NEAR EAST UNIVERSITY

INSTITUTE OF GRADUATE STUDIES

DEPARTMENT OF BANKING AND ACCOUNTING

THE EFFECT OF INFLATION ON FINANCIAL AND ACCOUNTING DATA'S ABILITY TO REFLECT PROFITABLE GAINS REPORTED BY FINANCIAL STATEMENTS

M.Sc. THESIS

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Nicosia

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Approval

We certify that we have read the thesis submitted by ABDULLAH ASAAD ISMAEL titled **"The Effect Of Inflation On Financial And Accounting Data's Ability To Reflect Profitable Gains Reported By Financial Statements"** and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Business Administration.

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Declaration

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of the Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

ABDULLAH ASAAD ISMAEL

18 January.2022

Dedication

I dedicate my dissertation work to my family and many friends. A special feeling of gratitude to my loving Wife whose words of encouragement and push for tenacity ring in my ears. I also dedicate this dissertation to my many friends who have supported me throughout the process.

Acknowledgements

Thank you to my supervisor, Dr. Ala Fathi Assi, for your patience, guidance, and support. I have benefited greatly from your wealth of knowledge and meticulous editing. I am extremely grateful that you took me on as a student and continued to have faith in me over the years.

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ABDULLAH ASAAD ISMAEL

ŐZ

Enflasyonun Finansal Ve Muhasebe Verilerine Etkisi Finansal Tablolarla Bildirilen Karlı Kazançları Yansıtma Becerisi

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M.Sc. Bankacılık ve Muhasebe Bölümü

18 Ocak 2021, 93 sayfa

Önerilen çalışmanın amacı, enflasyonun İslami bankaların finansal ve muhasebe verilerinin karlı kazancı yansıtma yeteneğini etkileme yollarının neler olduğu sorusunu yanıtlamak olacaktır. Bunun nedeni, enflasyonun etkilerini belgeleyen çalışmaların esas olarak ekonomik göstergelerle bağlantılı olması ve kurumsal göstergelerle nasıl ilişkili olduklarını değerlendirmek için çok az şey yapılmasıdır. Ayrıca, çeşitli çalışmalar enflasyonun finansal ve muhasebe verileri üzerinde büyük etkileri olduğunu kabul etmemektedir ve çalışma bu sorunları ampirik olarak ele almayı önermektedir. İkincil veriler Kürdistan'daki rastgele toplam 8 İslami bankadan toplanmış ve enflasyonun finansal ve muhasebe verileri üzerindeki etkilerini analiz etmek için kullanılmıştır. Veri dönemi 2010 yılından 2018 yılına kadar yayıldı ve toplam 72 gözlem yaptı. Veri analizi süreci, İslam bankalarının sabit ve rastgele etki modellerinin tahmin edilmesine yardımcı olan EViews 11 kullanılarak gerçekleştirildi. Çalışma sonuçları, İslami bankaların hisse başına kazançları, likidite ve operasyonel maliyetlerinin banka performansı üzerinde olumlu etkileri olduğunu gösterdi. Buna ek olarak, enflasyonist düzeltilmiş fiyatlama ve raporlama, finansal tablolarda yansıtıldığı gibi banka performansında artışa neden oldu. Bununla birlikte, bankaların büyüklüğündeki artış, daha fazla müşteriye hizmet verme kapasitelerini olumsuz etkiledi ve banka performansında düşüşe yol açtı.

Anahtar Kelimeler: Banka performansı, finansal ve muhasebe verileri, enflasyon, İslami bankalar, panel verileri.

Abstract

The Effect Of Inflation On Financial And Accounting Data's Ability To Reflect Profitable Gains Reported By Financial Statements

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M.Sc. Department of Banking and Accounting

18 January 2021, 93 pages

The purpose of the proposed study will be to answer the question what are the ways through which inflation affects Islamic banks' financial and accounting data's ability to reflect profitable gains reported by financial statements. This is because studies documenting inflation's effects are mainly linked to economic indicators and little is done to assess how they are related to corporate indicators. Also, several studies fail to acknowledge that inflation has huge implications on financial and accounting data, and the study proposes to empirically address these issues. Secondary data was collected from a random total of 8 Islamic banks in Kurdistan and used to analyse the effects of inflation on financial and accounting data. The data period spanned from the year 2010 to 2018 giving a total of 72 observations. The data analysis process was undertaken using EViews 11, which aids in estimating the Islamic banks' fixed and random effect models. The study results showed that the Islamic banks' earnings per share, liquidity and operational costs had positive effects on bank performance. Additionally, inflation was resulted in inflationary adjusted pricing and reporting causing an increase in bank performance as reflected by the financial statements. However, an increase in the banks' size negatively affected their capacity to service more customers leading to a decrease in bank performance.

Keywords: Bank performance, financial and accounting data, inflation, Islamic banks, panel data.

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Abbreviations

BP:	Bank Performance
CSR:	Corporate Social Responsibility
EPS:	Earnings per Share
GDP:	Gross Domestic Product
IAS:	International Accounting Standards
IAS:	International Accounting Standards
IFRS:	International Financial Reporting Standards
IFRS:	International Financial Reporting Standards
INFL:	Inflation
LQ:	Liquidity
MN:	Mean
OC:	Operational Costs
PE:	Price-To-Earnings Ratio
ROA:	Return on Assets
ROE:	Return on Equity
SD:	Standard Deviation
TA:	Total Assets

CHAPTER I

Introduction

Background of the Study

Inflation is one of the major issues affecting individuals and business corporations. Inflationary effects range in scale from one country to another depending on the type of inflation being considered (Ojo & Marcelus, 2021). One of the notable effects of inflation is presumed to be hyperinflation (Flower & Ebbers, 2018). However, studies highlight that inflationary effects are undesirable for companies (Tinoco et al., 2018; Wahid, Shahbaz & Azim, 2011). Related reasons show that company earnings and other fixed investments are eroded in value during periods of high inflation (Abernathy, Kubick & Masli, 2018). Such is a common element with the situation in Iraq in which inflation is on the increase.

Islamic banks in the Kurdistan Region of Iraq have been making frantic efforts to improve their financial reporting standards. Such follows strict government recommendations to promote financial sector efficiency and transparency (Roychowdhury, Shroff & Verdi, 2019). Related reasons in support of these moves show that this is pivotal for dealing with the effects of inflation (Konchitchki, 2011; Riordan & Riordan, 2009). This is because inflation affects both corporate and economic indicators (Konchitchki, 2011).

Studies that document inflation's effects are mainly linked to economic indicators and little is done to assess how they are related to corporate indicators (Konchitchki, 2011; Owusu-Antwi et al., 2015). One of the key areas that several studies fail to acknowledge is financial reporting. Inflation has huge implications on financial and accounting data, and the study proposes to empirically address these issues.

It is important for corporations to identify ways through which inflation affects financial and accounting data. Such will be in conjunction to determine ways through

which inflation affects the use, roles and importance of financial and accounting data. Hence, the proposed study will have various significant theoretical and practical implications.

Research Problem

Documenting the effects of inflation on Islamic banks has been one of the widely neglected areas (Ojo & Marcelus, 2021; Tinoco et al., 2018; Wahid, Shahbaz & Azim, 2011). Additionally, studies on the effects of inflation are widely concentrated on economic aspects like growth and financial development (Ramesh, 2019; Sun, Mohamad & Ariff, 2017). As a result, little has been done to explore how inflation affects financial and accounting data's ability to reflect profitable gains reported by financial statements. Such is also a common feature in studies that examine bank performance-related issues, especially in Kurdistan.

Meanwhile, the effects of inflation together with bank-specific variables on financial reporting are still yet to be analysed using quantitative measures. This leaves huge empirical gasps, especially concerning how inflation, gross domestic product, bank size, liquidity, operational costs and earnings per share affect bank profitability when measured using total assets. Thus, the study seeks to address these problems.

Research Questions

The study seeks to answer the following research questions;

1) How do the effects of inflation combined with changes in economic growth affect the reported financial performance of the bank?
2) How do the effects of inflation combined with changes in bank size, liquidity, operational costs and earnings per share affect the reported financial performance of the bank?
3) How can best banks position themselves to minimise the effects of inflation undermining their performance?

Statement of Purpose

Although studies highlight the possible effects of inflation on economic variables (Tinoco et al., 2018; Wahid, Shahbaz & Azim, 2011), practical examinations of financial and accounting data have not been the focus of these studies. The purpose of the proposed study will be to answer the question what are the ways through which inflation affects Islamic banks' financial and accounting data's ability to reflect profitable gains reported by financial statements. Specifically, the study examines how inflation, gross domestic product, bank size, liquidity, operational costs and earnings per share affect bank profitability when measured using total assets.

Significance of the Study

The study will initially enhance understanding regarding the performance of Islamic banks as several studies often draw focus on advanced economies. The study will apply advanced econometric methods, which are not applied by other related studies and thus, providing empirical support needed to improve other studies. Moreover, the study will contribute to establishing generalised Islamic banks' financial reporting and inflation models.

The displayed conclusions will probably be applied to represent a theoretical foundation applicable to various kinds of banks and present added aspects regarding inflationary effects on financial and accounting data. Concerning practical implications, the expected contributions will be based on reviewing the influence of monetary authorities in establishing systems that reduce inflation and promote economic and financial stability.

- The study is important for improving understanding of how inflation affects financial reporting.
- The study contributes to existing studies by providing information necessary for improving theoretical ideas on financial reporting and how they can be improved to cater for the effects of inflation on financial reporting.

- Additionally, this study is important for creating a platform on which practical ideas can be devised to address contemporary financial reporting and inflation problems affecting banks.
- Future studies can use the suggested ideas to further develop new and sound empirical models capable of capturing inflation effects on financial reporting in both financial and non-financial sectors.

The Limitations

The study only focuses on Islamic banks and does not include conventional banks and hence, this limits its broader implications. Additionally, this causes it to provide a partial view of financial reporting and inflationary pressure issues affecting banks. Furthermore, most changes in country-specific variables like inflation and economic growth require models that are effective in capturing both their short-term and long-term effects, which were not captured by this study.

Organization of the Study

The study is structured into five chapters with the initial chapter drawing focus on the problem area. The second chapter deals with the examination of related theoretical and empirical studies while the third chapter centres on outlining the methodological steps that were undertaken to carry out this study. Detailed insight into the analysed data is provided in the fourth chapter while the last chapter concludes the study by drawing out relevant conclusions and recommendations.

CHAPTER II

Literature Review

Introduction

This chapter reviews related empirical ideas concerning inflation and how it affects financial reports in financial institutions. This section also uses both previous and contemporary studies to highlight and analyse the connection between inflation and financial reporting. Additionally, empirical ideas linking bank-specific variables with reported financial performance were also examined to establish hypotheses necessary for estimating and testing the underlying relationships.

Inflation is one of the most highly debated problems in the academic field and macroeconomics (Arbex, Caetano & Correa, 2019; Ilyas, Song, Galadima, Hussain & Sattar, 2021; Ndoricimpa, 2017; Zarei, 2020). Studies continue to highlight the undesirability of inflation citing various reasons. For instance, Deluna Loanzon and Tatlonghari (2021) consider that inflation erodes the purchasing value of money. Another study by Chugunov, Pasichnyi and Nepytaliuk (2019) cites that the value of assets with fixed income declines amid rising inflation levels. On the other hand, Zarei (2020) asserts that inflation causes macroeconomic instabilities. One thing for sure is that the effects of inflation are diverse and can differ concerning the economic sector involved (Ndou, Gumata & Tshuma, 2019), financial development (Tinoco Zermeño, Venegas Martínez & Torres Preciado, 2018), exchange rate (Ndou, Gumata & Tshuma, 2019) and economic development (Yemba, Kitenge & Woodburne, 2020), and stock market (Ndlovu, Faisal, Resatoglu & Türsoy, 2018) of a nation under consideration. This is because the causes and effects of inflation are influenced by several different circumstances and factors and studies consider these aspects as playing crucial roles in the determination of inflation (Gatpolintan & Avila, 2019; Katseli, Theofilakou & Zekente, 2020).

Nevertheless, it is of huge concern that the problems of inflation are restricted to macroeconomic variables like unemployment (Ndou, Gumata & Tshuma, 2019), economic growth (Yemba, Kitenge & Woodburne, 2020), financial development (Tinoco

Zermeño et al., 2018), exchange rate stability (Ndou, Gumata & Tshuma, 2019), etc. On the contrary, Ilyas et al. (2021) depicted that inflation affects microeconomic activities and business activities. This was also supported by additional remarks made by Arbex, Caetano and Correa (2019) showing that businesses are not always immune to inflation. However, not much has been done to explore the effects of inflation on a business level.

With the growing importance of data management in business, inflation can significantly hinder data management in business. However, not much has been done to explore this issue in detail. Hence, examinations need to focus on how inflation affects data management has also been correspondingly growing in banking. With the importance of banks in the financial sector and the economy as a whole, addressing the effects of inflation on data management in banks becomes apparent and undeniable. For instance, Katseli, Theofilakou and Zekente (2020) commended that banks like any other business rely on financial and accounting data to make important decisions. Such observations can be expanded to illustrate that the significance and importance of decisions made by banks using financial and accounting data can be undermined by the significant prevalence of inflation. This is because inflation affects any activities that are tied to the use of real money (Chugunov, Pasichnyi & Nepytaliuk, 2019), production (Ndou, Gumata & Tshuma, 2019) and consumption (Gatpolintan & Avila, 2019). Additionally, these three aspects are linked to decisions made by both consumers, producers and service providers. Hence, changes in inflation have an important bearing on these distinct decisions.

Business and accounting information is vital for ensuring that the organisation is on the right and strategic path towards achieving its goals and vision. Hutahayan (2020) stated that lacking information is synonymous with a lack of ‘vision’. This entails that information is the key element that guides firms on which direction to take, products and services to provide, and markets to service. Thus, without information, organisations can find it difficult to map out effective strategies leading to the attainment of these targets. Similarly, financial and accounting data is instrumental in related circumstances. For instance, Huerta and Jensen’s (2017) study highlights that financial and accounting data allows organisations to determine, which areas are doing well and bad. Consequently, the

proper action is taken to rectify imbalances and enhance effectiveness in certain strategic areas. Al-Dmour (2019) opines that financial and accounting is vital for assessing the organisation's performance together with management's effectiveness in managing the organisation, its resources and assets. Either way, the importance of financial and accounting data cannot be underestimated as competitors rely on the same data to make a competitive move that can drive other competitors out of the market. Thus, financial and accounting data allows an organisation to gain a competitive edge over its counterparts.

What is of essence is how inflation can affect among others, the above-mentioned areas, roles and activities. Thus, studies that focus on macroeconomic aspects can end up neglecting these vital insights (Arbex, Caetano & Correa, 2019; Ilyas, Song, Galadima, Hussain & Sattar, 2021; Ndoricimpa, 2017; Zarei, 2020). Therefore, this requires studies to explore the effects of inflation on the use and roles of financial and accounting data, especially in banks that are proving to rely significantly on financial and accounting data (Haleem, & Kevin, 2018). This study adds vital information required for a better understanding of how inflation through financial and accounting data affects vital banking activities leading to their collapse if not a decline in an operational capacity. As such, there are practical several benefits tied to this study.

The Notion of Inflation

Inflation is generally defined as a sustained increase in the general price level (Tinoco et al., 2018; Wahid, Shahbaz & Azim, 2011). Others consider it to be an increase in general prices that is combined with a fall in the value of money (Roychowdhury, Shroff & Verdi, 2019). Regardless of the definition, one may opt to use, inflation remains an undesired event or outcome that hinders several economic and social activities. This is because inflation is linked to various drawbacks. For instance, Konchitchki (2011) noted that inflation reduces the value of real income and that entails that consumers' disposable income falls with each successive increase in prices. Consequently, consumers will not be able to buy as much as before. The same notion applies to banks as their ability to acquire more assets and other related resources is reduced. It is for this main reason that

individuals and organisations regard inflation as an undesired economic outcome or situation.

Some studies noted that inflation triggers economic instabilities. For instance, Ojo and Marcelus (2021) insisted that hyperinflation can cause a massive devaluation of the local currency. Businesses like banks rely on foreign currency stability to make business transactions and operate effectively. Instabilities caused by inflation can hinder bank operations and increase operational costs. It is practically difficult for banks to operate in a high inflationary environment and hence, efforts are always required to deal with the problem of inflation. Additionally, cost-push inflation can cause business or operating costs to rise substantially. Studies establish that cost-push inflation is a major obstacle to business operations and hinders profitable performance (Konchitchki, 2011; Riordan & Riordan, 2009).

However, it remains debatable as to whether inflation is good or bad as there are vast contrasting ideas about this subject. A study by Flower and Ebbers (2018) considers that the decisions to regard inflation as good or bad are subject to consideration as to who owes who money. In such a scenario, organisations like banks will benefit more financially when customers are owing them money. That is, bank customers will have to pay banks borrowed money at inflation-adjusted rates. Alternatively, banks can be disadvantaged when they are owing money as they are forced to pay high rates that are inflation-adjusted. Meanwhile, the rate of interest and/or returns on these and other assets is another prime factor to consider when deciding on the desirability of the consequences of inflation. This is because assets with variable rates of return or interests are more desirable during periods of inflation compared to assets with fixed rates of return or interests (Abernathy, Kubick & Masli, 2018). This is because assets with variable rates of return or interests can have their rates adjusted during high inflation and thus, causing more returns to be obtained. On the contrary, a fixed interest rate or return makes it impossible to attract higher returns by adjusting the rate. Hence, the value can be eroded as inflation continues to increase.

Though the concept of inflation has a general view and approach, the level of consideration placed on addressing inflation varies between organisations. Such is highly observable when differences between financial and non-financial institutions are brought into perspective. For instance, the nature of operational activities surrounding financial and non-financial institutions is distinct. Hence, the extent to which both institutions are affected by inflation differs significantly. For instance, banks rely on interest generating activities while non-financial institutions rely on goods and services to make profits. The observed effects of inflation will differ as other aspects like the interest rate levied on such activities can vary or remain fixed. The implications of fixed and variable interest rates are that the former is not adjustable to changes in inflation as opposed to the latter. This causes banks to make more profits on variable interest-earning assets and projects compared to fixed interest-earning assets and projects.

Nonetheless, all organisations irrespective of whether they are operating as financial or non-financial institutions have a negative approach toward inflation. This is because they consider inflation as eroding the value of their financial assets (Tinoco et al., 2018). Therefore, efforts to curb the effects of inflation are highly observable in both financial and non-financial institutions. Besides, consumers dealing with either financial or non-financial institutions will adopt risk-averse measures aimed at safeguarding the purchasing power of their money. Therefore, they are most likely to act in a manner that will not favour both financial and non-financial institutions.

The other key concern that makes inflation a devastating circumstance is the associated types of inflation that range from cost-push inflation which occurs as a result of an increase in operation costs (Wahid, Shahbaz & Azim, 2011). Financial and non-financial institutions will attempt to avert increases in cost as they undermine profitability. This can cause devasting effects on financial institutions like banks especially when they fail to pass the increased cost to customers. Elasticity influences the extent to which banks will pass an increase in cost to customers. For instance, an elastic banking service implies that any increase in banking costs will cause a significant decline in banking services used by customers. On the other hand, an inelastic demand banking service implies that any

increase in banking costs will cause an insignificant decline in banking services used by customers. There are other forms of inflation like hyperinflation that are difficult to hedge against and can cripple both financial and non-financial institutions. Some companies are forced to close operations in the midst of rising inflation levels while others will scale down operations (Konchitchki, 2011; Riordan & Riordan, 2009). Both situations are undesirable and have adverse effects on economic growth and development. Furthermore, they can affect other vital economic indicators like social development and the attainment of sustainable development goals. Hence, the importance of dealing with issues related to inflation and how they affect financial institutions is of huge importance in contemporary business and economic situations. This attaches significant value to this study as it seeks to explore ways through which banks can curb and hedge against the effects of inflation to enhance their performance. Such is explored in the context of banks in Kurdistan and requires further examination regarding the rising importance of financial and accounting data. This is because information and/or financial data is the heart of any banking operations and any issues undermining its correctness and ease of availability can threaten other vital banking activities like decision-making connected to the use of such information. It is in this regard that the next section explores ideas about the rising importance of financial and accounting data.

The Rising Importance of Financial and Accounting Data

Financial and accounting data is important in business because it reflects vital information about the business' operational activities and performance. Information regarding how the bank has been operating can easily be made available and disclosed using financial and accounting data (Owusu-Antwi et al., 2015). This is because financial and accounting data shows a detailed view of all the monetary and physical assets used by the banks and how they are being used to sustain operations.

Financial and accounting data is important for making sure that the banks' assets are being used effectively. Hence, financial and accounting data are essential aspects of performance measurement and evaluation procedures used in banks. Banks can use financial and accounting data to determine whether managers and the bank, in general,

have been living up to their expectations and abler to achieve set standards and goals. Hence, corrective action can be taken to deal with misalignments in bank performance. Mohamad and Ariff (2017) noted that managerial and overall bank performance are disclosed using financial statements and the benefit is that problem areas leading to poor performance can be identified and rectified. Jermakowicz (2004) states that financial and accounting data is important for findings areas of advantage that banks can concentrate on leverage to boost their competitive edge over other banks.

A study by Konchitchki (2011) pointed out that financial and accounting data is vital for making essential bank decisions. Both the bank, its managers and stakeholders rely on published information to make relevant decisions. Therefore, banks will make rational decisions on the condition that the required information is available. Hence, the inability to source the required information hinders banks' decision-making process. Therefore, financial and accounting data is used to deal with such issues and provides an effective way through which banks can use to make rational bank decisions.

Stakeholders rely on financial and accounting data to make informed decisions and their decisions to continue engaging the bank in further dealings are influenced by the type and quality of reported financial and accounting data. For instance, creditors can use the financial and accounting data to determine whether they should continue dealing with the bank and if such dealings will be profitable for them to engage in (Roychowdhury, Shroff & Verdi, 2019). Other stakeholders like the government often financial and accounting data to determine how much tax to charge. Financial and accounting data can also be used for corporate social responsibility (CSR) purposes as banks determine how much should be used to engage in CSR.

Huge attention has been devoted to the role of financial and accounting data in making investment decisions. For instance, Suchánek and Částek (2019) contend that the rationality of decisions made by investors is a function of the quality of the reported financial and accounting data. Though such an idea has been debated on the condition that technical and fundamental skills are the key to successful investment decisions, studies still consider financial and accounting data to be of huge significance (Devalle, Onali &

Magarini, 2010; Klein & Speckbacher, 2020; Suchánek & Částek, 2019). Therefore, the general agreement is that financial and accounting data provides an accurate view of the business' operational conditions. This leads investors into analyzing the provided information and determine whether it is rational and profitable to invest in the banking business.

Meanwhile, it remains vital to note that banks tend to use financial and accounting data to gauge the bank's operational conditions. Such information is made available with the aid of the balance sheet. A balance sheet shows whether the business has the necessary capital funding to support operations (Dyreng & Lindsey, 2009). Other information like liquidity is also made available in the balance sheet and banks use it to determine whether the banks are liquid enough to support their operational conditions (Bay et al., 2006). Working capital conditions are also evident and disclosed using a balance sheet (Kane & Magnus, 2001). The banks must not tie too much working on inventory and debts as it reduces the bank's ability to finance its operational needs. Additionally, working capital needs to be structured in a manner that causes the banks to utilize their cash resources effectively and efficiently (Ali & Hwang, 2000).

Liquidity management is another vital concept and a practical issue surrounding banks and other corporate institutions. This is because liquidity influence both the bank's performance and reputation. For instance, Munoz, Chamblin and Xiu (2008) contend that highly liquid banks are profitable because of the swift movement of cash within and outside the banks allowing them to divert cash funds to profitable projects and assets. Alternatively, low or poor liquidity conditions imply that banks face restrictions regarding the movement of funds towards profitable projects and assets. Financial and accounting data can provide details about the bank's liquidity position and how it is affecting its financial performance. Hence, emphasis is placed on the significant role of financial and accounting data in disclosing details about an organisation's performance.

Suchánek and Částek (2019) hinted out that the importance of using financial and accounting data in determining an organisation's performance. Financial and accounting data offers vital details regarding the bank's financial performance as denoted by ROA,

ROE, NIM and another ratio like efficient utilization, capacity utilization, EPS, etc. at this stage, information can be obtained as to whether banks are making profits or not, and if such profits can support operations or not. However, the prevalence of inflation can undermine such efforts and hence, banks must enact measures to safeguard them from such effects.

Cash flow statements are also another vital way of obtaining financial and accounting details about the bank. Klein and Speckbache (2020) contend that banks need to have a clear insight into the banks' use of cash resources. Therefore, generated from operational activities must be greater than cash expenditure if banks are to sustain operations and make profitable gains. The prevalence of inflation can interfere with the banks' operational activities and cause negative cash balances and this is another vital reason why banks ought to deal with inflation. Other financial statements can also disclose information about the bank's operational activities and conditions. This is because financial and accounting data is not limited to the balance sheet and the income statement but covers various aspects like creditors, stock, assets etc.

Though financial and accounting data is essential for banks, it is worthy to consider that it is limited in various ways. For example, a study by Dyreng and Lindsey (2009) noted that there are limits to the use and importance of financial statements. Such ideas were also supported by study suggestions given by Ali and Hwang (2000) contending that financial and accounting data only focuses on monetary measures and neglects other non-financial measures. Additionally, put forwards that vital aspects like reputation, trust and brand image are not easily measured and hence disclosed using financial and accounting data. This implies that there are gaps that are left void when using financial and accounting data. This can undermine efforts to examine how inflation affects the role and importance of using financial and accounting data in disclosing the financial status of any banking institution.

Financial information management systems are an innovative method used to automate accounting entry, processing and reporting activities Sari and Maya (2018). Its importance can be linked to the need to deal with challenges observed when using manual

data entry systems (Sajady, Dastgir & Nejad, 2012). With several issues affecting companies worldwide, it becomes important for organisations to adopt innovative and robust financial information management systems. Notable accounting issues that have been affecting organisations range from fraud, mismanagement, negligence, high prevalence of errors etc. Studies in support of financial information management systems contend that these issues among others can be addressed by adopting financial information management systems (Daoud & Triki, 2013; Hla & Teru, 2015).

Adopting financial information management systems can serve as a platform upon which banks can introduce and implement organisational change management programs vital for improving their performance. This is because financial information management systems can be used for numerous purposes and provide detailed information about the organisation (Mamić Sačer & Oluić, 2013). As such, financial information and organisational activities can be provided about ineffectiveness and inefficiency affecting the organisation (Rosa & Purfini, 2019).

Meanwhile, banks Kurdistan Region of Iraq stands to benefit a lot from using and innovating their financial information management systems. Such will be vital for enhancing their effectiveness as strategies are taken to enhance their performance (Iskandar, 2015). With the prevalence of the financial crisis in the Kurdistan Region of Iraq, banks can use financial information management systems to determine ways needed to manage poorly performing assets, activities and branches in an inflationary environment. However, much needs to be done to examine how financial information management systems will be able to aid banks Kurdistan Region of Iraq to enhance their effectiveness when operating in an inflationary environment. This is because related studies drew ideas from different sectors (Soudani, 2012) companies (Nzomo, 2013) and countries (Mamić Sačer & Oluić, 2013). Hence, this study contributes to existing studies by drawing information from banks in the Kurdistan Region of Iraq.

Asserting that financial information management systems will have a positive effect on banks is subjective especially when untested. This is because the situation under which it affects banks or any company differs with respect to sectors (Soudani, 2012)

companies (Nzomo, 2013) and countries (Mamić Sačer & Oluić, 2013). Such is the case with banks in the Kurdistan Region of Iraq operating in an inflationary environment and there are limited studies that look at this issue in the context of the banking situation in the Kurdistan Region of Iraq. Besides, ways through which financial information management systems affect bank effectiveness need to be determined and such has not been done with respect to banks in the Kurdistan Region of Iraq. Furthermore, it is highlighted that the effects of financial information management systems on banks are through leadership, change management, employee engagement, performance evaluation and bank performance (Nzomo, 2013). However, such can lead to subjective and inconclusive ideas about how financial information management systems affect banks if it remains untested in an inflationary environment. Thus, this study proposes to extend ideas by Nzomo to determine if the same variable avenues will have significant effects on banks in the Kurdistan Region of Iraq.

There are various studies that look at the effects of accounting information on organisations like banks (Daoud & Triki, 2013; Hla & Teru, 2015; Mamić Sačer & Oluić, 2013). However, terms like organisational effectiveness are composed of various elements (Nzomo, 2013). Such affects the depth of study results obtained and this study seeks to deal with such issues. In addition, factors that affect the success of the application of Financial information management systems need to be accounted for in different countries if accounting information is to effectively provide the desired results (Iskandar, 2015). Such is vital in the Kurdistan Region of Iraq as numerous studies focus on different aspects like sectors (Soudani, 2012) companies (Nzomo, 2013) and countries (Mamić Sačer & Oluić, 2013). For instance, a study by Nzomo (2013) conducted on telecommunications companies in Kenya shows that accounting information does not only affect the financial aspects of the company. It highlighted that accounting information also influences non-financial aspects of the company. As expected, it highlights that leadership is a notable non-financial aspect of the company that is affected by accounting information. The results showed that accounting information has a significant positive impact on the telecommunications companies' leadership. In another study by Sajady, Dastgir and Nejad (2012) which examines the effectiveness of accounting information, it is highlighted that

the potential effects of accounting information are in the form of management aspects. The study findings highlighted that accounting information introduces improvements in an organisation's management aspects. Such shows that accounting information is a change management introduction, implementation and monitoring tool. That is, accounting information forms a good base upon which organisations can introduce and manage change management programs. Hence, similar ideas can be expected regarding banks in the Kurdistan region of Iraq.

A study by Soudani (2012) showed that accounting information is useful because it leads to effective changes in organizational performance. The study, however, argues that changes in organisational performance take various forms but studies only significantly focus on financial measures of performance. It also highlights that non-financial indicators such as employee engagement have been significantly neglected. Hence, this study proposes to build on this idea and analyse how accounting information affects the bank's effectiveness through employee engagement. Hla and Teru (2015) did a study that examined the efficiency of accounting information systems and performance measures. Their study indicated that accounting information is vital for measuring the performance of the bank and that of managers. Such implies that accounting information serves as performance management and evaluation tool. There are also aspects that assert that accounting information is vital for enhancing organisational performance. For instance, a study by Sari and Maya (2018) denotes that there are substantial improvements in organisational performance that occur as a result of the positive changes in the business process due to the quality of accounting information. This shows that accounting information has a positive influence on bank performance.

The study enhances understanding of the influence of financial information management systems on banks' performance in an inflationary environment. Such has been lacking especially in the context of the Kurdistan region of Iraq as numerous studies focus on western economies. The study also draws ideas from banks as related studies often focus on organisations such as banks. Furthermore, it uses theoretical ideas to develop a conceptual model that can be widely applied to organisations in any sector.

The importance of financial data in organisations like banks remains of high significance. This is because information plays a vital role in decision making and banks with easy access to vital information are able to devise effective strategies needed in ensuring that banks attain their vision. Operating in a highly competitive environment such as the banking sector requires banks to have easy and immediate access to information. Studies reckon that competitors are willing and mostly able to capitalise on their counterparts' lack of access to vital information (Hasan, Manurung & Usman, 2020; Ngware, Olweny & Muturi, 2020). In this manner, information positions banks ahead over other banks and gives them sound information about areas they can tap into to gain a huge market share and maximise profits. Such is a common feature in contemporary banking environments and denotes the practical importance of having proper information management systems in banks.

Hasan, Manurung and Usman (2020) suggested that key concerns regarding some of the major issues faced by banks can be rectified by having access to proper information. This suggests that information reveals both challenges and opportunities banks are exposed to. Therefore, well-performing banks are those banks that can take advantage of existing information sources and utilise them to their advantage. Take for instance liquidity concerns, proper information will reveal assets or projects tying significant liquidity. That is, inefficient and ineffective use of liquid resources can be revealed using provided banking information. This will help banks in adopting proper liquidity management strategies that will help banks to channel liquid resources to profitable assets and projects.

There are also aspects of capacity utilisation that are embedded in information availability. That is, the existing operating capacity of a bank can be revealed by collecting information from all the branches, employees, operational activities etc. This is crucial, especially at a time when economic conditions like the financial crisis have imposed severe burdens that are still undermining banks' operational capacity and effectiveness. Studies reckon that the prevalence of the financial crisis and economic crisis posed severe threats that not only reduced banks' operational capacity but also forced some banks to

scale down and close down operations (Adeghe, Aguwamba & Edobor, 2019; Kohlscheen, Murcia Pabón & Contreras, 2018). Capacity problems experienced by banks have also been linked to problems like structural challenges such as those linked to Covid 19 (Korzeb & Niedziółka, 2020). In such situations, banks had to close operations and resort to online banking operations. Information management becomes the tool banks will use to gauge their operational activities and respond accordingly.

Bank management is another vital aspect that cannot be isolated when examining the role of financial information in banks. This is because it relies on the available information in managing bank operations so as to attain stated objectives. Supporting evidence shows that essential banking activities like liquidity, asset and capital management are conducted at the heart of widely available bank information (Daly & Frikha, 2017; Tharu & Shrestha, 2019). The effective capacity of bank managers to sustain operations, attain profitable gains and set the banks on a long term sustainable position relies on the existence of sound information used in managing bank operations. Such information forms a key aspect ion decision making as decisions have to be made in choosing between the available alternatives.

There are also financial aspects of managing bank activities that rely on sound information. That information is the key banks use to make decisions regarding the use of bank funds (Ramesh, 2019). For instance, can use banking information to determine which companies or individuals to issue loans and at what interest rate and the repayment period. Investment decisions are also part of such financial decisions as decisions have to be made about which assets and projects to invest into. It is vital to note that information is used in conducting scenario analysis of the available assets, projects and activities banks must invest into. The assets, projects and activities with the highest outcome are opted as desirable compared to other outcomes.

The management of non-financial activities is also another key activity relying on the sound availability of banking information. According to Sun, Mohamad and Ariff (2017), certain important activities resulting in improved bank performance can be improved by utilising information about the changes in such activities. Reference can be

made to aspects of factors like employee satisfaction and banks can use information like employee attendance, and participation to gauge the level of their employees' satisfaction levels. Job satisfaction shows how much bank employees are satisfied in conducting their daily duties. Bank managers can use such information to design job rotation, training programs and incentives to offer to bank employees so as to enhance their participation, motivation and performance. These key factors are instrumental in improving bank performance, especially in an inflationary environment.

There are also connections that cab is established by linking banking activities to customer activities and experiences. For instance, banks can collect information about their customers' banking activities and e4speriences to determine how best they can maximise their satisfaction and loyalty levels. It is vital to note that using banking information to boost bank employees is vital for enhancing bank performance in an inflationary environment. This is called for in countries like Kurdistan that have been strangling to gain competitive market shares leading to improved performance and industry dominance.

Given all the provided benefits of using financial information to manage bank operations and make sound decisions, the importance of financial information in banks cannot be underestimated. Such also forms a key aspect in devising proper strategies essential for addressing problems faced by banks. Hence, the existence of inflation, in this case, can thus be considered as a limiting factor limiting banks' ability to properly manage their activities and operations. In addition, inflation is an obstacle that prevents banks from having a clear picture of both banking operations, customer activities and economic changes. Therefore, the importance of formulating banking strategies aimed at easing inflationary effects on banks is justifiable and demands that banks place significant efforts in improving such aspects. The same is recommended to banks in Kurdistan and around the world.

Business Connections between Inflation and Financial and Accounting Data

The prime focus of this study is to illustrate the effects of inflation on financial and accounting data. However, observations made revealed that there are limited academic

studies that explore such connections. Therefore, this section emphasizes illustrating such effects.

Hutahayan (2020) asserts that anything that has a monetary value can easily be linked to changes in prices. Inflation deals with changes in prices and this entails that bank balance sheets and income statement items are bound to be affected by the effects of inflation. Changes in prices are reflected through changes in the disclosed value of the bank balance sheets and income statement items. As such, Katseli, Theofilakou and Zekente (2020), pinpoint that there link between inflation and bank balance sheets and income statement items is inseparable. However, there is much that must be disclosed regarding the extent to which bank balance sheets and income statement items are affected by inflation. Preliminary findings evident in a study by Arbex, Caetano and Correa (2019) noted that some bank balance sheets and income statement items are more elastic to changes in prices while other items are inelastic to changes in prices (inflation).

Historical cost accounting can also be used to illustrate and reinforce the connection between inflation and financial and accounting data. Zarei (2020) has always been known for having challenges regarding the overstatement of financial statement items (Ndoricimpa, 2017; Zarei, 2020). Inflation inflates the stated figures and can cause biases in evaluations and conclusions reached from the reported financial and accounting data.

Inflation-adjusted methods have been introduced in dealing with inflation and ensuring that reported financial statements do not show windfall gains (Arbex, Caetano & Correa, 2019). Windfall gains cause banks to have an inaccurate picture of the bank including its areas of advantage and what it needs to implement to boost their performance. Nevertheless, there are non-monetary issues that are not disclosed as to how inflation affects them. This is inflation deals with monetary items measurable in monetary measures (Ilyas, Song, Galadima, Hussain & Sattar, 2021). This discloses the effective ability to analyse how inflation affects financial and accounting data and the extent to which it reflects the financial performance is limited. Moreover, other instrumental non-financial performance measures cannot be reported and disclosed using financial statements. This

complicates efforts to assess how inflation affects financial and accounting data and the extent to which it reflects financial performance. Therefore, the next sections of the study will concentrate on establishing the importance of devising effective macroeconomic policies to deal with inflation and the importance of having sound banking strategies.

There is significant empirical information justifying the importance of financial information in business and such studies can be extended to banks as well. For instance, Konchitchki (2011) asserts that business activities undertaken by an organisation are simply explained using information. This entails that information is necessary for assessing how banks have been operating and determining whether they are any inconsistencies affecting such activities. Given such a case, it becomes undebatable to cite that care and proper measures must be taken to deal with inflation as any possible distortion in information can undermine the smooth operational capacity of banks. Therefore, this study dwells on existing theoretical frameworks on inflation and bank performance to asses how inflation undermines bank performance. Such a novel study had been sidelined and beyond the examination of several academic studies. Therefore, this serves as a novel and original insight regarding how banks can adjust their activities and operations and address the effects of inflation. Furthermore, dealing with such aspects continues to play an important role in modern banking environments and thus, creating an additional avenue through which this study adds to the improvements of existing studies. Moreover, this attaches the need and importance to improve related theoretical frameworks and adds an additional element that banks can use to boost their performance in an inflationary environment. However, this alone is ineffective and requires resilient measures enacted through the support of macroeconomic policies aimed at addressing inflation. Therefore, the next section looks at the role of macroeconomic policies in addressing inflationary problems.

The Role of Macroeconomic Policies in Addressing Inflationary Problems

Banks require a stable financial and economic environment for them to thrive and register profitable gains. Hence, the presence of problems like inflation can hinder banks from attaining such goals. Generally, it is believed that operational conditions experienced

during periods of hyperinflation are unsustainable (Gatpolintan & Avila, 2019; Katseli, Theofilakou & Zekente, 2020). This is because operational costs will be rising with each successive increase in prices as producers and other service providers attempt to cover operational costs. There is also another common agreement that operational costs are a major deterrent that hinders banks from maximising profits (Arbex, Caetano & Correa, 2019; Ilyas, Song, Galadima, Hussain & Sattar, 2021; Ndoricimpa, 2017; Zarei, 2020).

The competitive play field in which banks operate during hyperinflation is intense and unconducive for banks to operate. It is imperatively difficult for banks to charge competitive prices for banking products and services and any increase in inflation level causes it to be unviable to provide banking services. Zarei (2020) asserts that charging higher prices in a hyperinflationary market or economic situation can dissuade consumers from buying related products and services. This adversely affects banks by reducing their market share as customers will shift to other banks charging low banking service fees.

Bank runs are also another challenge that is linked with inflation (Yemba, Kitenge & Woodburne, 2020). According to Katseli, Theofilakou and Zekente (2020) inflation and a financial crisis reduce bank customers' confidence in banks. Moist importantly, bank customers can find it difficult to access their deposits during periods of high inflation (Ndou, Gumata & Tshuma, 2019). The timeous access to bank deposits is instrumental in facilitating bank customers' capacity to make informed decisions and effective buying behaviour. Inflation tends to erode the purchasing value of money and hence failure to withdraw funds from banks causes bank customers to lose a significant chunk of the value of their deposits.

Other vital macroeconomic factors are linked to and affected by hyperinflation. For instance, inflation can cause an increase in unemployment as employees' wages are eroded in value (Ilyas, Song, Galadima, Hussain & Sattar, 2021). In such cases, the opportunity costs of remaining unemployed will be greater than being employed. This negatively affects banks as they rely on economic agents' capacity to borrow from them to fund their consumption and production activities. Therefore, an increase in unemployment reduces the banks'' service engagement levels as economic agents scale

down their borrowing activities. Most importantly, funding earned by banks in the form of interest rates and service fees declines as economic agents scale down their borrowing activities.

Macroeconomic policies are vital and their existence serves to fulfil important functions and purposes. It is empirically proven that well-formulated policies are crucial for achieving economic stability (Abernathy, Kubick & Masli, 2018; Roychowdhury, Shroff & Verdi, 2019; Wahid, Shahbaz & Azim, 2011). Other studies denoted that problems like inflation and their related challenges can be minimised or dealt with by enacting proper economic policies (Konchitchki, 2011; Riordan & Riordan, 2009). Though provided ideas suggest sky-rocketing prices will not only undermine economic activities but extend to hinder organisational activities if remained unaddressed (Abernathy, Kubick & Masli, 2018). Hence, it is vital to examine inflationary effects both on the firm and national levels. Such ideas are supported by ideas denoting that firms' operational activities are restricted during inflationary periods (Roychowdhury, Shroff & Verdi, 2019). Others suggested that firms' operational capacity is also restricted when faced with severe inflationary pressure (Flower & Ebbers, 2018; Ojo & Marcelus, 2021). However, the effects of inflation are not only limited to broader economic indicators such as growth, financial development etc. but can encompass numerous aspects like corporate indicators like firms size, performance, liquidity etc. However, there are limited studies exploring how inflation affects such indicators. Hence, there are substantial and diverse novel ideas obtainable when the effects of inflation are related to other corporate indicators.

It is vital to establish that inflation most affects external variables influencing banks' operational activities. Notable effects can be traced to the money supply which banks rely on to issue loans. For instance, in periods of high inflation demand that the central bank through monetary policy reduces money supply banks. Dealing with macroeconomic imbalances like inflation requires combined efforts from banks and the central banks. This is because the central bank plays a crucial role in stabilising prices while banks will have a role to play in cushioning themselves from the effects of inflation.

However, the extent to which central banks assist in such efforts is limited and hence, banks will have to go an extra mile in devising proper strategies that do not only address such inflationary effects but also positions themselves to reap profitable rewards. Furthermore, there is a need to ensure that banks have proper information systems capable of capturing inflationary effects on financial data and representing information in an understandable manner reflecting windfall gains and losses caused by inflation. Again, this demands proper and sound accounting and finance techniques detailing areas banks are most vulnerable and posed to make profits from such circumstances. Hence, the decision to consider inflation as hampering bank operations and profitability is to some extent limited as consideration regarding banks' capacity to benefit from an inflationary environment remains highly feasible. Therefore, inflation must be approached by banks with caution but with a profit motive. This is essential in balancing risk with reward and ensuring that banks remain profitable ahead of their competitors.

Exchange rate differences are important in considering the importance of maintaining both economic and financial stability. Deluna Loanzon and Tatlonghari (2021) assert that banks benefit from exchange rate fluctuation when trading currencies and the presence of hyperinflation causes it to be too risky for banks to trade certain currencies. Additionally, the level at which banks engage the service of foreign companies is financial and non-financial companies are restricted by inflation. Exchange rate risk is a major hindrance to improved banking activities, capacity and performance (Gatpolintan & Avila, 2019; Katseli, Theofilakou & Zekente, 2020).

Financial development and innovation are also at the mercy of hyperinflation and failure by governments to stabilise prices entrails that the financial sector is bound to remain stagnant. Therefore, the central bank plays an essential role in ensuring that there are no limitations that hinder banks from developing and innovating both their operations and services. Furthermore, Arbex, Caetano and Correa (2019) state that central banks play a crucial role in enhancing financial development and deepening. This shows that the connection and role of the central bank in financial innovation, development and deepening is undeniable. Hence, rectifying the problems of inflation becomes crucial in

ensuring that these three vital developments are attained. This is essential at a time when economies worldwide are striving to develop their financial sector to promote economic growth and development.

The above reasons are some of the key concerns why central banks must enact measures and policies to stabilise prices. The goal is to ensure that banks strive, make profitable gains and sustain their operations to grow and expand their businesses. Policies like fiscal and monetary policies are used in such cases to deal with these matters and ensure that the financial sector is well stable to support operations and allow economic agents to fund their production and economic activities. Consequently, this allows banks to make profitable gains that boost their performance level.

Inflation and the Importance of Strategic Business Management and Decision

Though economic policies can be enacted to stabilise the financial and economic sectors, the major task remains with banks to enact measures that cushion them from the effects of inflation. Hutahayan (2020) noted the importance of establishing proper risk management strategies. This is because inflation is linked to various risks like exchange rate instability, unemployment, low capacity utilisation, etc. all these outcomes translate into obstacles that hinder banks from maximising profits.

Competition can be high in situations characterised by hyperinflation. This is evident in studies showing that high costs make it impossible for banks and other service providers to levy high prices on customers (Gatpolintan & Avila, 2019; Katseli, Theofilakou & Zekente, 2020). This is practically difficult, especially when the elasticity of demand is elastic. An elastic demand causes bank customers to significantly scale down their engagement with banks. Hence, the level of banking services used by bank customers declines during a hyperinflation situation. Thus, banks can find it difficult and have to compete for a limited and if not declining market share.

Zarei (2020) noted that bank growth is restricted and adversely affected by inflation. Therefore, introducing specific bank strategies becomes vital in ensuring that there are no obstacles hindering banks from growing. Growing into existing and future markets is complex when economic agents are scaling down their production and

consumption activities. Banks can establish measures that protect their customers and ensure that their services are cost-effective compared to those offered by their competitors. Thus, strategic management methods like diversification, integration, and expansion can be applied in such cases. Furthermore, expanding and growing into incorporating more services and products requires funds but the prevalence of hyperinflation makes it challenging for banks to fund their market development, growth and expansionary strategies and efforts.

Development and innovation are vital in modern economies and financial situations characterised by increasing operational complexities hindering operations. The number and nature of such complexities constantly change in line with social, economic, political, and technological developments. According to Chugunov, Pasichnyi and Nepytaliuk (2019), the failure of banks to keep abreast of any social, economic, political, and technological developments can pose various risks causing them to lose their market share and suffer from declining profit levels. Besides, Deluna Loanzon and Tatlonghari (2021) assert that consumers' tastes and preferences change in line with social, economic, political, and technological developments. Therefore, banks must have strategic departments that are well-posed to identify social, economic, political, and technological developments and assess their implications with regard to performance, growth and survival.

Capacity utilisation strategies are required amidst rising inflation levels because they enable banks to operate above if not around their normal capacity levels. Profit maximisation is a function of capacity utilisation and failure by banks to operate their normal capacity can hinder performance improvements (Ilyas, Song, Galadima, Hussain & Sattar, 2021). It was discovered that operating below capacity levels is costly and unstainable (Arbex, Caetano & Correa, 2019).

Studies highlight that there are considerable differences between Islamic and conventional banks (Arbex, Caetano & Correa, 2019; Ilyas, Song, Galadima, Hussain & Sattar, 2021; Ndoricimpa, 2017; Zarei, 2020). Such differences can have a huge influence on the extent and effectiveness to which they deal with inflation. This observation is not

evident in numerous studies and this study has managed to identify such an effect. Therefore, emphasis will be given to incorporating it in analysing the effects of inflation on financial and accounting data in reflecting financial performance. This is another major contribution evident in this study that creates a huge platform for developing future studies.

Ideas provided in this section strongly highlight the importance of banks having strategies capable of tackling inflation. As such, it has been shown that there are numerous adverse effects banks will encounter when they lack effective strategies capable of avoiding or eliminating problems posed by inflation. In other words, the costs of not dealing with inflation far outweigh the costs of dealing with inflation. Moreover, strategic decisions are needed to guide banks towards a successful development, innovation and growth path capable of generating huge and sustainable returns.

Much still needs to be established regarding the effects of inflation on accounting data, especially in the banking sector. This is because the information is vital for the effective functioning of the banking system. Hence, banks require accurate information to make decisions. The prevalence of macroeconomic problems like inflation hinders the effective ability of banks to make rational decisions. A study by Adelopo, Lloydking and Tauringana (2018) noted that information can be distorted from the information provided. Such is highly applicable to financial information. It is in this regard that the real interest rate is used as opposed to the nominal interest rate for financial transaction purposes. The former considers inflation while the latter does not. Nonetheless, financial information is used for investment decision-making purposes. Studies acknowledge that financial information is used to evaluate an available project or asset options as to which best project or asset banks should invest in (Ngware, Olweny & Muturi, 2020; Tharu & Shrestha, 2019). The decision to make such an investment is based on various indicators such as profitability and growth. Some studies prefer profitability citing that it is commensurate with the risk assumed by the investor in investing in a particular project (Adeghe, Aguwamba & Edobor, 2019; Kohlscheen, Murcia Pabón & Contreras, 2018). That is, high risks command high rates of return and both the project and asset must be offered high

returns matching or surpassing such risks otherwise investors will be reluctant to invest. The same applies to banks that may be faced with options to choose between projects.

In certain cases, growth over profitability is preferable. Daly and Frikha (2017) contend that growth focuses on the long term position of the company as opposed to profits. This entails that growth sustains the company and ensures that the shareholders' value is maximised in the long run. The difference is that profitable companies can prove to be unsustainable in the long run. Hence, it is in such regard that banks must choose projects that will remain sustainable in the long term. It is vital to note that decisions pertaining to such circumstances are made using financial information and the prevalence of inflation can distort such information. This entails that banks should apply accounting standards on inflation to adjust their financial statements during periods of high inflation.

Financial information is also used for various internal activities. For instance, banks can use financial information to assess their performance. In that case, sales revenue figures must be accurately recorded. However, inflation can cause prices to be inflation and reflect windfall gains (Konchitchki, 2011). Given such a case, banks may be forced to make wrong decisions resulting in a depletion of their retained earnings. Besides, the information provided may not accurate paint the actual bank performance and can cause banks managers to make informed decisions regarding the distribution of the acquired profits. This shows that inflation has important consequences on financial information and its use by banks to make decisions. Therefore, accurate and rational decisions will be formulated on the basis that banks are able to determine accurate existing and future inflation levels and adjust their financial statements accordingly. In addition, strategic bank competitive decisions are linked to profitability estimates and hence, any bias in determining profitability entails that the banks' competitive strategies will be compromised. While it remains real that the actual relationship between inflation and accounting data remains under-examined, the effects are undeniable. However, the channels through which such effects transpire are of huge concern and call for additional studies to explore in detail such matters. Such is the focus of this study and thus, there are numerous theoretical and practical benefits attached to this study.

The relationship between inflation and internal bank activities is still nascent and demands contemporary studies to explore. Such stems from the fact that a significant amount of decisions made by banks using financial information that is affected by inflation is external (Konchitchki, 2011; Owusu-Antwi et al., 2015). As a result, the way central banks react to inflation by enacting monetary and fiscal policies influences the performance of banks during periods of inflation. On the other hand, the direct connection between inflation and financial information relates to pricing and operational activities. This includes interest on fixed and variable assets. That is, fixed interest-bearing assets are profitable to banks during periods of low inflation but bad during periods of high inflation. This is because fixed interest rates allow banks to accumulate high returns during low inflationary periods and low-interest rates revenue during periods of high inflation.

More so, banks' lending activities are influenced by interest rates charged by banks on loans. Sun, Mohamad and Ariff (2017) noted that banks will issue loans to individuals and corporations capable of paying the determined rate. Attention is, however, placed on the interest rate as to whether it is fixed or variable. Each of the interest rate scenarios affects the interest revenue earned by banks with variable rates highly capable of generating more revenue during periods of high inflation as they are adjusted in line with the inflation rate. As a result, the disclosed financial information will reveal high figures because of inflation.

Given all these provided ideas, it, therefore, shows that inflation has both direct and indirect effects on financial data and the extent to which banks apply related accounting standards to cater for inflation is crucial. This is because such standards will affect both the returns earned by the banks as well as expenses paid by banks to lenders and other banks. In addition, the decisions made will also be influenced by the information disclosed and hence, any misappropriate recording of financial information that disregards the effects of inflation will lead banks into making irrational decisions. Therefore, it is in this regard that proper accounting and financial management strategies be implemented by banks managers to hedge against the effects of inflation and ensure that banks are well-positioned to benefit from the inflationary environment.

Bank Performance, Determinants and Effects of Inflation

Studies connecting bank performance, determinants and effects of inflation are limited and this study seeks to address this matter. Additionally, gaps exist in the connection linking bank performance, determinants and effects of inflation. A study by Ramesh (2019) dealing with the determinants of bank performance provides a combination of bank and country-specific variables determining bank performance. This is important in practical situations where both bank and country-specific variables influence bank performance. Hence, the importance of integrating bank and country-specific variables in addressing the effects of inflation on financial and accounting data in reflecting bank performance.

Sun, Mohamad and Ariff (2017) studied factors influencing bank performance because various banks. This is vital in situations where the conventional and Islamic banks are involved in economies like Kurdistan. Considerable differences between conventional and Islamic banks are essential determinants of bank performance and such differences are not accounted for in several studies. Additionally, the implications of such differences can be significant when other factors like bank and country-specific variables are factored into consideration. Adelopo, Lloydking and Tauringana (2018) conducted a study on the determinants of bank profitability before, during, and after the financial crisis. Their findings showed that changes in bank performance differ between banks before, during, and after the financial crisis. This further illustrates the importance of economic factors influencing the way banks respond and address the effects of inflation.

Hasan, Manurung and Usman (2020) in their study on the determinants of bank profitability with size as moderating variable. Their study showed that various factors can influence bank performance and the effect of each variable differs. Additionally, their study was based on the argument that other variables have distinct effects and can either lead to improved bank performance or hinder bank performance. As such, they contend bank size moderates bank performance while other studies consider it as having a direct effect on bank performance (Ngware, Olweny & Muturi, 2020; Tharu & Shrestha, 2019). This contradicts related suggestions regarding the way banks respond to the effects of

inflation. Hence, other variables can contribute towards easing the effects of inflation while others can enhance inflationary effects.

Daly and Frikha (2017) examined differences between conventional and Islamic banking in Bahrain regarding the determinants of bank performance. Differences in bank performance were observed leading to the assertion that bank performance determinants have different implications on conventional and Islamic banks' performance. Consequently, the way banks deal with inflation differs significantly differs and expectations are that similar effects will be observable concerning Islamic banks in Kurdistan. However, much ought to be done to examine how Islamic banks react and address the effects of inflation on financial and accounting data in reflecting financial performance. This can be supported by related examinations made by Ali and Puah (2019) illustrating that internal and external bank performance determinants have distinct effects on bank stability and profitability. This provides significant insights regarding how economic and financial stability are vital in warrantying improvements in bank performance. Hence, the study integrated both economic performance and inflation as external or country-specific variables influencing the way Islamic banks react and deal with the effects of inflation on financial and accounting data in reflecting financial performance.

Topak and Tırmandıoğlu (2017) included both bank-specific and macroeconomic determinants in analyzing their effects on bank profitability using data collected from Turkish banks. The importance of including both bank-specific and macroeconomic determinants is also evident in a study by Fang et al. (2019) conducted in China. As such, distinct observations were made showing that the implications of various bank-specific and macroeconomic determinants affect banking aspects and activities related to market competition, risk-taking and bank efficiency.

Batir, Volkman and Gungor (2017) conducted a study on the determinants of bank efficiency in Turkey that was similar to another study conducted by Bougatef (2017) on the determinants of bank profitability in Tunisia. These two studies are distinctively different and illustrated the significance of financial and economic development in

influencing bank performance. Therefore, differences in Kurdistan's banking situation and financial development have a huge toll on the performance of Islamic banks in Kurdistan.

Kohlscheen, Murcia Pabón and Contreras (2018) made a relatively similar study based on emerging markets. Battenn and Vo (2019) used data collected from banks in Vietnam. All the established ideas were the same and significantly points out that the same bank measurements and determinants can have similar effects on bank performance. However, other important factors like economic growth, inflation and financial technology must not be neglected (Phan et al., 2020).

Adeghe, Aguwamba and Edobor (2019) contend that major changes in bank performance are influenced by the level of a bank's deposit and prudential guidelines. The collected evidence from Nigeria showed that a substantial number of Nigerian banks witnessed major improvements in bank performance following an increase in bank deposits. Hence, this study proposed to incorporate the effects of bank deposits on bank performance. Such is of huge concern as little has been done to explore how bank deposits influence the manner and extent to which Kurdistan's Islamic banks react and deal with the effects of inflation on financial and accounting data in reflecting financial performance. Contemporary studies also illustrate similar effects and support the importance of integrating a combination of bank-specific and macroeconomic determinants (Ha & Pham, 2021; Hossain & Ahamed, 2021). These findings were established from academic insights taken from Vietnam and Bangladesh. Therefore, relatively similar observations were expected with retards to Islamic banks in Kurdistan.

Concerns about the effects of inflation on bank performance are an unending issue that continuously poses issues for both banks and academicians. For instance, studies reckon that bank performance can severely be impaired if banks do not have proper strategies to hedge against inflationary pressure (Konchitchki, 2011; Riordan & Riordan, 2009). However, such ideas remain to be proven as consensus often differs and diverges as to whether banks always suffer losses due to inflation. For instance, Konchitchki (2011) contends that there are vast factors to consider before a conclusion can be reached as to

whether inflation will hinder bank performance. This aligns with propositions suggesting that internal bank activities and strategies form a significant key in determining how bank profitability will react to inflation (Wahid, Shahbaz & Azim, 2011). This is because asset management and liquidity management strategies are often the determining factors that influence such actions. For example, banks will be able to generate more profits from loans during periods of high inflation on assets or loans with variable interest rates. This is because the interest rate will be adjusted in line with the inflation rate. On the contrary fixed interest rates imply that the revenue earned will be eroded by inflation as banks cannot adjust the rate in line with inflation. With regards to liquidity, banks must expend their funds on activities that are less affected by inflation. As such, such funds can be invested in assets whose performance is tracked against a stock market index. In this way, banks would have hedged against inflation risk.

The connection between bank performance and inflation can be analysed in terms of risk and reward. Related studies show that adjusting banks' investment and operational activities in line with the inflation rate ensures that possible inflationary risks are mitigated (Abernathy, Kubick & Masli, 2018; Tinoco et al., 2018). This stems from the concept that high returns will be earned through the levying of high-interest rates to compensate for the assumed risk.

Nonetheless, it remains debatable as to whether banks suffer from a decline in performance following an increase in inflation. Such lack of consensus has been existent as the underlying conditions influencing such outcomes vary between banks, financial sectors and economies. The decision boils down to the banks' effectiveness and strategic approach to change in macroeconomic activities and outcomes like inflation. For instance, Flower and Ebbers (2018) contend that some banks are able to devise effective risk management strategies preventing them from incurring losses during high inflationary periods. This entails that poor enactment of risk management strategies causes certain banks to incur losses during high inflationary periods. From a different perspective, some banks can opt to assume a bullish and high-risk appetite for inflation causing them to assume high risks. The decision for banks to be risk-tolerant can be highly rewarding,

especially when high-interest revenue and earnings flow in. Thus, the decision to determine whether banks will make substantial profits or losses during high inflationary periods is subjective.

Similar notions can be applied regarding the determinants of bank performance. That is, certain determinants will hinder performance while others will cause an increase in bank performance. For example, it was revealed that an increase in bank liquidity is positively linked to an increase in bank performance (Tinoco et al., 2018). The possible reason is that excess liquidity is used by banks to invest in profitable assets and projects capable of generating high revenue inflows in the future. However, there are certain studies contrast this idea. For instance, Ramesh (2019) asserts that excess liquidity might be required to be kept with banks by the central for every deposit banks receive from their customers. Such will represent idle funds that are unproductively being used by banks. Therefore, the opportunity cost of holding such funds is profits that can potentially be earned by investing in profitable assets and projects.

Another contrasting idea about the determinants of bank performance is total assets that are used to measure bank size. Traditionally, large banks are considered more posed to make huge profits compared to smaller banks (Tharu & Shrestha, 2019). However, some studies disputed such ideas citing that holding too many assets, especially fixed assets or non-income generating assets can be at the expense of profitable projects or assets (Adelopo, Lloydking & Tauringana, 2018; Ngware, Olweny & Muturi, 2020). That is, having too many assets implies that too many funds are tied in non-income generating activities and the opportunity cost can be significantly high. It is in this regard that bank size is viewed as having an adverse effect on the bank performance (Tharu & Shrestha, 2019). Besides, banks can increase in size to a level where an additional increase in assets will cause them to experience diseconomies of scale.

Factors driving bank performance are bound to have diverse effects varying between banks and economies. Much of the reasons are linked to the level of financial development of the respective countries. a study by Daly and Frikha (2017) contends that well developed financial institutions are equipped to allow banks to reap substantial

benefits from operational activities due to low information and transaction costs. This is relatively true as less developed financial systems are riddled with high transaction processing fees and information costs (Hasan, Manurung & Usman, 2020). Overcoming such costs becomes instrumental in enhancing bank performance and banks that suffer from the poor performance are mostly linked to high information and transaction costs.

Banks can be affected differently by underlying bank operations, external factors and structural effects. This entails that bank-specific and country-specific factors will influence bank performance differently. According to Kohlscheen, Murcia Pabón and Contreras (2018) some banks are able to highly skilled and qualified employees capable of devising effective risk and operational strategies causing banks to record more sound performance than others. There are various factors linking internal activities to the responsiveness of bank performance to each specific indicator. Some regard innovation as vital (Hasan, Manurung & Usman, 2020), while others point to high shareholder support (Sun, Mohamad & Ariff, 2017). Nevertheless, the overall decision is that banks with better internal management, resources and funds are well-posed to respond swiftly to changes in internal and external conditions. this ultimately causes them to record better performance levels.

One can also consider that the underlying economic conditions are the principal governing factor influencing the connection between bank performance and its determinants. Such a case is widely applicable and observable in several countries. For instance, the USA went through a severe financial crisis in 2008 that crippled the performance of almost every bank. Similar effects were also observed in other cou8ntries like Turkey and Kurdistan that went through similar experiences and witnessed several of their banks suffering from huge declines in their performance levels. However, better and effective crisis management strategies were able to shield other banks from the severe effects of the financial crisis. Studies also highlight that this has been linked to better risk, liquidity and asset management strategies (Adeghe, Aguwamba & Edobor, 2019; Tharu & Shrestha, 2019), while others proffered bank capitalisation (Sun, Mohamad & Ariff,

2017) and sound central bank support (Ramesh, 2019) as the main reasons why certain banks performed better than other during the financial crisis.

Disputing empirical ideas concerning the interaction between bank performance and its determinants calls for further examinations to verify the validity of the proposed ideas in a specific context. Such is similar to banks in Kurdistan where studies are still in their infancy stages in determining the specific interactions linking bank performance determinants. The validity of each interaction is vital as existing studies derive suggestions from developed economies like Australia and USA and little is being done to explore such concerns in an Islamic financial situation. Hence, several practical and theoretical benefits are derivable from this study and this justifies the need and importance of undertaking this study.

Effects of Inflation on Financial and Accounting Data

Little is available about the effects of inflation on financial and accounting data, and hence, the novelty and originality of this study are embedded in this aspect. However, there are relatively significant insights about the possible ways through which inflation affects inflation on financial and accounting data. For instance, Klein and Speckbache (2020) assert that information reported in financial statements can be inflated because of inflation. Thus, the reported financial performance results will be high on paper and yet practically insignificant in reality. For this cause, inflation-adjusted reports are prepared using inflationary adjustment methods that cater for the effects of inflation. This can be supported by observations showing that windfalls gains are reported amidst rising inflation levels (Ali & Hwang, 2000).

In another case, Suchánek and Částek (2019) note that long-term liabilities reported on the balance sheet can easily be overstated because of inflation when accounting methods like historical cost accounting are applied. Contrasting observations were made regarding the effects of inflation on long-term assets that were noted to be understated when reported using historical cost accounting during periods of high inflation (Owusu-Antwi et al., 2015). These observations depict that there are financial reporting issues that are encountered when certain financial accounting reporting methods are used

during periods of high inflation. Hence, there is an element of biasedness following the use of historical cost accounting amid rising inflation levels. Such has an effect of undermining reported financial performance and decisions made using financial statements. Furthermore, Mohamad and Ariff (2017) consider that two or more distinctively reported financial statements results cause users of financial statements to have completely different views and approaches towards the organisations. Meaning to says wrong perceptions and decisions about the company can easily be made when different financial results are presented. Hence, the importance of illustrating the effects of inflation on financial and accounting data's ability to reflect the organisation's financial performance is of huge essence.

Inflation has also been highlighted as having an effect of causing substantial increases in the amount of external financing required (Konchitchki, 2011). This stems from the fact that costs will be rising relatively higher than what banks would have budgeted for and are willing to spend. Thus, additional funds will be needed to cater for the increases in the bank's expenditure and reported financial expenditure will be relatively higher than those of previous accounting periods due to inflation.

In another instance, the effects of inflation on financial and accounting data are presumed to be observable through changes in the bank's debt-to-equity ratio when measured on its historical cost financial statements (Devalle, Onali & Magarini, 2010; Klein & Speckbacher, 2020; Suchánek & Částek, 2019). Studies in support of this argument contend that inflation overstates true economic earnings and distorts the reported earnings figures (Ali & Hwang, 2000; Bay et al., 2006; Kane & Magnus, 2001; Suchánek & Částek, 2019). Therefore, the price-to-earnings (P/E) ratio falls amid rising inflation levels and this indirectly shows that the reported financial performance has declined. EPS is used as a financial performance indicator (Bay et al., 2006) and some studies consider it to be a financial performance determinant (Dyreng & Lindsey, 2009; Roychowdhury, Shroff & Verdi, 2019). Nevertheless, the basic presumption is that inflation reduces a bank's EPS.

Mohamad and Ariff (2017) considered that there is an interaction that exists between inflation and the P/E ratio. The relationship is used to illustrate two vital aspects of risk and future earnings prospects (Bay et al., 2006). Inflation equates to risks that banks face and an increase in inflation is synonymous with an increase in risks levels. Such risks imply that there is a high potential that those earnings prospects will be reduced by inflation. However, this can be conditional on the idea that measures have been put in place to ensure that the earnings prospects are adjusted in line with the inflation rate. Most banks can use inflation-adjusted measures or methods to influence their earnings and hence profit levels. Consequently, reported financial and accounting details shown by the financial statements will be different depending on whether the banks resorted to using historical cost accounting or inflation-adjusted methods. Hence, it is vital to note that inflation affects financial and accounting data through reported risk associated with earnings prospects, and future earnings prospects.

In another study established by Suchánek and Částek (2019), it was noted that the interaction between inflation and financial and accounting data shown through the banks' P/E ratio is a reflection of market optimism. That is, investors and market participants can use the reported P/E ratio in determining their optimism levels about the banks' growth prospects. This is because a higher P/E ratio indicates that growth opportunities outweigh the estimate of the total value, (Konchitchki, 2011). However, the challenge is that the P/E ratio does not provide sufficient details about the banks' present financial performance. Hence, the ability of financial and accounting data t financial and accounting data to reflect the effects of inflation will be undermined.

Mohamad and Ariff (2017) in their study noted that a low expected rate of inflation has positive implications on stocks' EPS/price and earnings yield. Both bonds and stocks are affected by inflation but the difference is the way each distinctively responds to changes in inflation. As such, stocks have always been known to be insignificantly affected by low levels of inflation as opposed to bonds (Devalle, Onali & Magarini, 2010; Klein & Speckbacher, 2020; Suchánek & Částek, 2019). Alternatively, low earnings yield and high stock prices will be observed when the expected rate of inflation is high. As a

result, Suchánek and Částek (2019) recommend the importance of investors focusing on the ROE because it is affected by EPS, which in turn determines the sustainable growth rate and finds its way into the price of the equity security through the P/E ratio.

The International Accounting Standards (IAS) 29 requires financial statements to be restated as follows:

1) Financial statements prepared in a hyperinflationary economy must be reported in the currency of a hyperinflationary economy (Dyreng & Lindsey, 2009). That is, the reported financial statement values must be stated in terms of the measuring unit current at the balance sheet date. Additionally, any comparative values before each period must also be restarted using a similar measuring unit.
2) The IFRSs (International Financial Reporting Standards), contend that non-monetary items' restated amount is reduced when they exceed their recoverable amounts.
3) Net monetary losses or gains included in net income are disclosed separately.
4) IAS 29 also contends that a general price index must be used when conducting the restatements of the financial and accounting data reported in financial statements (Dyreng & Lindsey, 2009). IAS 29 also highlights that only financial items that are not listed in monetary values at the balance sheet date are restated. On the other hand, other financial items are restated according to changes in the general price index between the balance sheet date and the date those items were incurred or acquired.
5) A country's economic environment provides details of the existence of hyperinflation and influences judgement about the restatement of financial statements (Ali & Hwang, 2000). However, such a standard does not provide a real rate of hyperinflation. As a result, several economic environment characteristics are considered when analyzing possible strategies for restating financial statements and these include:

Meanwhile, studies consider that credit purchases and sales made by a company can easily be eroded in value due to hyperinflation (Klein & Speckbache, 2020; Suchánek

& Částek, 2019). Inflation erodes both the short term and long term value of money be it that which has been paid in cash or credit (Bay et al., 2006). Additionally, both credit purchases and sales reflect purchasing power and any changes in inflation rates can undermine the future purchasing power of credit purchases and sales.

Nevertheless, Riordan and Riordan (2009) highlight that inflation significantly affects decision making. However, effective decisions are linked to the availability of accurate and reliable information, which in most cases is provided through financial reporting. This relationship between inflation and financial reporting remains unexplored. Thus, propositions require that such a relationship be explored in Islamic Banks.

A study by Konchitchki (2011) shows that there is a significant connection linking inflation and financial reporting. But such a relationship is not examined concerning Islamic banks, and hence this study proposes to extend ideas on inflation to study how it affects Islamic banks' financial reporting.

Jermakowicz (2004) contends that the adoption of specific accounting standards is significantly influenced by inflation. Key concerns relate to how the adoption of specific standards will influence both financial reporting, the quality of decisions made and financial performance. Such connections can be too complex to examine, especially when no studies are examining the link between inflation and financial and accounting data.

The effects of inflation on financial and accounting data are influenced by a key number of variables ranging from corporate indicators and country-specific variables (Owusu-Antwi et al., 2015). This shows that the mediating or moderating effects of corporate indicators and country-specific variables vary between companies and countries. Hence, different results can be obtained when findings on Kurdistan's Islamic bank are compared with other related studies. Mohamad and Ariff (2017) depict that these variables encompass Gross Domestic Product (GDP) growth, structural imbalances, bank size and bank liquidity. Hence, the proposed study will use these variables in conjunction with inflation to examine how they affect Islamic banks' performance. Thus, the study proposes to use these variables to estimate a model capable of explaining how inflation affects Islamic banks' performance.

Table 1.

Summary of Reviewed Studies

Author	Variables	Methodology	Results
Ali and Hwang (2000)	Earnings, book value equity	Panel data estimation	Value relevance reporting is higher in countries with market-oriented financial systems
Arbex, Caetano and Correa (2019	Interest rate, output, unemployment, and inflation.	VAR	interest rate smoothing leads inflation, unemployment, and output, to react more strongly
Atidhira and Yustina (2017).	Debt to equity ratio, EPS, company size, share return, and ROA.		Debt to equity ratio has adverse effects on ROA while EPS, company size, and share return, have positive effects on ROA.
Batir, Volkman, and Gungor (2017).	Cost efficiency, expenses and loan quality	Tobit regression analysis,	Loan quality and expenses have significant adverse effects on conventional banks' efficiency but are positively related to the efficiency of participation banks.
Hakimi and Zaghdoudi (2017).	Index of concentration, size, liquidity risk, capital adequacy, and credit risk.	Panel data estimation	international financial crisis and inflation act negatively and significantly on bank performance. The findings showed that liquidity risk hampers bank performance.
Mohammed and Muhammed (2017).	Return on assets, financial crisis, the legal system, inflation rate, and gross domestic product	Panel data estimation	Inflation rate and gross domestic product growth have significant positive effects on ROA while the financial crisis dummy and legal system were not significantly related to ROA.
Topak and Tırmandıoğlu (2017)	ROA, ROE, total asset, bank size, liquidity, GDP, and inflation.	Panel GMM	Negative relationships between ROA, liquidity and inflation. Positive relationships between ROA and total asset, bank size and GDP.

Chipeta and Muthinja (2018)	ROA, financial innovation, bank deposit, size, liquidity, capital	Koyck dynamic distributed lag model	firm-specific factors are more important in determining the firm's current financial performance than industry factors.
Adelopo, Lloydking and Tauringana (2018)	ROA, financial crisis, total assets, liquidity, liabilities, deposits.	Panel FEM and REM	Positive interaction between ROA with total assets, and deposits. Negative interaction between ROA and liquidity and liabilities.
Battenn and Vo (2019	ROA, ROE, total asset, bank size, liquidity, bank efficiency capital.	Panel GMM	Total asset, bank size, bank efficiency and capital had positive effects on ROA and ROE while liquidity was negatively related to ROA and ROE.
Le, Hoang, Wilson and Ngo (2020).	Bank size, credit risk, Non-performing loans, ROA, total asset.	A non-radial slack-based directional technology distance function	Bank size has positive effects on bank performance and efficiency as it aids in dealing with banking risks.
Zarei (2020)	Total assets, ROA, ROE, inflation, liquidity, capital, total deposits.	Panel REM and FEM	Bank growth is restricted and adversely affected by inflation. Introducing specific bank strategies becomes vital in ensuring that there are no obstacles hindering banks from growing.
Deluna Loanzon and Tatlonghari (2021)	Inflation, GDP, exchange rate, money supply	OLS	Exchange rate, money supply had positive effects on inflation while GDP was negatively related to inflation.

CHAPTER III

Research Methodology

Introduction

This chapter deals with the methods and procedures that were applied in examining the effects of inflation on financial and accounting data in reflecting the business' financial performance. Due to limited research on Islamic banks, panel data models in the form of the Fixed Effect Model (FEM) and Random Effect Model (REM) were applied. The aim was to determine, which of the two models offers the best possible explanations for highlighting such effects. Ideas regarding the study population, sampling procedures, materials and data sources as well as analytical plans capable of providing reliable and valid ideas about the effects of inflation on financial and accounting data in reflecting the business' financial performance.

Population and Sampling Methods

A study population is defined as an area or a group of study participants to be studied (Chu & Ke, 2017). Thus, a study population can cover tens, hundreds, thousands if not millions of study participants or units. Such presents complexities that make it difficult to study the entire population. Hence, sampling methods are introduced to deal with such complexities (Chu & Ke, 2017). In this study, the study population was composed of 8 Islamic banks in the Kurdistan Region of Iraq. However, the importance of using secondary data resulted in the selection of 8 Islamic banks as the other banks did not have enough secondary data needed in carrying out this study. As a result, secondary data was collected from 8 Islamic banks in Kurdistan and used to analyse the effects of inflation on financial and accounting data.

Table 2 provides a description of Islamic banks in Kurdistan ranked by capital adequacy. Al-Baraka Turkatilim Bankasi A.S. Erbil is ranked first among other Islamic banks in Kurdistan in terms of total assets to capital ratio with a ratio of 197.5%. The International Development Bank and Cihan Bank ranked second and third respectively

with total assets to capital ratios of 33% and 29%, respectively. Kurdistan International Bank was ranked last with a total asset to capital ratio of 9.4%. Such differences are mostly like to have huge implications on how each of the banks responds to the effects of inflation on financial and accounting data in reflecting the business' financial performance.

Table 2.

Islamic Banks in Kurdistan Ranked by Total Assets to Capital Ratio

Rank	Bank	Total assets (%)	Year
1	Al-Baraka Turkatilim Bankasi A.S. Erbil	197.5	2020
2	International Development Bank	33.0	2020
3	Cihan Bank	29.0	2020
4	Bank Al-Bilad Islamic	19.5	2020
5	Regional Cooperation of the Islamic Bank	16.9	2020
6	Dijlah & Furat Bank	16.9	2020
7	National Islamic Bank Baghdad	13.4	2020
8	Kurdistan International Bank	9.4	2020

Source: Kurdistan Ministry of finance and investment

Materials and Data Sources

Secondary data collected from Islamic banks in Kurdistan was used to analyse the effects of inflation on financial and accounting data. Macroeconomic variable data on GDP and inflation were collected from the World Bank official website, while bank-specific variable data was collected from yearly bank publications and reports. The data period spanned from the year 2010 to 2018 giving a total of 72 observations. Table 3 shows a description of each variable's data source and period scale.

Table 3.

Variable Data Sources

Variable	Source	Period Scale
Inflation rate (INFL)	Ministry of Finance	2010-2018
Return on Assets (ROA)	Yearly bank publications and reports	2010-2018
Total deposits (TD)	Yearly bank publications and reports	2010-2018
Total assets (TA)	Yearly bank publications and reports	2010-2018
Bank liquidity (LQ)	Yearly bank publications and reports	2010-2018
Bank size (SIZE)	Yearly bank publications and reports	2010-2018
Operational costs (OC)	Yearly bank publications and reports	2010-2018
Earnings per share (EPS)	Yearly bank publications and reports	2010-2018

Variable Description

A combination of macroeconomic and bank-specific variables was applied in assessing the effects of inflation on financial and accounting data in reflecting the business' financial performance. These variables were in turn used in estimating FEM and REM panel data models. A description of the variables is given as follows;

Return on assets (ROA)

There are different ways of measuring bank performance and each of the available measures has different policy implications. For instance, Adeghe, Aguwamba and Edobor (2019) contend that ROA is the best possible measure of bank performance. A study by Daly and Frikha (2017) cites that ROE is best used in certain circumstances because it indicates the ways and implications through, which equity affects bank performance. On the other hand, the importance of net interest margin (NIM) as another vital bank performance indicator is also evident in other studies. For instance, Ali and Puah (2019)

cite that NIM is an effective bank performance indicator because of its direct link with interest income and expenditure that influence bank performance. Nevertheless, several studies suggest that ROA be used to measure bank performance as opposed to ROE and NIM (Adelopo, Lloydking & Tauringana, 2018; Hasan, Manurung & Usman, 2020; Ramesh, 2019; Sun, Mohamad & Ariff, 2017). This is because ROA is believed to provide an effective measure for both management and the bank to generate profits using the bank's assets (Hasan, Manurung & Usman, 2020). Therefore, this study used ROA to measure the Islamic banks' performance.

Inflation rate (INFL)

Inflation is defined as the persistent and sustained increase in the general price level (Hamdi, Hakimi & Zaghdoudi, 2017). Inflation has always been known to have negative effects on bank performance and studies recommend the importance of dealing with inflation citing that it undermines bank performance (Hakimi & Zaghdoudi, 2017; Hussien et al., 2019). The value of a bank's assets tends to decline in the event of rising inflation levels. Most notably, loans and assets with a fixed rate of returns are most affected by high inflation levels. However, there are ere inflation aids in improving bank performance. A study by Mohammed and Muhammed (2017) reckons that there is a minimum rate of inflation that is necessary for fostering improvements in economic performance and bank performance. Such an idea creates contrasting conclusions about the connection between bank performance and inflation. This implies that the relationship between the two can either be positive or negative. This can be supported by findings made by Hakimi and Zaghdoudi (2017) suggesting that differences between banks, financial sector conditions and economies influence the exact nature of the relationship between bank performance and inflation. Hence, this study expects inflation to either have positive or negative effects on bank performance.

Total deposits (TD)

Total deposits are instrumental for banks in generating more revenue leading to improved bank performance. This is because deposits are used to generate more through loans that are issued to customers (Chipeta & Muthinja, 2018; Sahyouni & Wang, 2019).

Additionally, generating more bank deposits allows banks to use the deposits towards investing in profitable assets and investment projects that generate more revenue for banks (Hakimi & Zaghdoudi, 2017). Consequently, bank deposits are vital for the bank and have a positive effect on bank performance. Thence, the study expected a positive relationship to exist between bank deposits and bank performance.

Total assets (TA)

Totals assets are used to provide details about the size of the bank and big banks are known to have a huge asset base as opposed to smaller banks (Nomran, Haron & Hassan, 2017). Total assets reflect the bank's ability to acquire the necessary assets needed to support banking operations (Le, Hoang, Wilson & Ngo, 2020) and the provisions of services to bank customers (Ngware, Olweny & Muturi, 2020). A study by Tharu and Shrestha (2019) also considers that total assets are instrumental in determining the extent to which banks can service particular markets. Both the ability to acquire assets and use them to support banking operations significantly influence bank performance.

Mostly, banks with huge assert bases are known as having significant performance levels as opposed to smaller banks (Tharu & Shrestha, 2019). Supporting studies consider that total assets are positively related to bank performance (Le et al., 2020; Nomran, Haron & Hassan, 2017), though others refute such observations and cite that too many assets can hinder bank performance (Ngware, Olweny & Muturi, 2020; Tharu & Shrestha, 2019). This is because too many cash resources will be tied up as assets and this reduces the bank's capacity to have liquid funds and engage in profitable banking activities. Therefore, total assets can either result in an improvement or a decline in bank performance.

Bank liquidity (LQ)

The connection between liquidity and bank performance is relatively similar to that established using the connection between total assets and bank performance (Hakimi & Zaghdoudi, 2017; Sahyouni & Wang, 2019). Bank liquidity reflects the bank's ability to meet short term obligations when they become due. Studies cite that a shortage of

liquidity hinders bank operations and frustrates customers (Chipeta & Muthinja, 2018; Hakimi & Zaghdoudi, 2017).

Meanwhile, liquidity can also be approached from a long term perspective on which the banks must invest in long term projects and assets and a lack of liquidity can hinder the attainment of such goals. In other terms, bank liquidity is a mechanism through which banks support operations and can engage in any payment related activities with customers, creditors and other stakeholders. It is through these interactions and uninterrupted operations that banks can improve their performance. Hence, the interaction between bank liquidity and bank performance is positive (Sahyouni & Wang, 2019). However, some studies contend that excessive liquidity can hinder bank performance. Therefore, this study expected the relationship between bank liquidity and bank performance to be a two-way relationship.

Operational costs (OC)

Operational costs have long been proving to be a major performance deterrent and banks and other corporations strive to minimize their costs levels. Excessive costs tend to reduce profit margins and can lead to losses that can drive banks out of operations (Edem, 2017). The profit maximization theory contends that profit can only be maximized by minimizing costs and maximizing revenue or by a combination of both methods (Fang, Lau, Lu, Tan & Zhang, 2019). This entails that operational costs must be kept low if banks are to register substantial improvements in bank performance. Besides, the association between operational costs and bank performance is undeniably negative (Adeghe, Aguwamba & Edobor, 2019; Batir, Volkman & Gungor, 2017; Daly & Frikha, 2017; Topak & Tırmandıoğlu Talu, 2017). Hence, it was expected in this study that an increase in operational costs would lead to a decline in bank performance.

Earnings per share (EPS)

According to Atidhira and Yustina (2017), EPS is a vital financial measure that is used to determine a business corporation’s profitability. Such a measure provides an indication of how much returns shareholders will get for each dollar invested in the

business. Given such circumstances, it is suggested that an increase in EPS provides a powerful incentive for companies to boost their performance levels (Atidhira & Yustina, 2017). The reason is to meet the required EPS as well as the increased investment, innovation and efficiency that accompanies high EPSs. The operational definitions of the study variables and measurement scales that were used to measure the variables are shown in Table 4.

Table 4.

Summary and Variable Description and Expected Relationships

Variable	Measure	Supporting literature	Expected relationship
Bank performance	Bank performance was measured using ROA although NIM and ROE can also be used to measure bank performance.	(Hasan, Manurung & Usman, 2020; Ramesh, 2019; Sun, Mohamad & Ariff, 2017)	N/A
Inflation rate	Unsustainable increases in average annual consumer prices.	(Hakimi & Zaghdoudi, 2017)	(- / +)
Gross domestic product growth	Annual GDP changes between two years.	(Jayakumar, et al., 2018; Olawumi, Lateef & Oladeji, 2017)	(+ / -)
Bank size	A measure of the bank's total assets.	(Ngware, Olweny & Muturi, 2020; Tharu & Shrestha, 2019).	(+)
Bank Liquidity	Liquidity was defined in terms of the ability of the banks to meet their short responsibilities.	(Chipeta & Muthinja, 2018; Hakimi & Zaghdoudi, 2017).	(+ / -)
Bank Deposits	The level of funds needed to support bank operations.	(Hakimi & Zaghdoudi, 2017)	(+ / -)

Earnings per share	EPS is a vital financial measure that is used to determine a business corporation's profitability.	(Atidhira & Yustina, 2017)	(+)
Operational costs	Costs incurred during the business and necessary for meeting the banks' daily operational needs.	(Daly & Frikha, 2017; Topak & Tırmandıoğlu Talu, 2017)	(-)

Earnings per share (EPS) is a vital financial measure that is used to determine a business corporation's profitability (Jasman & Kasran, 2017). It is calculated by dividing the company's net income by its total number of outstanding shares. Studies note that a higher EPS shows that a business corporation is profitable (Iradianty & Listiawan, 2021; Sujud & Hachem, 2018). This can trigger bank managers to continue improving bank performance to lure additional investment funds from shareholders. Thus, it is viewed that an increase in EPS causes an increase in bank performance (Atidhira & Yustina, 2017), and this study expected a positive relationship between bank performance and EPS.

Procedures

The proposed study will use a quantitative approach to examine the effects of inflation on accounting and financial data. As such, the effects of inflation will be related to the performance of Islamic banks in Kurdistan. The initial steps will involve collecting data from a random sample of 8 Islamic banking institutions located across the Kurdistan Region of Iraq. The collected data will be analysed using EViews 11.

Analytical plans

The study applied a regression analysis approach to analyse data collected from 8 banks Islamic banks to test the relationship between the bank and country-specific variables and bank performance. Additionally, such an approach was essential for analysing the magnitude of impact between the model variables (Chu & Ke, 2017). The collected data comprising 6 model variables (ROA; ROE; BS; BC; INFL; GDP) was used to estimate panel data models using EViews 11. The data analysis process was undertaken

using panel data analysis models to make it feasible to analyse data drawn from a wide cross-section of banks (Chu & Ke, 2017).

The variables were converted to logarithms so as to deal with the problems of outliers and ensure that the variables are homogenous (Chu & Ke, 2017). The study then proceeded to test the data for unit roots using the Phillips Perron (PP), and Levin, Lin and Chu t., tests. This was for ensuring that the obtained results are not spurious. This is because the presence of unit roots is well known for causing the estimated results to be spurious (Gil-Alana & Yaya, 2020; Smeekes & Wijler, 2020).

The second step was to estimate fixed and random effect models (FEM and REM, respectively). FEM and REM use regression analysis principles, and the proposed study's regression model was based on the following functional expression;

Bank performance (ROA) = F {BS; TD; EPS; OC; BL; INFL; GDP} …….. (3.1).

Regression analysis provides details regarding the variables' underlying relationships and contains a constant (α) and error term (μ), (Freund, Wilson & Sa, 2006). The panel data models will be based on the following regression models;

$$ROA = \alpha + \boldsymbol{\beta_1}BS + \boldsymbol{\beta_2}TD + \boldsymbol{\beta_3}EPS + \boldsymbol{\beta_4}OC + \boldsymbol{\beta_5}BL + \boldsymbol{\beta_6}INFL + \boldsymbol{\beta_7}GDP + \boldsymbol{\mu} \ldots\ldots. (3.2).$$

The decision to decide which of the FEM and REM will be used for decision-making purposes will be derived from the Hausman test (Seber & Lee, 2012). Other diagnostics tests like serial correlation, heteroscedasticity and normality tests will be conducted to assess the models' validity and robustness (Rawlings, Pantula & Dickey, 2001).

Descriptive statistics

Descriptive statistics were computed using the variables in their natural logarithmic forms. The computed mean values show that the banks' profit levels were slightly below average or had a lot of negative values (losses) as denoted by a mean score of -1.20. Similar deductions can be made with respect to total deposits and earnings per share with negative mean values of -0.62 and -0.92, respectively (see Table 5). That is,

the banks' total deposits and earnings per share were relatively below the accepted average and/or relatively lower than expected or set standards that guarantee enough profits. However, the banks registered above expected or set values regarding bank size (mean=16.30), operating expenses (mean=1.04), liquidity (mean=15.19), inflation (mean=2.19) and GDP (mean=1.77).

Maximum values of 18.63, 18.45, 14.21, and 13.40 were recorded regarding the calculated bank size, liquidity, ROA and earnings per share, respectively. On the other hand, minimum values of -3.93, -2.57, -2.31, -1.61, -0.99 and -0.17 were recorded with regards to ROA, earnings per share, total deposits, liquidity and bank size, respectively.

Table 5.

Descriptive Statistics in Logarithm Form

	LROA	**LSIZE**	**LTD**	**LEPS**	**LOP**	**LLQ**	**LINFL**	**LGDP**
Mean	-1.20	16.30	-0.62	-0.92	1.04	15.19	2.19	1.77
Maximum	14.21	18.63	0.36	13.40	3.18	18.45	2.79	2.42
Minimum	-3.93	-0.99	-2.31	-2.57	-0.17	-1.61	1.87	1.08
Std. Dev.	2.13	2.28	0.63	1.86	0.84	2.48	0.26	0.43
Skewness	6.27	-6.17	-0.39	6.38	0.59	-4.31	1.25	-0.22
Kurtosis	48.42	47.63	2.25	49.95	2.44	30.27	3.83	1.89
Observations	72	72	72	72	72	72	72	72

The variables earnings per share, ROA, and inflation were significantly and positively skewed by 6.38, 6.27, and 1.27, respectively. On the other hand, bank size, liquidity, total deposits and bank deposits were negatively skewed by -6.17, -4.31, -0.39 and -0.22, respectively. Such indicates poor or low standards regarding these measures or areas. Banks that are capable of improving these measures stand to witness substantial

improvements in performance. Peaked distributions of 48.42, 47.63, 49.95, 30.27, and 3.83 were noted with LROA, LSIZE, LEPS, LLQ, and LINFL, respectively. On the other hand, the variables LTD, LOPL and GDP had flat distributions with kurtosis values of 2.25, 2.44 and 1.89, respectively.

Diagnostic tests

Diagnostics tests were essential in determining the validity and reliability of the estimated panel data models (FEM and REM) in answering questions related to the effects of inflation on financial and accounting data in reflecting the bank's financial performance. Three tests in the form of the fixed effect redundant test, Hausman test and serial correlation tests were applied as part of the efforts to diagnose the models of irregularities. According to Muhammad and Ali (2018), the absence of redundancy ensures that the model has a higher statistical consistency and ensures that the results remain highly reliable (Rice, Higgins, & Lumley, 2018). The Hausman test was used to determine the desirability of using the FEM and REM in providing satisfactory explanations regarding the effects of inflation on financial and accounting data (Aït-Sahalia & Xiu, 2019; Zulfikar & STp, 2019). The obtained Durbin Watson (DW) was used to test the estimated FEM and REM to determine if they suffer from serial correlation problems. The computed DW values were compared against the related lower and upper DW values. The decision was to consider the models free from serial correlation problems when the obtained DW values were higher than both the lower and upper DW values (Milo, 2017).

Ethical Standards and Guidelines

Strict efforts were made in ensuring that the study complies with all the required research ethics standards. As a result, all the collected literature resources were duly acknowledged. Additionally, approval was sought from the research institution's ethical committee to ensure that the study does not violate any of the acceptable research ethics standards. Approval was granted and the researcher proceeded to undertake the study.

Limits of the Study

The study will draw ideas from 8 Islamic banks in Kurdistan and the findings of this study will not possibly be generalised for use in other banks such as commercial banks. In addition, by focusing on Kurdistan, it will imply that the study findings will be well suited for Middle East countries like Kurdistan, and their application in countries such as Turkey, Italy, the USA, etc., may not provide much significance. Furthermore, the effects of inflation on financial and accounting data's ability to reflect profitable gains reported by financial statements were examined using changes in profitability as measured by return on assets. Consequently, attention was not extended to net interest margin and return on equity which is also used to measure bank performance. This narrows both the scope and implications of the study findings.

CHAPTER IV

Data Analysis and Presentation

Introduction

This chapter provides analysed results of the 8 Islamic banks based in Kurdistan that were done using EViews 11. Fixed and Random model estimation methods were applied in estimating annual time series data from the year 2010 to 2018. Such is important for answering the proposed research questions. The next section provides insights into the preliminary tests conducted to determine if the model variables were stationary or non-stationary and the results are presented as follows;

Stationarity Tests

Stationarity tests were applied in the form of the PP and, Levin, Lin and Chu t., to test if the variables have unit roots or not. Previous studies noted that unit-roots cause the variables to provide spurious results (Gil-Alana & Yaya, 2020; Smeekes & Wijler, 2020).

Table 6.

Unit Root Test Results

	PP		***Levin, Lin & Chu t.***	
Variable	***Stat.***	***Prob.***	***Stat.***	***Prob.***
LGDP	105.66	0.00	-25.92	0.00
LNIFL	41.01	0.00	0.00	0.00
LMPS	58.93	0.00	-13.32	0.00
LEPS	63.27	0.00	-26.13	0.00
LSIZE	43.60	0.00	-4.26	0.00
LTD	61.35	0.00	-5.96	0.00
LTBQ	61.41	0.00	-9.22	0.00
LROA	49.98	0.00	-6.53	0.00

** Newey-West automatic bandwidth selection and Kernel quadratic Spectral estimation Bartlett kernel*

Hence, it is in this regard that these unit root tests were applied to ensure that the desired model estimation panel data estimation procedures can be applied (Gil-Alana & Yaya, 2020) and the results are reliable (Smeekes & Wijler, 2020). The unit root tests were applied with the aid of the Newey-West automatic bandwidth selection and Kernel quadratic spectral estimation Bartlett kernel. The results provided in Table 6 show that all the variables were stationary at levels and first difference and this entails that panel model estimation tests can be applied reliably.

Cointegration Test

The Johansen cointegration test was applied to determine if the variables ROA, INFL, TD, TA, LQ, OC and EPS were cointegrated in the long run.

Table 7.

The Johansen Cointegration Results

Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
Unrestricted Cointegration Rank Test (Trace)				
None *	0.087090	3.644796	15.49471	0.9301
At most 1	1.78E-06	7.11E-05	3.841465	0.9944
At most 2	0.087090	3.644725	14.26460	0.8948
At most 3	1.78E-06	7.11E-05	3.841465	0.9944
At most 4	7.96E-05	0.003184	3.841465	0.9533
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
None *	0.317111	21.44338	29.79707	0.3306
At most 1	0.143226	6.186439	15.49471	0.6735
At most 2	7.96E-05	0.003184	3.841465	0.9533
At most 3	0.317111	15.25695	21.13162	0.2713
At most 4	0.143226	6.183255	14.26460	0.5898

Trace test and Max-eigenvalue tests indicate there is no cointegrating eqn(s) at the 0.05 level. * denotes rejection of the hypothesis at the 0.05 level

Both the Trace test and the maximum Eigen test indicate that there is no long-run cointegration between the variables. The study will proceed to conduct the Hausman test.

Hausman Test

The Hausman test was used to determine the desirability of using the FEM and REM in providing satisfactory explanations regarding the effects of inflation on financial and accounting data (Aït-Sahalia & Xiu, 2019; Zulfikar & Stp, 2019). Such was accomplished under the following hypotheses;

- **H_0:** The random effect model offers satisfactory explanations regarding the effects of inflation on financial and accounting data in reflecting the business' financial performance.
- **H_1:** The fixed effect model offers satisfactory explanations regarding the effect of inflation on financial and accounting data in reflecting the business' financial performance.

Table 8.

Hausman Test

	Stat.	**Df.**	**Sig.**
χ^2	33.82	6	0.00

Table 8 results provide details of the Hausman test that was carried out using Eviews 11 and a value of 33.82 with a probability of 0.00. Hence, the hypothesis that the random effect model offers satisfactory explanations regarding the effect of inflation on financial and accounting data was rejected at 5%. This entails that we can reject the random effect model has a better statistical significance needed to explain the effect of inflation on financial and accounting data. Alternatively, it can be said that a FEM has higher statistical consistency as opposed to a FEM. Therefore, the study discussions will be based on the FEM estimation though both models offer reliably the same results.

Panel Data Model Estimations

The fixed Effect Model (FEM) was estimated to determine the effects of inflation on financial and accounting data in reflecting the business' financial performance. The FEM results are shown in Table 9 and indicate that there is a negative interaction between banks' performance reflected by the financial and accounting data (ROA) and bank size of -2.31. These results are inconsistent with findings made by Ngware, Olweny and Muturi (2020), and Tharu and Shrestha (2019). As a result, it can be noted that an increase in bank size is affecting banks' capacity to service more customers. Hence, banks' profits are reduced following an increase in their size (operational capacity).

Table 9 results also indicate that an increase in bank deposits results in a decrease in bank performance by 0.18 units. The results do not align with propositions made by Hakimi and Zaghdoudi (2017) showing that bank deposits allow banks to issue more credit to bank customers and thus, causing them to earn more interest on borrowed funds. This possibly suggests that the banks' deposit generation methods are costly and negatively affect their performance.

A positive relationship of 0.61 is observable in Table 7 between earnings per share and bank performance. This is possible because the more shareholders earn from investing in the banks the more bank managers are motivated to enhance bank performance. This is similar to propositions made by Atidhira and Yustina (2017) contending that earnings per share are strategically used by shareholders to boost bank performance to allow the banks to declare more earnings.

94.55% of the changes in financial and accounting data's ability to reflect profitable gains reported by financial statements are explained by bank size, total deposits, earnings per share, operating costs, liquidity, and inflation. The model is significant as noted by a significant F-statistic of 77.45 and a Durbin Watson statistic of 2.03 that is significantly around 2 indicating the absence of serial correlation. Further serial correlations tests were carried out in the next section of this study.

Table 9.

Fixed Effects Model Estimations Results

Dependent Variable: LROA				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LSIZE	-2.31	0.29	-7.82	0.000
LTD	-0.18	0.14	-1.24	0.222
LEPS	0.61	0.03	17.72	0.000
LOC	0.62	0.17	3.59	0.000
LLQ	1.93	0.21	9.06	0.000
LINFL	0.18	0.02	9.00	0.000
C	7.52	5.658966	2.12	0.039
R^2 = 0.95	***Adjust. R^2 = 0.93***	***F-stat.*** *= 77.45*	***Prob. F-stat.*** *= 0.00*	***DW stat.*** *= 2.03*

Meanwhile, the study reported contrasting findings as noted by Daly and Frikha (2017) suggesting that an increase in operational costs hinders bank performance. This is because an increase in operational costs by 1 unit resulted in an increase in bank performance by 0.62 units. Besides, Topak and Tırmandıoğlu (2017) reiterate that operational costs are the main challenge that hinders bank performance. However, the study findings suggest that expenses incurred by the bank are being made towards profitable or high-income generating activities causing banks to earn more returns as reflected by an increase in ROA.

In another instance, an increase in bank liquidity resulted in an increase in bank performance by 1.93. Similar findings were also established in previous studies that have shown that adequate liquidity is essential for ensuring smooth bank operations leading to improved bank performance (Chipeta & Muthinja, 2018; Hakimi & Zaghdoudi, 2017). This is because funds will be used to meet short-term obligations thereby keeping creditors and other stakeholders satisfied and thus, causing the banks to develop a positive image and reputation leading to improved performance. Besides, this can entail that such

liquidity is being expended on profitable activities. Alternatively, such funds can be said to have been used through extended credit lines, and for investing in additional assets and banking activities capable of generating additional returns.

Nevertheless, the centre focus of this study was to outline how inflation affects financial and accounting data's ability to reflect profitable gains reported by financial statements. As such, Table 8 shows that inflation had significant positive effects on bank performance by 0.18 for each successive increase in inflation by 1 unit. The prevalence of inflation increases interest rates charged on loans as well as returns on inflation-adjusted assets causing banks to earn more profits. A study by Mohammed and Muhammed (2017) reckons similar effects and asserts that there is a minimum rate of inflation that is necessary for fostering improvements in economic performance and bank performance.

Model Tests

Three model tests were carried out in determining the significance and validity of the estimated FEM and REM models. Such included a redundancy fixed effects test, Hausman test, and serial correlation test.

Redundant fixed effects test

Based on model results established from the Hausman test to use a FEM, the redundant fixed effects test was used to examine the FEM for redundancy. Muhammad and Ali (2018) state that the absence of redundancy ensures that the model has a higher statistical consistency and ensures that the results remain highly reliable (Rice, Higgins, & Lumley, 2018). A statistical value of 42.30 was significant with a probability value of 0.00. The results imply that the FEM results are reliable and will not cause any unreliable policy formulation problems. Consequently, it is in this regard that a FEM was estimated.

Table 10.

Redundant Fixed Effects Tests

	Stat.	**Df.**	**Sig.**
Cross section F	6.63	(7, 58)	0.00
χ^2	42.30	7	0.00

Serial correlation tests

The obtained Durbin Watson (DW) was used to test the estimated FEM to determine if it suffers from the problem of serial correlation. This was done by using the obtained DW value of 2.03 and comparing them against lower and upper DW values provided in the DW statistical table. Milo (2017) proposed that the DW value must be above both the lower and upper DW values for one to conclude that there is no serial correlation.

Using the results provided in Table 11, it can be seen that the DW value of 2.03 is above both the lower and upper DW values. Hence, it can be concluded that the computed FEM is free from the problem of serial correlation. Thus, we accept the null hypothesis of non-autocorrelated errors.

Table 11.

Serial correlation test

Description	**FEM**	
	DW_L	**DW_L**
	1.28	1.65
DW estimation values	2.03	

Heteroscedasticity tests

A panel cross-section heteroskedasticity LR test was used to test the estimated model for heteroscedasticity. Results provided in Table 12 show that the null hypothesis

contending that the residuals are homoscedastic is accepted at 5% (Likelihood ratio = 25.12; df=8; probability=0.46).

Table 12.

Heteroscedasticity Tests

	Value	**df.**	**Probability**
Likehood ratio	25.12	8	0.46

Null hypothesis: residuals are homoscedastic

Multicollinearity tests

The established VIF results show that all the variables' centred VIF values are less than 5 (Chu & Ke, 2017). This implies that there is no multicollinearity affecting the model variables. All the conducted diagnostics tests prove that there are no issues affecting the validity and reliability of the estimated model. Hence, the results are fit for policy and strategic decision-making purposes.

Table 13.

VIF Test Results

Variable	**Coefficient variance**	**Centred VIF**	**Centred VIF**
C	1.20	8.93	-
LSIZE	0.87	6.34	3.25
LTD	0.67	7.44	1.78
LEPS	0.54	12.78	2.21
LOC	0.88	4.32	1.16
LLQ	0.06	6.89	3.33
LINFL	0.35	5.44	2.26

Discussion of Findings

The study aimed to determine the effects of inflation on financial and accounting data in reflecting the business' financial performance. The applied panel data FEM model provided similar insights into the existing relationships influencing inflationary effects on financial and accounting data.

The results were relatively similar to those established by related previous examinations in some instants and different other instances. Notably, the results disapproved that an increase in bank size has a positive effect on bank performance. As a result, banks can be tying too many funds in unprofitable assets. This reduces potential income generated from assets as witnessed by falling ROA. Hence, profits reflected using financial and accounting data tend to decrease as bank assets increase due to ineffective asset management practices by banks.

Total deposits issued by banks have a negative effect on financial performance reflected on financial statements. Such findings do not align with propositions made in previous studies. Nevertheless, such a negative connection is because having a high level of total deposits that are not matched to revenue inflows is costly as the methods and strategies used by banks to generate such deposits will be proving to be too costly for the banks. Thus, bank profits reflected on the financial statements using the compiled accounting tools will decrease following an increase in bank profits. These results are not similar to what has been shown by other previous studies advocating for the importance of collecting more deposits.

Earnings per share can be said to be another important determinant of bank performance. Similar propositions were established in this study regarding the positive relationship between EPS and bank performance. The more earnings banks declare and publish, the more the bank resultantly improves its financial performance. This is because declared earnings are used by bank shareholders to motivate and encourage bank managers to enhance bank performance so that they can easily declare earnings. This is because declaring earnings during periods of low or poor performance is difficult and

irrational. Hence, bank managers and shareholders are compelled to enact measures and strategies that enhance bank performance to declare and increase earnings per share.

Operational costs have been noted in this study as having a positive effect on bank performance. The study contrasted related findings made in previous studies because both theories and practical studies contend that operational costs tend to reduce bank performance and that bank managers should focus on minimising operational costs. However, this study's results show that banks are possibly incurring expenses that have high productive effects on their performance. Such expenses were possibly high income-generating activities with high-income elasticity causing banks' profit margins to increase as reflected by their recorded performance.

Having adequate liquidity levels is important for the effective and efficient functioning of the bank. Similar findings were also established in previous studies that liquidity is used to meet short term obligations thereby ensuring that creditors' and other stakeholders' interests are met. The ability to meet such obligations results in an improvement in the banks' image and reputation, which can lead to increased performance levels as more customers and stakeholders engage their services with reputable banks. Additionally, adequate liquidity allows banks to invest in profitable and high income-generating assets and activities causing them to earn more profits.

Nevertheless, the study results illustrate that inflation positively affects financial and accounting data's ability to reflect profitable gains reported by financial statements. Related studies proved that the interaction between inflation and bank performance can either be negative or positive. The study findings are similar to previous studies that support the existence of a positive relationship. This is because inflation causes banks to adjust the value of their assets (inflation-adjusted assets) thereby reporting substantial gains or returns on those assets. Therefore, the study empirically concludes that inflation positively affects financial and accounting data's ability to reflect profitable gains reported by financial statements as banks engage in inflationary adjusted pricing and financial reporting.

CHAPTER V

Conclusions and Recommendations

Conclusions

The study was aimed at answering the question what are the ways through which inflation affects Islamic banks' financial and accounting data's ability to reflect profitable gains reported by financial statements. The study noted that documenting the effects of inflation on Islamic banks has been one of the widely neglected areas. Additionally, the study bases its arguments on the idea that studies on the effects of inflation are widely concentrated on economic aspects like growth and financial development. Therefore, little has been done to explore how inflation affects financial and accounting data's ability to reflect profitable gains reported by financial statements. This has been a common feature in studies that examine bank performance-related issues, especially in Kurdistan.

Estimating panel data models capable of explaining the effects of inflation on Islamic banks' financial and accounting data's ability to reflect profitable gains reported by financial statements in Kurdistan contributed significantly to related academic studies. Consequently, the study demonstrated that an increase in bank size must be matched with the banks' capacity to service more customers. Failure to align bank assets with service provision negatively affects bank performance. Therefore, profits reflected using financial and accounting data tend to decrease as bank assets increase due to increased service provision by banks.

Relatively contrasting observations made by other academic studies have also been noted to be true about the positive interaction between total deposits issued by banks and financial performance reflected on financial statements. The study contends that using costly and irrational bank deposit generating methods and activities is unprofitable. Therefore, banks must ensure that fewer expenses are incurred in generating bank de[posits by possibly reducing marketing, interest on deposits etc., to enhance bank

performance. Consequently, bank profits reflected on the financial statements using the compiled accounting tools decrease following an increase in bank profits.

The more earnings banks declare and publish, the more banks resultantly improve their financial performance because declared earnings are used by bank shareholders to motivate and encourage bank managers to enhance bank performance so that they can easily declare earnings. Besides, bank managers and shareholders are compelled to enact measures and strategies that enhance bank performance to declare and increase earnings per share.

Excessive costs tend to reduce profit margins and can lead to losses that can drive banks out of operations. However, the study has illustrated that this is exceptional on the condition that bank expenses incurred by the bank are being made towards profitable or high-income generating activities causing banks to earn more returns as reflected by an increase in ROA.

It has been proven in this study that inflation has positive effects on bank performance. This is because the value of a bank's assets tends to increase as banks revalue their assets and price their services in line with the prevailing inflation rate. Both the reported profit levels will increase as banks engage in inflationary-adjusted pricing and reporting. On the other hand, similar effects also exist regarding the effects of bank liquidity on bank performance. Suggestions made from the computed results denote that adequate liquidity is essential for supporting bank operations leading to improved bank image and reputation as the bank meets its obligations due to its creditors and other stakeholders. More banks customers and stakeholders are inclined to use the bank's services when the banks are meeting their obligations and this results in improved bank performance. Additionally, it is through these interactions and uninterrupted operations that banks can improve their performance.

Inflation does not necessarily undermine banks' reported financial performance as banks can adjust the prices of their services and revalue their assets in line with the current inflation rate (inflationary-adjusted pricing and valuation). This is relatively not similar to previous studies that consider effects as having adverse effects on bank performance.

Their results can possibly indicate poor risk and asset management strategies exercised by those banks. This is because asset and risk management strategies must be constantly monitored and adjusted in line with changes in the external environment to capture changes in macroeconomic determinants of bank performance such as inflation. These results are originally based on Islamic banks' situation in Kurdistan and hence, they offer significant practical and theoretical contributions essential for improving financial reporting and bank performance.

Recommendations

Using the established study conclusions, the study, therefore, suggests the following;

- Banks should use inflation-adjusted methods or measures to revalue their assets and price their services during periods of high inflation to avoid a decline in returns and gains reported by their financial statements.
- Banks must constantly monitor and adjust their asset and risk management strategies in line with changes in the external environment to capture changes in macroeconomic determinants of bank performance such as inflation
- Better liquidity, asset, and working management strategies are required to maximise revenue by spending more on high income-generating activities.
- Bank service and operational innovation are needed to enhance bank effectiveness in providing banking services to reduce banking costs and cost-push inflation, and how to reduce the number of customers serviced by banks.

Suggestions for Future Studies

The study does not consider the effects of a financial crisis and observations made revealed that a financial crisis affected almost the entire Kurdish banking sector. Hence, proper examinations are needed to explore how a financial crisis affects the quality of reported financial performance using the bank's accounting and financial data. Additionally, this needs to be compared with Islamic banks from the Middle East region as considerable research regarding the effects of inflation on financial and accounting is still lacking among Kurdish Islamic banks.

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APPENDICES

Appendix A

Fixed effects results

Dependent Variable: LROA
Method: Panel Least Squares
Date: 12/14/21 Time: 21:06
Sample: 2010 2018
Periods included: 9
Cross-sections included: 8
Total panel (balanced) observations: 72

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LSIZE	-2.305816	0.294901	-7.818959	0.0000
LTD	-0.175620	0.142369	-1.233554	0.2223
LEPS	0.610092	0.034437	17.71617	0.0000
LOP	0.618308	0.172441	3.585610	0.0007
LLQ	1.926346	0.212659	9.058379	0.0000
LINFL	0.178899	0.246274	0.726425	0.4705
C	7.524483	3.553705	2.117363	0.0385

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.945535	Mean dependent var	-0.918138
Adjusted R-squared	0.933328	S.D. dependent var	1.862642
S.E. of regression	0.480953	Akaike info criterion	1.546570
Sum squared resid	13.41630	Schwarz criterion	1.989255
Log likelihood	-41.67653	Hannan-Quinn criter.	1.722805
F-statistic	77.45450	Durbin-Watson stat	2.025783
Prob(F-statistic)	0.000000		

Appendix B

Redundant fixed effects results

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	6.625077	(7,58)	0.0000
Cross-section Chi-square	42.303766	7	0.0000

Cross-section fixed effects test equation:
Dependent Variable: LROA
Method: Panel Least Squares
Date: 12/14/21 Time: 21:08
Sample: 2010 2018
Periods included: 9
Cross-sections included: 8
Total panel (balanced) observations: 72

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LSIZE	-0.862610	0.179622	-4.802364	0.0000
LTD	-0.284097	0.127077	-2.235634	0.0288
LEPS	0.670692	0.038877	17.25172	0.0000
LOP	-0.027540	0.095467	-0.288471	0.7739
LLQ	0.805491	0.124317	6.479319	0.0000
LINFL	0.715318	0.290559	2.461865	0.0165
C	0.512305	1.713352	0.299008	0.7659

R-squared	0.901986	Mean dependent var	-0.918138
Adjusted R-squared	0.892939	S.D. dependent var	1.862642
S.E. of regression	0.609460	Akaike info criterion	1.939678
Sum squared resid	24.14368	Schwarz criterion	2.161021
Log likelihood	-62.82841	Hannan-Quinn criter.	2.027795
F-statistic	99.69553	Durbin-Watson stat	1.465999
Prob(F-statistic)	0.000000		

Appendix C

Hausman test results

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	33.820718	6	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LSIZE	-2.305816	-1.153641	0.054850	0.0000
LTD	-0.175620	-0.253796	0.007245	0.3584
LEPS	0.610092	0.655986	0.000186	0.0008
LOP	0.618308	0.062940	0.019974	0.0001
LLQ	1.926346	1.027453	0.028985	0.0000
LINFL	0.178899	0.614290	0.006583	0.0000

Cross-section random effects test equation:
Dependent Variable: LROA
Method: Panel Least Squares
Sample: 2010 2018
Periods included: 9
Cross-sections included: 8
Total panel (balanced) observations: 72

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.524483	3.553705	2.117363	0.0385
LSIZE	-2.305816	0.294901	-7.818959	0.0000
LTD	-0.175620	0.142369	-1.233554	0.2223
LEPS	0.610092	0.034437	17.71617	0.0000
LOP	0.618308	0.172441	3.585610	0.0007
LLQ	1.926346	0.212659	9.058379	0.0000
LINFL	0.178899	0.246274	0.726425	0.4705

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.945535	Mean dependent var	-0.918138
Adjusted R-squared	0.933328	S.D. dependent var	1.862642
S.E. of regression	0.480953	Akaike info criterion	1.546570
Sum squared resid	13.41630	Schwarz criterion	1.989255
Log likelihood	-41.67653	Hannan-Quinn criter.	1.722805
F-statistic	77.45450	Durbin-Watson stat	2.025783
Prob(F-statistic)	0.000000		

Appendix D

Permissions Regarding the Use of Scales

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

17.02.2022

Dear Abdullah Asaad Ismael

Your project **"The Effect Of Inflatıon On Fınancıal And Accountıng Data's Abılıty To Reflect Profıtable Gaıns Reported By Fınancıal Statements "** 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.

Appendix E

Turnitin Similarity Report

THE EFFECT OF INFLATION ON FINANCIAL AND ACCOUNTING DATA'S ABILITY TO REFLECT PROFITABLE GAINS REPORTED BY FINANCIAL STATEMENTS

ORIGINALITY REPORT

12%	10%	5%	4%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	docs.neu.edu.tr Internet Source	3%
2	Submitted to Yakın Doğu Üniversitesi Student Paper	1%
3	repository.uinjkt.ac.id Internet Source	1%
4	sovereignamerican.us Internet Source	<1%
5	etd.aau.edu.et Internet Source	<1%
6	ruor.uottawa.ca Internet Source	<1%
7	mafiadoc.com Internet Source	<1%
8	Submitted to University of Greenwich Student Paper	<1%