975	0.0361**

Note: “LROA is return on asset, LLR is liquidity risk, LCR is credit risk and LLC is liquidity coverage “

Source: computed by author with Eviews

The “unit root” outcomes of Breitung (2002) presented that the variables contain “unit roots at I(0)” and are nonstationary. Though, at first difference, they are stationary and henceforth the postulation of a unit root is uncontrolled (LLR, LCR, LLC and LROA are all significant at1%).

4.1.3 Kao Cointegration

Table 4 Kao Cointegration

	t-statistics	P value
ADF	-2.940881	0.0016
Residual variance	0.014339	
HAC variance	0.012088	

Source: computed by author with Eviews

The Kao cointegration technique revealed that there is a long term cointegration between the series, hence the hull hypothesis of no cointegration has been rejected at 1% significance.

4.1.4 FMOLS

Table 5 FMOLS

Variables	Coefficient	Prob.
LLR	-0.327827	0.0056
LCR	-9.362670	0.0000
LLC	1.029691	0.0000
R2	0.570158	
Adj. R2	0.556348	
S.E of regression	0.225879	

Long run variance	0.128873

Note: “LROA is return on asset, LLR is liquidity risk, LCR is credit risk and LLC is liquidity coverage “

Source: computed by author with Eviews

The results from the FMOLS revealed that liquidity risk has a negative relationship with Return on assets; this means that a percentage increase in liquidity risk will decrease ROA by 0.32%. This result is in conformity with the study of Joof (2020) who found an inverse association between liquidity risk and ROA. Likewise, credit risk has an inverse relationship with ROA, This suggest that 1% increase in credit risk decrease return on assets by 9.4%. However, Liquidity coverage ratio has a positive relationship with ROA, this means that when banks have a high liquidity coverage ratio to cover a 30 days operation, it helps in stimulating their profitability.

4.1.5 DOLS

Table 6 DOLS

Variables	Coefficient	Prob.
LLR	-0.608777	0.0063
LCR	-9.480413	0.0000
LLC	1.384242	0.0000
R2	0.732905	
Adj. R2	0.642413	
S.E of regression	0.205212	
Long run variance	0.082465	

Source: computed by author with Eviews

The results from the DOLS revealed that liquidity risk has a negative relationship with Return on assets; this means that a percentage increase in liquidity risk will increase ROA by 0.61%. This result is in conformity with the study of Joof & Tursoy (2020) who found an inverse association

between liquidity risk and ROA. Likewise, credit risk has an inverse relationship with ROA, This suggest that 1% increase in credit risk decrease return on assets by 9.5%. However, Liquidity coverage ratio has a positive relationship with ROA; this means that when banks have a high liquidity coverage ratio to cover a 30 days operation, it helps in stimulating their profitability. The analysis further suggests that 1% increase in liquidity coverage increases ROA by 1.38%.

4.1.6 Causality Analysis

Table 7 DH Causality Analysis

H0: absence of causality	Z bar-statistic	p-value
LROA⇆LLR	2.02365	0.0919
	6.88677	3.E-05
LCR→ROA	1.07719	0.3685
	1.17893	0.3208
LROA⇆LLC	11.9834	7.E-09

Source: computed by author with Eviews

The analysis form the DH causality highlighted a feedback relationship between liquidity risk and return on assets. Likewise, a feedback causal association between liquidity coverage and ROA is found. However, a unidirectional causation running from credit risk to return on assets.

4.1.7 Correlation Matrix

Table 8 Correlation Matrix

Correlation probability	LROA	LLR	LCR	LLC
LROA	1.000000			
LLR	0.017824	1.000000		
LCR	-0.107993	-0.167082	1.000000	
LLC	0.413426	-0.134903	0.303827	1.000000

Source: computed by author with Eviews

The correlation table evidenced the absence of multicollinearity among the independent series hence the coefficients are less the threshold of 80%.

4.2 discussion

Liquidity Exposure and its Impact on Quality Liquidity retained by commercial banks represents their willingness to finance asset rises and fulfill commitments when they are due. Liquidity is one of the most significant indices of financial stability, since a single bank's liquidity deficit will trigger a structural collapse in the banking industry due to their intertwined activities.

The liquidity danger for commercial banks in Iraq was not important, which could be due to an improvement in the liquidity of commercial banks in Iraq, as per central bank regulations, and bank managers would be informed of the liquidity of their banks in order to further boost their investment performance and thereby have a sustainable market edge. Managers will insure that commercial banks are spending surplus cash in profitable properties. This means that they do not keep extra cash at the cost of fixed assets and will increase productivity. Bank managers will periodically gage their capacity to rapidly collect funds from each source, thus recognizing key factors that influence their capacity to obtain funds and closely track the factors to maintain sound liquidity. Commercial banks should provide a supervisory structure to allow them to evaluate the liquidity and liquidity control of banks in both regular and difficult periods.

Market risk to commercial banks in Iraq had a good association with success metrics and were both important. This indicates to bank executives that an improvement in competition risk means a rise in efficiency that can be accomplished by a company controlling all available vacancies arising from banking activities. Banks can set up an early-warning financial risk system such that managers can take appropriate real-time, holistic action to represent the financial situation of banks,

including financial structure, competitiveness and resources use, to increase operating performance. It would avoid the possibility of incidents well until they develop.

It is strongly advised that more exposure be given to market risk because it has a larger effect on profitability, with the return on assets (ROA). Managers should then build traditional risk control where they can follow constructive strategies and be alerted by establishing compliance expertise to reduce legal risks.

It is crucial for cash management providers to develop the right infrastructure that will allow their strategic institutional clients to become substantially dependent on them. Throughout today's fast-paced world, this is a very daunting challenge due to changing and growing demanding organizational requirements. Corporates are investing their resources to extend their regional footprint in distant countries with some cash management features, while at the same time trying to retain market leverage and recognition. Liquidity management, given exceptionally low levels of global interest rates and operational efficiencies, remains at the forefront of their competitive priorities.

“This study was conducted on the premise that financial risk has significant influence on performance of commercial banks in Iraq. The study reviewed both theoretical and empirical literature on financial risk. From the review of related literature, a conceptual framework was constructed to conceptualize the relationship between financial risk and financial performance of commercial banks in Iraq. From the review of related literature, a conceptual framework was constructed to conceptualize the relationship between financial risk and financial performance of commercial banks in Iraq. The hypothesized relationship was then tested empirically and was guided by the following specific objectives. To establish the influence of credit risk on financial performance of commercial Banks in Iraq, to establish the influence of liquidity coverage on financial performance of commercial Banks in Iraq,

to establish the influence of liquidity risk on financial performance of commercial Banks in Iraq, to determine the influence of Market risk on financial performance of commercial Banks in Iraq, to determine the influence of market risk on financial performance of commercial Banks in Iraq and these relationships have been shown in the conceptual framework”

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

It can be concluded that there exists a negative and significant relationship between credit risk and performance of commercial banks in Iraq. This means that when non-performing loans increase the performance of banks decrease. Increase in nonperforming loans could be due to delayed payment challenges in business environment which enhances reclassification of loans and high interest rate leading to down grading of loan accounts by banks. This makes non-performing loans to be very costly to recover and regulatory controls in place may lead to deterioration of assets quality, which is associated with high risk exposure.

Furthermore, I can conclude that basel III has a positive pact in bank performance, thus its implementation in Iraq has resulted to better bank performance. The Basel Committee adopted in its new standards, which the financial crisis in 2008 had a significant impact on its emergence, on focusing mainly on banking capital since it entered this ratio in all of its criteria, directly or indirectly, which is represented in (capital adequacy, and the ratio of liquidity coverage, And net stable financing, and leverage), and thus the criteria came to enhance bank capital, as a result of the exposure of many banks and their exposure to default and bankruptcy. The capital adequacy, even if it is a high percentage in Iraqi banks, is not alone enough to achieve banking safety, but it requires the availability of liquidity, and the reasonableness of the leverage ratio, hence the Basel III committee developed two additional criteria represented in the ratio of liquidity and leverage, and the Basel Committee believes that the compatibility. Between these ratios and their balance, the financial sector

in general and the banking sector in particular are avoided for financial crises that are prohibitively expensive in a way that leads to bankruptcy, as well as being very expensive economically, politically and even socially when these crises move to other real sectors.

The possibility of implementing Basel III decisions by Iraqi banks because of the strength of their banking capital, as all capital adequacy ratios were higher than the standard proposed in Basel III. Moreover, a percentage of the hedge capital was not calculated by the Iraqi banks, which amounted to (2.5%), which was recommended by the Basel Committee, but that does not hinder the application of sufficiency ratios because the ratio is much higher than the standard required by the committee, meaning that Iraqi banks do not It needs to increase its capital by 2.5%. It can be deducted without increasing the capital. This percentage is extremely important in that it is a precautionary ratio to cover the various risks, and it is also a clear percentage from disclosure in the financial statements.

5.2 Recommendation

The findings of this study indicate that the credit risk calculated by the gross non-performing loan ratio was negatively linked to the return on assets as a measure of success. Bank organizations to adopt policies to ensure the credibility of debtors doesn't really increase at a greater incidence over total capital, as this increases the credit risk. Managers may reduce default risk by ensuring that the creditworthiness of lenders is measured in accordance with collateral that can be completely protected. Managers will also be cautious when drawing up credit programs that do not adversely affect the efficiency of the bank.

Loan policies will specify the distribution and reach of credit facilities by establishing limitations that may be focused on the community authority that requires the committees to accept broad loans. It is also necessary to specify the frequency of meetings of committees and reporting procedures, which require managers to understand how credit policy affects the performance of banks in order to ensure the proper use of bank

deposits as an improper management of credit risk will increase non-performing loans which may lead to financial distress.

For the purpose of strategy, the Central Bank of Iraq will determine the attitudes of bank lending by analyzing the degree of credit shortage provided the demand and availability of loans in financial markets and enhanced business competition through providing separate portfolios to balance the business. The Central Bank Prudential Guideline on capital adequacy allows banks to conform to the prudential capital adequacy levels recommended.

5.3 Contribution of the study

This research review contributes to literature in a variety of areas, divided into two groups by definition, namely analytical contributions and theoretical contributions. The research is distinctive in its approach embraced, which assesses the association of various financial risks and analyzes the connection with the success of banks in Iraq.

“The work includes a number of variations of data collection review and procedures that offer a quantitative input in the field of finance by analyzing the effect of financial risk on the financial results of commercial banks in Iraq. For theoretical contributions, the study provides a broader perspective and provides a new insight into the impact of financial risk on the financial performance of commercial banks in Iraq by analyzing data from different banks over a longer period of time. The research even underpinned the homogeneity findings of the risk control framework of commercial banks in Iraq. The analysis offers a clear example of the relationship between various forms of risks.

The research compares the weight of different threats, including credit, liquidity foreign exchange risk, interest rate risk and equity risk in trading funds, against a range of other risk measurements. Bank management should consider the results of the study to be helpful, since their management function includes handling their clients and owners' assets

to produce income, cash flows and reduce risk. Such visibility is necessary for them to provide knowledge on risk groups and on the relationship of various forms of risk with a view to hedge fund investors against danger, thereby growing the valuation of the business.

The study examines the relationship between financial risk and efficiency of banks in Iraq by analyzing financial risk as a value-added approach and proposing ways for local banks to reduce financial risks and improve their financial role, thereby offering an invaluable contribution to existing literature by validating the control impact of banks in size on financial performance".

5.4 Future Research

The research did not think that spending by banks and sources of funding could be more researched as to the impact of financial risk control on sources of finance and expenditure. Therefore, when deciding how the funding mix affects the amount of financial risk that defines how the financing mix affects the financial risk of financial institutions, the scale of the company should be called a moderating element.

More work should be conducted to define the sources of financial risk in terms of financial efficiency; this can be tackled by taking into consideration particular bank variables, business development variables, supervisory factors, and macro-economic factors in order to provide an in-depth perspective into the effect of financial risk on financial results. A comprehensive research on the effect of operating risk on the financial results of commercial banks in Iraq should also be carried out, since this category of danger has been recognized by Basel ll.

Further work can be conducted to consider non-financial considerations, such as the ownership structure, the physical positions of the number of customers as moderating variables, to evaluate their moderating impact on the relationship between bank success and financial risk. Further work should be conducted to define emerging developments and obstacles in

financial risk management in the modern world in order to gain insight into financial risk concerns because the industry has undergone increasing financial sector uncertainty, intensified competitiveness due to the elimination or reduction of barriers and low cost of financial services.

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APPENDIX

Appendix 1.1: descriptive statistics

Date: 08/08/20
Time: 14:22
Sample: 2000Q1 2019Q4

	LROA	LLR	LCR	LCR
Mean	0.640607	1.230482	2.039980	2.413461
Median	0.662061	1.246472	2.052167	2.424991
Maximum	1.408508	1.614418	2.081285	2.782533
Minimum	-0.478319	0.613491	1.920949	2.048619
Std. Dev.	0.337447	0.210984	0.034729	0.141632
Skewness	-0.340350	-0.590926	-1.219603	-0.066565
Kurtosis	2.919871	3.337946	4.127738	2.990500
Jarque-Bera	5.167513	16.62078	79.43673	0.195953
Probability	0.075490	0.000246	0.000000	0.906670
Sum	169.1203	324.8472	538.5548	637.1537
Sum Sq. Dev.	29.94786	11.70721	0.317206	5.275712
Observations	264	264	264	264

Appendix 1.2: Correlation Matrix

Covariance Analysis: Ordinary
Date: 08/08/20 Time: 14:25
Sample: 2000Q1 2019Q4
Included observations: 1200

Correlation Probability	LROA	LLR	LMR	LCR
LROA	1.000000 -----			
LLR	0.017824 0.7732	1.000000 -----		
LCR	-0.107993 0.0799	-0.167082 0.0065	1.000000 -----	
LCR	0.413426 0.0000	-0.134903 0.0284	0.303827 0.0000	1.000000 -----

Appendix 1.3: Kao Panel Cointegration

Kao Residual Cointegration Test
Series: LROA LLR LCR LCR
Date: 08/08/20 Time: 14:23
Sample: 2000Q1 2019Q4
Included observations: 1200
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend
User-specified lag length: 1
Newey-West automatic bandwidth selection and Bartlett kernel

	t-Statistic	Prob.
ADF	-2.940881	0.0016
Residual variance	0.014339	
HAC variance	0.012088	

Appendix 1.4: FMOLS

Dependent Variable: LROA
Method: Panel Fully Modified Least Squares (FMOLS)
Date: 08/08/20 Time: 14:20
Sample (adjusted): 2000Q1 2019Q4
Periods included: 80
Cross-sections included: 15
Total panel (balanced) observations: 1200
Panel method: Pooled estimation
Cointegrating equation deterministics: C
Coefficient covariance computed using default method
Long-run covariance estimates (Bartlett kernel, Newey-West fixed bandwidth)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LLR	-0.327827	0.117207	-2.796989	0.0056
LCR	-9.362670	1.264084	-7.406682	0.0000
LCR	1.029691	0.218008	4.723172	0.0000

R-squared	0.570158	Mean dependent var	0.645393
Adjusted R-squared	0.556348	S.D. dependent var	0.339120
S.E. of regression	0.225879	Sum squared resid	12.70427
Long-run variance	0.128873		

Appendix 1.5: DOLS

Dependent Variable: LROA
Method: Panel Dynamic Least Squares (DOLS)
Date: 08/08/20 Time: 14:21
Sample (adjusted): 2000Q1 2018Q4
Periods included: 80
Cross-sections included: 15
Total panel (balanced) observations: 1200
Panel method: Pooled estimation
Cointegrating equation deterministics: C
Fixed leads and lags specification (lead=1, lag=1)
Coefficient covariance computed using default method
Long-run variance (Bartlett kernel, Newey-West fixed bandwidth) used for coefficient covariances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LLR	-0.608777	0.220411	-2.762011	0.0063
LCR	-9.480493	1.649524	-5.747410	0.0000
LCR	1.384242	0.276224	5.011296	0.0000

R-squared	0.732905	Mean dependent var	0.646834
Adjusted R-squared	0.642413	S.D. dependent var	0.343172
S.E. of regression	0.205212	Sum squared resid	7.706484
Long-run variance	0.082465		

Appendix 1.6: Demitrescu and Hurlin Causality

Pairwise Granger Causality Tests
Date: 08/08/20 Time: 14:23
Sample: 2000Q1 2019Q4
Lags: 4

Null Hypothesis:	Obs	F-Statistic	Prob.
LLR does not Granger Cause LROA	240	2.02365	0.0919
LROA does not Granger Cause LLR		6.88677	3.E-05
LMR does not Granger Cause LROA	240	1.07719	0.3685
LROA does not Granger Cause LCR		4.73076	0.0011
LCR does not Granger Cause LROA	240	1.17893	0.3208
LROA does not Granger Cause LLC		11.9834	7.E-09
LMR does not Granger Cause LLR	240	4.45386	0.0017
LLR does not Granger Cause LCR		3.80111	0.0052
LCR does not Granger Cause LLR	240	13.7777	4.E-10
LLR does not Granger Cause LLC		7.60117	9.E-06
LCR does not Granger Cause LCR	240	3.48643	0.0087
LMR does not Granger Cause LLC		1.63902	0.1653

Appendix 2: Basel Committee on Banking Supervision Reforms – Basel III

Basel Committee on Banking Supervision reforms – Basel III

Strengthens microprudential regulation and supervision, and adds a macroprudential overlay that includes capital buffers

	Capital					Liquidity
	Pillar 1			Pillar 2	Pillar 3	
	Capital	Risk coverage	Containing leverage	Risk management and supervision	Market discipline	Global liquidity standards and supervisory monitoring
All Banks	**Quality and level of capital** • **Raising minimum common equity** to 4.5% of risk-weighted assets, after deductions. • **A capital conservation buffer** comprising common equity of 2.5% of risk-weighted assets brings the total common equity standard to 7%. Constraints on a bank's discretionary distributions will be imposed when it falls into the buffer range. • **A countercyclical buffer** within a range of 0–2.5% comprising common equity will apply when credit growth is judged to result in an unacceptable build-up of systematic risk. **Capital loss absorption at the point of non-viability** Allowing capital instruments to be written off or converted to common shares if the bank is judged to be non-viable. This will reduce moral hazard by increasing the private sector's contribution to resolving future banking crises.	**Revisions to the standardised approaches** for calculating • **credit risk;** • **market risk;** • **credit valuation adjustment risk;** and • **operational risk** mean greater risk-sensitivity and comparability. **Constraints on using internal models** aim to reduce unwarranted variability in banks' calculations of risk-weighted assets. **Counterparty credit risk** More stringent requirements for measuring exposure; capital incentives to use central counterparties for derivatives; a new standardised approach; and higher capital for inter-financial sector exposures. **Securitisations** Reducing reliance on external ratings, simplifying and limiting the number of approaches for calculating capital charges and increasing requirements for riskier exposures. **Capital requirements for exposures to central counterparties (CCPs) and equity investments in funds** to ensure adequate capitalisation and support a resilient financial system. A **revised output floor**, based on Basel III standardised approaches, limits the regulatory capital benefits that a bank using internal models can derive relative to the standardised approaches.	A non-risk-based **leverage ratio** including off-balance sheet exposures is meant to serve as a backstop to the risk-based capital requirement. It also helps contain system-wide build-up of leverage.	**Supplemental Pillar 2 requirements** address firm-wide governance and risk management, including the risk of off-balance sheet exposures and securitisation activities, sound compensation practices, valuation practices, stress testing, corporate governance and supervisory colleges. **Interest rate risk in the banking book (IRRBB)** Extensive guidance on expectations for a bank's IRRBB management process: enhanced disclosure requirements; stricter threshold for identifying outlier banks; updated standardised approach.	**Revised Pillar 3 disclosure requirements** Consolidated and enhanced framework, covering all the reforms to the Basel framework. Introduces a dashboard of banks' key prudential metrics.	The **Liquidity Coverage Ratio** (LCR) requires banks to have sufficient high-quality liquid assets to withstand a 30-day stressed funding scenario that is specified by supervisors. The longer-term, structural **Net Stable Funding Ratio** (NSFR) is designed to address liquidity mismatches. It covers the entire balance sheet and provides incentives for banks to use stable sources of funding. The Committee's 2008 guidance ***Principles for Sound Liquidity Risk Management and Supervision*** takes account of lessons learned during the crisis. It is based on a fundamental review of sound practices for managing liquidity risk in banking organisations. **Supervisory monitoring** The liquidity framework includes a common set of intraday and longer-term monitoring metrics to assist supervisors in identifying and analysing liquidity risk trends at both the bank and system-wide level.
SIBs	The Committee identifies global systemically important banks (G-SIBs) using a methodology that includes both quantitative indicators and qualitative elements. In addition to meeting the Basel III risk-based capital and leverage ratio requirements, G-SIBs must have higher loss absorbency capacity to reflect the greater risks that they pose to the financial system. The Committee also developed principles on the assessment methodology and the higher loss absorbency requirement for domestic systemically important banks (D-SIBs).					**Large exposures** Large exposures regime established to mitigate systemic risks arising from interlinkages across financial institutions and concentrated exposures.

Appendix 3: Basel Iii Transitional Arrangements, 2017 - 2028

Basel III transitional arrangements, 2017-2028

Basel Committee on Banking Supervision

BIS

The transitional arrangements refer to minimum requirements and deadlines for implementation. Jurisdictions have the discretion to adopt standards more stringent than the Basel minima and to implement Basel standards before the deadlines.

All dates are as of 1 January, red shaded cells indicate phase-in period

		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
	Leverage ratio		2014 exposure definition					Revised exposure definition G-SIB buffer					
Capital	Capital conservation buffer	1.25%	1.875%	**2.5%**									
	Minimum common equity plus capital conservation buffer	5.75%	6.375%	**7.0%**									
	Minimum total capital plus conservation buffer	9.25%	9.875%	**10.5%**									
	Phase-in of deductions from CET1[1]	80%	**100%**										
	Capital instruments that no longer qualify as non-core Tier 1 or Tier 2 capital	Phased out from 2013											
Risk coverage	Capital requirements for equity investments in funds and exposures to CCPs	Implementation											
	Standardised approach to counterparty credit risk	Implementation											
	Revised securitisation framework		Implementation										
	Interest rate risk in the banking book		Implementation										
	Large exposures framework			Implementation									
	Revised standardised approach for credit risk							Implementation					
	Revised IRB framework							Implementation					
	Revised CVA framework							Implementation					
	Revised operational risk framework							Implementation					
	Revised market risk framework							Implementation					
	Output floor							50%	55%	60%	65%	70%	**72.5%**
Liquidity	Liquidity Coverage Ratio	80%	90%	**100%**									
	Net Stable Funding Ratio		**100%**										

[1] Including amounts exceeding the limit for deferred tax assets, mortgage servicing rights and financials.

Appendix 4: List of Commercial Banks In Iraq

International Development Bank of Iraq (IDB)

Ashur International Bank for Investment

Albaraka Bank Turkey

Kurdistan International Bank

Ghana Bank

Babylon Bank

Bank of Baghdad

Basrah International Bank for Investment

Commercial Bank of Iraq

Credit Bank of Iraq

Dar Es Salaam Investment Bank

Dijlah & Furat Bank

Economy Bank Iraq

Gulf Commercial Bank

Taawen Islamic Bank

Industrial Union Investment Bank

Investment Bank of Iraq

Iraqi Middle East Investment Bank

Islamic Bank

Mosul Bank

National Bank of Iraq

North Bank

Sumer Bank

Union Bank of Iraq

Bank Audi

- World Islamic Bank
- Elaf Islamic Bank

United Investment Bank

Al Janoob Islamic Bank

T.C. Ziraat Bankasi of Turkey (the Turkish state agricultural bank)

Bank Mili Iran (the national bank of Iran)

Byblos Bank (Lebanese)

Arab Banking Corporation (ABC) from Bahrai

Standard Chartered Bank

ETHICS COMMITEE APPROVAL

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

07.09.2020

Dear : PARESHAN JABAR HAMAD

Your project **"BANK LİQUİDİTY RİSK AND BASEL III LİQUİDİTY AND PERFORMANCE THE CASE OF IRAQ"** has been evaluated. Since only secondary data will be used the project it does not need to go through the ethics committee. You can start your research on the condition that you will use only secondary data.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Direnc Kanol

Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

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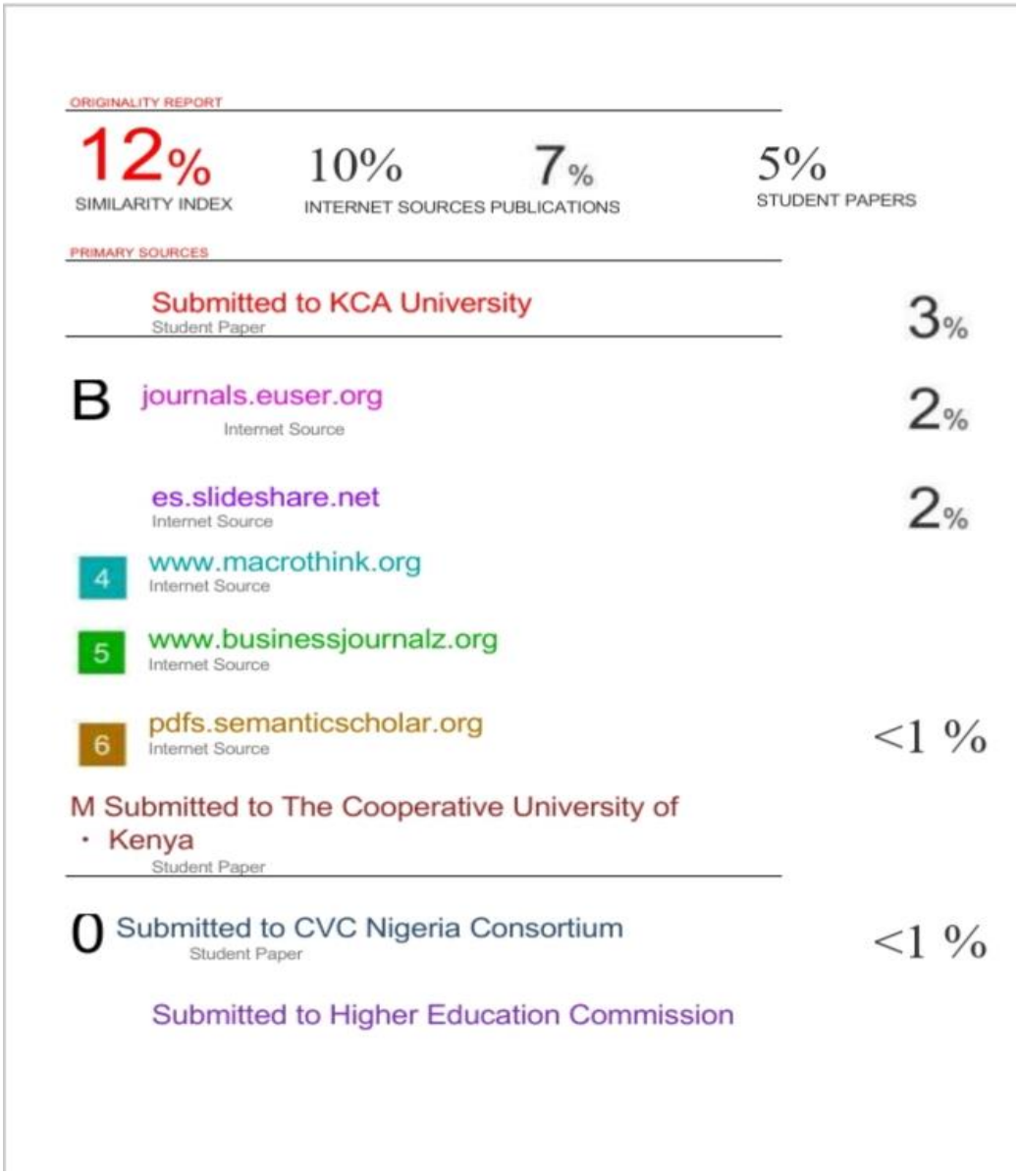

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