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The three step filtering models in assessing and comparing the performance of Islamic and conventional banks in KSA.

A Thesis Submitted in Partial Fulfillment of the
Requirements for the Master Degree in
Islamic financial management

by
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This work is original and has not been previously submitted in support of any degree qualifications or course.

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Abstract:

Islamic banks are considered as an alternative for conventional banks in the banking industry, their performance would be different from each other. This difference is important for investors in making their investment or hedging decisions. The purpose of this study is to investigate and assess the performance of the Islamic and conventional banks in the Kingdom of Saudi Arabia during the post-Financial US Crisis period. Using a series of ratios called by us "CAPLERS", which is an extension of CAMELS (implemented in the literature), we examine the performance of Saudi Islamic banks versus the conventional ones. To perform such a comparison, we use seven-year annual data from 2010 through 2016 and 12 banks where 4 are Islamic and 8 conventional. The empirical framework involves three sequential steps. The first step consists in filtering the ratios based on their correlation with each other. The second specifies the ratios, which contributes to the performance with respect to Tobin Q method. The third step consists of implementing Logit regression model to figure out the performance of Islamic banks compared to conventional ones. Our results show that Saudi Islamic banks exhibit higher performance than conventional ones in terms Efficiency, Capital Adequacy, Asset quality and liquidity.

Keyword: Islamic bank, Conventional banks, CAMELS, Performance in KSA, Ratios, Tobin Q.

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Chapter 1: Introduction

Financial institutions (banks) are the main building block for any economy of a country and play a significant role in our society because it provides a major function for contributing factors in economic growth and development. All finance and business transaction are done through the banks, so we can't ignore their job. Saudi Arabia is an oil producer where its economy is growing and considered to be one of the highly-developing countries, their main resources are petroleum and petrochemicals etc. The banking industry in Saudi Arabia has been divided into two main segments Islamic banking segment and conventional banking segment. Saudi Arabia is a place that provides Islamic banks as well as Islamic window operations that found in conventional banks. Masruki (2009),Says" that Bank's performance able to provide signal to depositor and investors whether to invest of to withdraw fund from the bank and whether to buy or to sell the bank's securities". Olson & Zoubi (2008), replies that Islamic and conventional banks should be distinguishable from one to another based on financial performance that depend on the information that obtained from company balanced sheets and income statements.

It is possible that Islamic banks (IBs) have similar financial characteristics like conventional banks (CBs), However, there is a conflict related to different result of performance in respect with different ratio between Islamic banks and conventional banks. Some studies suggest that IBs are better performing than CBs, others argue that CBs have better performance than IBs. Press, Siraj, & Pillai (2012), Observe that the previous study divided in to three different view point, some studies ranked IB in ahead of CBs while others ranked CBs in ahead of IB and some studies considered IB as similar performance as CB.

Bardastani (2016), Conducted a study in Bahrain over period 2007-2014 in respect to CAMELS Ratio and discussed the earlier studies that found conventional banks have better performance than Islamic banks. Bardastani's study proved the opposite finding that Islamic banks are better performance than conventional banks. Several studies indicate that Islamic banks had better performance than conventional banks during Financial Crisis. Can this study consider the post-Financial Crisis period as a better performance for Islamic banks over conventional banks? And thus, there is a need to conduct a study to analyze the performance of Islamic and conventional banks in KSA.

1.1 Problem statement

The comparison between Islamic bank performances with conventional banks is not new. However, the way how the studies were executed to reach such an objective differs from one study to another. Previous studies present diverse ways to quantify the bank performance. While the methods are different, they involve both advantages and disadvantages with respect to the country, period and business cycle. A method implanted by a research study could be adequate for such a study but could fail in another because of sample content, or period, or location, …

Most of the previous studies implanted ratio analysis. The choice of the ratio combination differs from one study to another.

Financial ratios would be considered as perfect indicator to test the financial health and position for the commercial banks. There are no certainty standards of ratios to measure the performance of the banks, So the study is trying to compare the financial performance of a group of banks Islamic and conventional in kingdom of Saudi Arabia, which depending on their information that published in the annual financial statement by using some categories indicators under CAPLERS

(Capital adequacy, Asset Quality, Profitability, Liquidity, Efficiency, Risk and Solvency) which is a revision of CAMELS Ratio.

1.2 Significance of the study

  The study would make people aware of a commercial bank that had better performance and stable financial position in Saudi Arabia and will support Islamic and conventional banks to understand the nature and operation of financial institution and would provide a significant contribution, and a new interpretation of financial ratio. A valuable information that would fill the gap in the body of literature on performance by providing a true picture about their performance for the relevant parties during post-financial crisis for 7 years ago . The study highlights the performance of Islamic banks in comparison to conventional banks and the empirical finding would be applicable to the market in Saudi Arabia. And thus, the expected contribution of this study is that Islamic banks are performing better during post Financial Crisis. It would enhance the reputation of the Islamic banks in Saudi Arabia

1.3 Research objectives

Investigate the performance of Islamic banks versus conventional banks in Saudi Arabia. To reach our objective, we implement our 3-step methodology that consists of using sequential steps:

1. Choice of Ratios based on the correlation with each other.

2. Choose from the uncorrelated Ratios, those which contribute to bank performance using Tobin Q method.

3. Estimate and compare the bank's performance for Islamic and conventional by using a Logit regression model.

1.4 Research question

This study is trying to answer the following questions:

1) Which Ratios contribute to determining performance of Islamic and conventional banks in KSA?

2) Which category of banks is better in terms of performance than the other?

1.5 Research contribution

This paper provides significant evidence of the existence of differences in most of the performance indicators between Islamic and conventional banks.

1.6 Brief description of data and methodology

The data that has been used in this study includes information from balance sheets of 12 Saudi banks from 2010 to 2016. In order to execute our three steps, we use correlation calculation, Tobin Q method and Logit regression.

1.7 Limitation of the study

The numbers of pure Islamic banks in Saudi Arabia was limited and small. Only four among 12 local banks are considered as pure Islamic banks while the remainders are conventional banks, also the sample period is for seven years. Furthermore, the initial subjective choice of ratios considered for the study could be considered as a limit.

1.8 Hypothesis

Previous studies set many hypotheses that have been tested to accept or reject based on the theory. A paper belongs to Amba & Almukharreq (2013), states their hypotheses as Islamic banks are more profitable, more capital structure, more liquidity than conventional banks before and during the Financial Crisis which is similar to this study which are for Capital Adequacy, Profitability, Liquidity. Some studies such Management & Innovations (2015), Press, Siraj & Pillai (2012). provides hypothesis for each sub ratio to be tested while a study related to Bus (2016), suggests their hypothesis focusing on risk and efficiency.

The study set the following hypothesis for CAPLERS Form.

H1: Islamic banks perform significantly better than conventional banks with respect to Capital Adequacy.

H2: Islamic banks perform significantly better than conventional banks respect to Asset Quality.

H3: Islamic banks perform significantly better than conventional banks respect to Profitability.

H4: Islamic banks perform significantly better than conventional banks respect to Liquidity.

H5: Islamic banks perform significantly better than conventional banks respect to Efficiency.

H6: Islamic banks perform significantly better than conventional banks respect to Risk and Solvency.

1.9 Structure of Thesis

This study includes 6 chapters on top of the introductory chapter.

Chapter 2 presents the literature review involving up-to-date research related to our main topic.

Chapter 3 includes the methodology and data, which shows the details of the implemented steps as well as the used models. In addition, it presents descriptive statistics for the data.

Chapter 4 exhibits the empirical results and discussion about the findings.

Chapter 5 presents the summary of the main findings.

Chapter 2: Literature Review

Any papers that related to financial ratio are very important for both researchers and those related to finance. "Financial ratios are tools that measure the health of the business for banks or any financial institution and measure their performance, to diagnose potential problems and operations over specified period" Spathis & Doumpos (2002). Financial ratio involves the comparison of a figure from financial statement to gain information about financial institution performance.

2.2 Background on differences between Islamic banks and conventional banks

IBs are the banks that operate under sharia low and providing products & services that have similar characteristics offered by CBs in order to meet the religious requirement. CBs are fully manmade principles that generate their income by charging an interest on a loan, deposit, advance and leasing without making any transaction, they lend money and receives higher interest from the borrower and bound to pay interest for depositors. That interest is considered as Riba in Shariah which should be avoided in dealing with IBs, any predetermined payments over and above the actual amount of principle is prohibited because making money from money is not acceptable in Islam. IBs generate their profit by Islamic contracts such as profit loss sharing (Mudaraba, Musharaka), cost profit (Murabaha), lease (Ijara), Construction (Istisnaa), Salam and others contract, the lender must share in the profits or losses arising from the enterprise for which the money was lent, Amba& Almukharreq (2013). All activities and transaction that involving speculation (Gharar) must be avoided. Investment should not support practices or products that are forbidden or discouraged by Islam. IBs cannot invest in contribution or protection that involving permitted product such as Alcohol, pork, Tabaco, gambling and illegal drugs. IBs cannot do short selling as CBs because the

short selling is prohibited by Islam for selling something that is not owned. The aim of IBs is to provide fairness and justice for societies while the aim of CBs is maximizing the profit and bearing the loss to the customer. CBs predetermined the rate of interest for investors to guarantee the profit unlike IBs can't guarantee the profit due to Shariah roles. IBs calculating and paying Zakat while CBs not dealing with it. Both IBs and CBs charging additional amount in case of deflating in payment but IBs can't accept that amount in their account they donated to charity. Compounding interest is the main function of the CBs while participation in partnership business is the main function in IBs to increase the public interest. CBs gives greater emphases on credit-worthiness of the costumer to fix the income and IBs gives greater emphases on viability of the project. The client refers to creditor and debtors in CBs but IBs indicates to their client as buyer and seller or partners or investors and trader. CBs have to protect and guarantee all deposits while IBs guarantee only deposit accounts. IBs does not show interest income and do not pay interest, therefore interest rate risk analysis can't be applied to these banks.

2.3 CAMELS Ratios

It's a ranking system analytical which measure the financial performance of financial institution that gives information about financial validity. CAMEL established in 1979 by federal banking regulators to show the overall performance of any banks. These ranking system is construct and interduce first in USA for monitoring, Rose & Hudgins (2010). The component of CAMELS Framework are Capital adequacy, Asset quality, Management quality, Earnings, liquidity and sensitivity to market risk that used to calculate the performance with different respects and the sixth element was add in 1996. Derviz, & Podpiera (2008), suggests that CAMELS Ratio is not only a supervisory tool, it's more than that it's a generally accepted quantifies of the otherwise soft nation of bank safety. According to Salhuteru & Wattimena (2015), CAMELS Ratio can be used

to predict the strength and the failure rate of the banks by report the financial report to assess the performance. Here are the components of the CAMELS Ratio:

2.2.1 Capital adequacy

Capital adequacy ratio is the ratio which designed to measure the capacity of a bank in the context of meeting the time liabilities and other risk (credit risk, market risk, operational risk, etc). It is a measure of bank capital position wither that organization is financing its assets whether from liabilities or equity or both at the same time. The other name of capital adequacy ratio is capital to risk (weighted) asset ratio. capital adequacy measures the financial strength and viability of the banks, Bardastani (2016), Replies that capital adequacy is whether the bank has enough capital to control any potential of losses and reduction in asset value that could happened and cause a bank to fail also provide a protection to depositors and creditors in case of liquidation. The measurement of the capital adequacy is an important parameter that can assist the bank and understanding the shock captivating capability during time of the risk, Merchant (2012).

2.2.2 Asset Quality

It's the factor that test the financial credibility of the banks and their risk exposure and study the degree of financial strength. The assets of the banks are considered the loans which found in the left side of the Balance sheet so the quality of the loan for any bank is when attracts the investors or depositor and be significant with them and this is the main source of the bank's income also it measures the credit worthiness of the banks. Asset quality will help the bank to understand the risk with respect to the exposure of a bank to the debtors.

2.2.3 Management in Quality

It's the factors that measure efficiency and productively the bank managers to provide more products and deposits from trustworthy and strong depositors also how to mitigate the defaults of the borrowers through creditworthiness customers.it also means the superiority of the management of safeguard that let the banks operation run in a smooth and decent manner and how control the cost and increase productivity and achieving higher profit, Tlemsani, & Al Suwaidi, (2016).

2.2.4 Earnings Quality

It's the most important performance measurement of the banks that referred to income of a business and would disclose the profitability performance of the banks. Banks earn profit when their income is more than their expenses. "It aide the banks in concentrating on the loss gripping capacity, determining the level of its earnings and revenue as well as the fund available for rewarding its shareholders" Merchant (2012). The earnings ratios are the overall profitability ratios that indicate how efficient the concern is in utilizing the assets. In addition, the quality and trend of earning of a bank based on how well asset and liabilities managed by management of institutions, Rostami (2016).

2.2.5 Liquidity

Liquidity is the life of commercial bank, liquidity means cash availability: how fast can a bank convert its assets into cash at face value to meet the cash demands of depositors and borrows, Samad (2004).   Liquidity ratios are measures that used to examine the ability of the bank to meet the short term financial obligation usually one year its disclose the relationship between current assets in order to maintain the right cash balance and current liabilities such as loan to deposit, cash & portfolio investment to deposit and loan to total asset, Tlemsani (2016). Liquidity is the ability of the bank to convert the assets to cash and have enough capacity to meet the financial

obligation as they become due, without incurring unacceptable losses, Bardastani (2016). liquidity ratios are important for all banks because liquidity problem may lead to insolvency and then end with bankruptcy also it indicate to measure the financial health. If the results of these ratios are greater than 1 it indicates that short term debts are fully covered or in other meaning is that company is in good financial health.

2.2.6 Sensitivity and risk or Sensitivity Market risk

It's a ratio that measure the risk and covering power of organization that are defined and determined to finalize bank's performance and disclose the degree of changing in interest rate, foreign exchange rate, commodity price or equity price can affect the earning of the banks or capital. the main risk includes market risk, exchange risk, maturity risk and contagion risk. Risk sensitivity is evaluated in term of management's ability to control the market risk, Rostami (2016).

Here are some evident to review the ratios that identified and what are the ratios that determines

CAMELS Ratio:

Paper	capital adequacy	Asset Quality	Management in Quality	Earnings Quality	Liquidity	Sensitivity Market risk
Bardastani, (2016).	Tier 1 Ratio, Total Capital Ratio, Equity to Net loan, Equity to liability and Equity to Customer and Short-term Funding	Loan loss Reserve to Gross Loan Ratio, Loan loss Provision to Net Interest Revenue, Loan loss Reserve to Impaired loans, Impaired loans to Gross loans and Impaired loan to Equity	Management Efficiency which, Recurring Earning Power, Non-Operational Items to Net Income, Equity to Total Asset, Cost to Income Ratio Operating Profit to Risk Weighted Assets (%)	Net Interest Margin, Net Interest Revenue to Average Assets, Return on Average Assets, Non-Interest Expenses to Average Assets	Interbank Ratio, Net loan to total Assets, Net loan to Total Deposits &Borrowing, Liquid Assets to Deposit Plus Short-Term Funding and Liquid Assets to Total Deposit plus Borrowings	Doubtful Debts to loans, Provisions of loan to loans, Bad Debts Plus Overdue to loans, long term Deposits to Deposits and Demand Deposit to Deposit
Rostami, (2015)	Tier1, Tier 2, Total capital base	Rate Base Assets to total Assets, Bank	Net profit to Number of		Investment to Total	

	to Total Complementary Capital, Liability to Equity, Deposit to Equity	Shares of Income to Total Assets, Deposit to Total Assets, Fix Assets to Equity and Fix Assets to Total Assets	Branches, Total Assets to Number of Branches, Total liabilities to Number of Branches, Total Deposit to number of Branches and Total loans to Number of Branches		Assets, Current liquidity to Deposits, Security to Total Assets, Current liquidity to Demand Deposits and Liquidity to Assets	
Dincer, Gencer, Orhan, & Sahinbas,. (2011)	Equity to (loan +Market +Principle Amount Subject to Operational Risk), Equity to Total Assets and (Deposit +Non-Deposit Sources)	Financial Assets to Assets, loans + Receivable to Assets and Permanent Asset to Assets	Interest Expenses to Total expenses, Interest Incomes to Total Incomes, and Total Incomes to Total Expenses	Net profit to Total Assets, and Net Profit to Equity	Liquid Assets to Assets, Liquid Assets to Short Term Liabilities, Liquid Assets to Deposit and Non-Deposit Sources	Total Assets to Sector Assets, (loans and Receivables) to (Sector loans and Receivables), and Deposit to Sector Deposits
Roman, & Sargu, (2013)	CAR, Equity to Total Asset	Impaired loan to Gross Loans, Loan Loss Provision to Net Interest Revenue and Total Loans to Asset.	Operating Expenses to Asset, and Interest Expenses to Deposit	ROA, ROE, and Cost to Income Ratio	Liquid Assets to (Deposit and Short-Term Funding), and Net loans to (Deposit and Short-Term Funding)	The Ratio of its Assets to the Assets Ratio
Chandani, Mehata, & Chandrasekaran, (2014)	CAR, Proportion of Debt to Capital, Debt to Assets, Bond Investment to Assets	Non-Current Receivables Gross to Debt, Noncurrent Debt to Debt, Loans to Assets and Noncurrent Net Debt to loans	Debt to Deposit, and Returns Per Employee Measuring	Operating Profit to Average Capital Turnover Rate, Margin or Net Profit to Assets, and Interest Income to Income	Securities to Assets and Assets to Deposits	
Rodica-Oana, (2014)	Solvability Ratio and Equity Ratio	Risk ratio, Interbank loans and Investments to Assets, loans to Assets, Net Overdue and Doubtful Loans to Loans, Net Overdue and Doubtful Claims to Assets, Net Overdue	State Banks and with State Major Ownership, Private Banks and with Private Ownership, Banks legal Persons, and Branches of Foreign Banks	Total Provision Loss Category	Effective liquidity to Required liquidity	the Loans Granted and Commitments Assumed by the Bank in Some Currency

		and Doubtful Claims to Attracted and Borrowed Funds, NPL, Total Amount Due and Overdue, Debtors and Overdue Debtors Number, and Number of Loans				
Soni, (2012)	CAR, debt to capital, debt to assets and investment securities to assets	Non-Current Receivables to Total Receivable, Noncurrent Debt to Assets, Investment to Assets, and Percent Changes in Non-Current Receivables	Total Debt to Total Deposit, Per Capita Profit Per Employee, ROE, and Earning Per Employee	Operating Profit to Average Working Capital, Margin to Total Assets, Net Profit to Assets, Interest Income to Total Income, and Non-Interest Income to Total Income	Liquid Assets to Total Deposit, and Securities to Assets	
Gunsel, (2005)	Total Capital to Assets and loan to Assets	Loan to Assets ratio and NPL ratio	Operating costs to Assets, and Interest Expenses to Total Deposit.	Net Income to total Assets, and Interest Income to Assets	Liquid Assets to Total Deposit, and Deposit to Total loans	Assets to assets of the banking system
Rozzani, & Rahman. (2013)	Earning to assets	Loan to Assets Ratio and NPL Ratio	Staff Costs to Assets	ROA and ROE	Net loans to (Deposit and Short-Term Financing), Short-Term Liquid Assets to Deposit and Financing	The Risk for the Banks is Risk Sharia
Dash, & Das. (2009)	CAR	(Gross Noncurrent Receivable, Not of Non-Current receivable, net of noncurrent receivable) to loans	Investment to Assets, Loans to Deposit, Per Capita Revenue, and Per Capita Income.	Operating Profit to Average Working Capital, Net Profit to Assets, and ROE	Securities to Investment, and Securities to Assets	EBTA
Venkatesh, & Suresh, (2014)	Equity to Total Assets, CAR, Net Capital to Facilities, Capital to Short-Term Funding, Capital to Debt	Loan loss Reserve to Gross Loans, Loan Loss Provision to Net Interest Revenue, loan loss Reserve to Impaired loans, Net Charge Offs to Average Gross loans, and Impaired loans to Equity.	Noncurrent loans to Equity, Non-Operational Items to Net Income, Equity to Asset, and Operating Profit to Total Risk Weighted Asset	Rate Margin, Cost of Assets Minus Interest Income Divided by Average Assets, Other Operating Income to Assets, ROA,	Receivables from other Banks Divided by Debt to Other Banks, Assets to Loans, Net Loans to	Risk Stocks, the Risk of Interest Rate, and Exchange Rate Risk

				Equity Ratio of Operating Expenses to Operating Income, Noninterest Expenses to Assets	Short-Term Deposit, Net loans to Total Deposit, Cash to Short-Term Deposit, and Cash to Deposit.	
Merchant, (2012).	Equity to Total Asset Ratio EQTA	Loan Loss Reserve LLR	Cost to Income Ratio COSR	ROAA, ROAE	Net loan to Total Assets NLTA	
Faizulayev, (2011).	Total Equity Over Total Assets TETA	Provision of Loan Loss Over Total loan PLLTL	Total Loan Over Total Deposits LD	Cost to Revenue Ratio CR	Liquid Assets Over Total Deposit LIQD	
Al-gazzar, (2014).	Total Equity to Total Asset ETAR	Loan Loss Reserve to Total Loan LLR	Loans to Deposits	Total Expenses to Total Revenue COSR	Net loan to Total Asset NLTA	

Table (1) Determination of CAMELS Ratio.

2.3 CAPLERS Form

It's a several factors and important indicators that would test and measure the Financial Performance of the banks based on their financial statement it's a revision and extension to the General CAMELS Ratio and to becomes more specialized which are C referred to capital adequacy, A referred to Asset Quality, P referred to profitability, L referred to liquidity, E referred to Efficiency, R referred to risk and S solvency.

2.3.1 Profitability

Profitability ratios measure a company's ability to generate earnings in accordance to sales, assets and equity. These ratios highlight that how effectively the profitability of a company is being managed. Different profitability ratios provide different useful insights into the financial health and performance of a company. Its measure the rate of growth of future earnings for the bank, its indicate to final result of business operation, these ratios attract the equity holders for the ultimate

returns. It's a ratio that used to measure the ability of the banks to gain the profit compared to expense and examines the bank's investment decision compared to their debt circumstances, the sub-parameters are Net interest margin, Net interest revenue to average assets, Other operational income to average assets, Return on average assets and Non-interest expenses to average assets, Bardastani (2016). IBs and CBs have been pic out different strategy in order to increase their profitability level and achieve higher market, Merchant (2012). A study belongs to Rostami (2015), conduct these rations as sub-parameter in calculating the Earning such as Fees and commissions to total income, Loan income to loans, Deposit cost to deposit, Loan income to deposit cost and Cost to income. The higher profitability ratio indicates better performance of a company.

2.3.2 Efficiency

Efficiency in Financial Performance of banks is very important in all societies and economic systems. One of the most important bank managers that determined how to optimally use their scarce financial resources. By analysis and evaluation of the financial performance of different banks can identify the strengths and weaknesses in the system further improvement and how efficient a bank is in using its assets to generate profits and how sound was its financial health was over a given period of time. It can also, be used to compare and assess similar firms across the domain of banking in the country. It's the ratio that would ensure the growth and stability of the bank. Bardastani (2016), Suggest these sub-ratios that would test the management efficiency of the banks such as Recurring earning power, Equity to total assets, Non-operating income to net income, Cost to income and Operating profit to risk weighted assets. Bus (2016), measures three ratios and considered it as an indicator for the efficiency performance which are Interest income to expenses, Operating expenses to assets, and Operating income to assets. Olson & Zoubi (2008), determines 6 ratios for efficiency, Operating expense to assets, Operating income to assets, Operating expenses to revenue, Asset turnover, Net Interest Margin, and Net Non-interest margin.

2.3.3 Risk and Solvency

Risk and solvency ratios are used to measure the degree of financial risk that a business faces, or in other words these are the tools that are used to measure the ability of a company to meet its debt, long term financial obligations. Solvency ratio is measured by the relationship between the assets, liabilities and equity of a business at a given point in time. By using this ratio, we can assess our level of debt and decide whether this level is appropriate for our company. When a bank goes insolvent, creditors often lose a portion of principal and interest payments, while equity investors can potentially lose all of their investment. It is also referred to as financial leverage ratios. Financial leverage represents the extent to which a bank relies on debt financing as compared to equity financing. Hence, financial leverage could allow banks to make gains (losses) that highly exceed what is allowed to them if they invest their own funds solely and this might eventually result in a higher probability of bankruptcy and financial distress. this ratio related to the total value of its asset is more than its liabilities, in this case the banks will not face the insolvent and become risky. less risk more stable position for the bank. Samad& Hassan (1999), appoint to several ratios that determine the performance of risk and solvency which are Debt to equity, Debt to total asset, Equity multiplier, and loan to deposit ratio. Bus (2016), suggest that these ratios would test the performance such as deposit to assets, cash to assets, and total liabilities to equity. Olson & Zoubi (2008), evaluates 6 ratios, Deposit to assets, Equity Multiplier, Equity to deposits, Total liabilities to equity, Total liabilities to shareholder capital, and retained earnings to total assets. Credit risk is the risk of loss that arises from a borrower's inability to meet his obligations. For any financial institution measuring and managing credit risk is very important. Credit risk ratios measure the degree of risk of loss that arises from a borrower or counterparty's inability to meet its obligations on time. We use the Common Equity to total Assets, Total Equity to Net Loans

Ratio, and Impaired Loans to Gross Loans ratio in order to measure the degree to which banks face credit risks, Massah, & Al‑sayed (2015).

2.4 Empirical Studies on the Performance of Banks

A large number of studies highlighted globally to assess and evaluate bank's performance in respect to several measurements in the banking sector. Measuring the performance of IBs versus CBs have also been investigated by many scholars resulting in contradictory findings. The study seeks to provide a brief review of previous studies about Islamic and conventional banks performance over different countries with different period during Financial Crisis and post‑Crisis.

Samad (2004), Examines the comparatives performance of Bahrain's interest ‑free IBs and interest based commercial CBs duding 1991‑2001 for 21 banks with respect to nine ratios under three main category profitability, liquidity risk and credit risk justified T‑test as their methodology suggesting that there is no major difference in performance between Islamic banks and conventional banks respect to profitability and liquidity but there is significant difference in credit performance which are less exposed to credit risk compared to CBs, CBs in Bahrain have a larger volume of operations compared to IB in all respect loans, assets, deposit profits and equity

Olson & Zoubi (2008), Disclose the distinguish between IBs and CBs in the GCC region by testing 26 accounting financial ratio for 2000‑2005 for 237 banks before the Economic Downturn Crisis using logit, neural network, and K‑means nearest neighbor classification models due to that financial characteristics of IBs are different from those of CBs .The author determines the ratio that are good discriminators between IBs and CBs such as profitability ratios, efficiency ratios, asset‑quality indicators and cash/liability ratios. The study found that IBs are able to correctly distinguish by 92% and more profitable but not quite as efficient as CBs.

Masruki, Ibrahim, Osman & Wahab (2009), Test the performance of the IBs and CBs in Malaysia in period 2004-2008 during economic downturn for 5 years using T-test , the comparison between them in term of profitability(Return on Average Asset (ROAA), Return on Average Equity(ROE)), liquidity(loan deposit ratio), risk and solvency(LDR), efficiency(NFIM), (NFRA) and they found that, the profitability of the conventional banks was higher compared to Islamic banks due to net financing and better asset quality that they have and more liquid due to higher ratio for liquidity. Relating to credit risk, the CBs has high credit risk since their LDR much higher than IBs. Regards to efficiency, IBs are more profit efficient than CBs.

Tlemsani & Al Suwaidi (2016), Analysis the performance of 8 Islamic and 43 conventional banks during financial crisis in UED for 2007-2008 through cross sectional analysis to several ratio such as Capital Adequacy, Profitability (ROA, ROE, Profit Margin(PM), Liquidity (Current Ratio, Liquid Asset to Total Asset, Loan to Total Asset), leverage , Efficiency (Asset Utilization (AU)) and debt to equity ratio , the study calculate its ratios and compare it with the past, it found that Islamic banks have higher ROA, ROE Ratio in Profitability and (Asset Utilization (AU) in Efficiency than CBs also IBs maintain an adequate level of Liquidity compared to CBs . As for the total debt to equity ratio, IBs have lower ratio compared to CBs

Faizulayev (2011), Conduct a study in different countries such as Turkey, Egypt, Pakistan, Malaysia and UEA at 2006-2009 to test the performance of IBs and CBs by including 36 banks. the study employed CAMEL Model as independent variable to disclose the relationship with Profitability as dependent variable using T-Test and F-Test, the author found there are differences in Financial Performances between IBs and CBs in terms of Profitability determent (ROE, ROA, NIM) and affected by the independent variables CAMEL Framework in the same way. The IBs are less liquid than CBs because of long term investment

Najjar (2013), Understand and analyze the different financial ratio between IBs and CBs in Bahrain in the context of the global Financial Crisis for the period of 2005-2009 before and after for 119 banks testing Profitability, Liquidity, Interest rate, Size and Type of the banks and policies and regulations using trend analysis ether positive or negative trend, his result indicates to a decline in profitability ratio because of the Financial Crisis that hit the Performance of the banks, CBs has higher leverage ratio due to Interest and fee income while IBs has low ratio that because of to their income based on profit sharing income.

Amba & Almukharreq (2013), Investigates the impact of Financial Crisis on the Performance of the IBs and CBs for 92 banks in GCC for the period from 2006-2009 before and during Crisis utilizes T-TEST to figures any significant difference examines three ratio for Profitability ROE, ROA, NIM(Net Interest Margin) , Equity and tangible equity to measure Capital Structure ,loans and liquid assets to measure the Liquidity and finally, Deposit and overhead cost as indicator for Liability . The result found that there is no impact of Financial Crisis on profitability for both banks and IBs were more profitable, butter capital structure than CBs while CBs bad butter liquidity and liability than IBs.

Press (2012), Builds their study based on three different view point, some studies ranked IBs in ahead of CBs while others ranked CBs in ahead of IBs and some studies considered IBs as similar Performance as CBs. Thus, the researcher review and compare the performance of the IBs and CBs in GCC region in two parts over period 2005-2010 for 12 banks 6 Islamic and 6 conventional banks first part respect with several ratios related to profitability such as ROA-ROE-OER-NPR-ROCA and the second part comparing the average annual growth AAG of operation in terms of Total income, Total expense, Total profit, Total asset, Total customer deposit, Share capital and

total equity. The study adopts ANOVA test the research hypothesis to reach to the result and the paper released a better performance of IBs than CBs and possess a higher AAG rate.

Kakakhel, Raheem& Tariq (2011), Observes two IBs and two CBs in Pakistan during the period from 2008-2010 to assess their financial performance whither IBs are performing well in Pakistan compared to CBs respect to Liquidity, Profitability, Solvency. The result indicates that CBs are more profitable than IBs but IBs have better current, cash, Debt to Asset and asset Turnover Ratio while CBs have good performance in other remaining ratios. Although in some ratios performance of IBs are also good but according to overall results CBs are more efficient than IBs.

Fayed (2013), Estimating the Financial Performance of 9 IBs and CBs in Egypt to find out which of the banking performing better than the other during the period from 2008-2010 utilizing 7 Financial Ratio under Profitability(ROA),(ROE), Liquidity Net Loans to Asset Ratio (NetLTA), Net Loans to Deposits and Borrowing (NetLD&B), Credit risk and solvency Total Equity to Net Loans (EQL), Impaired Loans to Gross Loans (IMLGL), and the study indicate to a better performing of CBs over IBs in respect to Profitability, Liquidity and Credit Risk Management while IBs lead in solvency management .

Babatunde & Olaitan (2013), Studied 9banks in United Kingdom between 2007-2011 based on the use of Financial Ratio Analysis (FRA) and Data Envelopment Analysis (DEA) selected by performance indicators in terms of Liquidity, Profitability, Risk and Solvency and Efficiency. Their paper found that CBs are more Profitable and better Effectively and timely meet up with Financial obligations. However, IBs are less exposed to liquidity risk and appear to be more cost-Effective while the CBs depend more on external sources for funding.

Merchant (2012), States that banks can adopting different way to measure the effect of the Financial Crisis but what strategy dose affect the performance of Islamic and conventional. The researcher analysis and compare the performance of IBs and CBs during the Crisis and after the Crisis to see the changes with respect to the behavior of the banks and the effects of the Crisis over 2008-2011 by deploying the CAMEL testing factors for 27 banks in the GCC region. The methodology for the study was 2 trailed Test, the study found that Islamic bank were better capitalized but low in Profitability and poor in Efficiency after the Crisis

Management& Innovations (2015), Argue the difference in performance between two type of banks during time of economic downturn by Studied 25 GCC banks for the period 2001-2013 estimating multivariate General Liner Model (GLM) in respect with loan to assets ratio, Deposit to assets ratio, investment to assets ratio, ROE .The statistical analysis showed significant difference between both banks in term of loan to asset , the IBs scored higher ratio than CBs also deposit to asset ratio for IBs were better than CBs but for (ROE) ,Return on investment IBs were less Performance than CBs during Financial Crisis.

Al-gazzar (2014), Compares the Financial Performance of IBs vs CBs in MENA&GCC region over the period 2009-2013 Appling CAMEL framework's bank -specific performance measures, Profitability Ratio and external macroeconomic variables, (GDP), (INF). Employed ANOVA Tests and regression analysis. The study revealed, that IBs outperformed CBs in terms of Capital Adequacy, Asset quality, Management quality and Earnings quality. However, they had a weaker liquidity position in comparison to CBs.

Milhem& Istaiteyeh (2015), Measures the Financial Performance of 16 banks in Jorden over the period 2009-2013 by viewing Data Development Analysis(DEA) and Stochastic Frontier Analysis (SFA) and examining financial situation using traditional ratio analysis under 13 indicators in

terms of Profitability(ROA),(ROE), (profit expense), Liquidity (cash deposit, Loan deposit, current ratio, current assets ratio) , Risk and Solvency (Debt Equity Ratio (DER), Debt to Total Asset Ratio (DTAR), Equity Multiplier (EM), Loan to Deposit Ratio (LDR)) , and Efficiency Asset Utilization Ratio (AU), Income Expense Ratio (IER), Operating Efficiency Ratio (OE) . The result shows after conducting T-Test that IBs are less Profitable, more liquid, less Risky, and less Efficient comparing to CBs.

Bus (2016), Analysis the Performance of the Kingdome of Saudi Arabia during Financial Crisis in period 2005-2014 based on 9 ratios under 3 main category Profitability (Return on Asset (ROA), Return on Equity(ROE)), Efficiency (operating expense to asset) and Risk applying Logit regression and the study found that IBs in KSA are more Profitability, less Efficiency than CBs.

Bardastani (2016), Designed his paper to evaluate and compare Financial Performance of 10 selected retail CBs and IBs in Kingdom of Bahrain using A CAMEL Ranking based approach for period 2007-2014, (C-Capital Adequacy, A-Asset Guality, M-Management, E-Earning, L-Liquidity, S-Sensitivity to Market Risk) 25sub-paramerters 5 for each category using ANOVA Test, his result argues and disproved the popular concept that CBs performs better than IBs.

Massah & Al-sayed (2015), Highlights the Financial Performance in UAD between IBs and CBs during the period 2008-2014 for 16 banks using T-TEST and P-value to find out which banks performed better than the other respect to profitability(ROA), (AOE), liquidity(LDR), (LAR), Solvency (DER), (DTAR), (EM) and Credit Risk, their study found that CBs well performed than IBs with all respect ratio. IBs are less solvent (Riskier), less Profitable and have a higher Credit Risk though more liquid. While the CBs are out performed in Profitability and Solvency.

Rashwan & Ehab (2016), Conduct a study for Islamic and traditional banks in various countries Egypt, Pakistan, Bangladesh, Saudi Arabia, Kuwait, Qatar, Iraq, Emirates, Sudan, Turkey, Bahrain and Jordan throughout 2009-2014 to evaluate the efficient performance of 66 banks based on cost Eefficiency, Revenue Efficiency and profit efficiency ratios and considered the impact of these efficiency on bank profitability in terms return on assets and return on equity, using ANOVA Test and multiple regression analysis their finding show that the overall results imply the superiority of traditional banks to Islamic banking system. the conventional banking system is superior in terms of cost, revenue and efficiencies, while IBs have more influence on their profitability compared to their CBs.

2.5 Tobin Q

This section presents an overview about the studies that implemented Tobin Q methodology.

It is a ratio for the market value of the firm's assets and the replacement value of those assets, any firm with high Tobin Q (Price / Book value of Equity) more than one referred to better investment opportunities, higher growth potential, well performed management with the assets under its command and the firm that has ability to apply Tobin Q indicate to a firm success in the business cycle.

It's a measure of firm assets in relation to a firm's market value. According to James Tobin, the firm should be worth what they cost to replace and the value of Tobin Q comes between 0 and 1

Q = referred to the performance of the bank based on the market value and book value that presented by James Tobin of Yale University (Mehrani, Hoseini, Heidari, Pouyanfar (2013).

Tobin Q= market value of firm's outstanding of stocks and debt divided by the replacement cost of asset (Book value).

Where, Market Value of Equity = Market price per Share × Number of Share Outstanding.

Book Value of Equity = Total Assets – Total Liabilities.

Tobin's Q > 1 means the stock is overvalued. the market is selling the company's' assets higher than its stated book value. So, its stock is more expensive than the costs of its assets.

Tobin's Q < 1 means the stock is undervalued. the market is selling the company's assets less than its stated book value. So, the market value is below the cost of its assets.

Tobin's Q = 1 means the stock is Fairly valued. So, market value reflected solely the recorded assets of a company.

Sidqui & Shoaib (2011), Found in their study "Measuring performance through capital structure in Pakistan" that size of the bank played a significant role in determining the profitability of the bank measured by ROE. They used also the Tobin's Q model as a proxy of determining banks performance while they found that Tobin's Q is affected by the size of the bank, the leverage Ratio and Investments carried out by the bank.

Alkhatib, Superiore, & Pavia (2012), Examine the Financial Performance of five Palestinian commercial banks listed on Palestine securities exchange using three indicators; Internal–based performance measured by Return on Assets, Market-based performance measured by Tobin's Q model and Economic–based performance measured by Economic Value add employed the correlation and multiple regression analysis of annual time series data from 2005-2010 , The study found that there exist statistically insignificant impact of bank size, credit risk, operational efficiency and asset management on financial performance of Palestinian commercial banks.

Catapan, Anderson (2012), Have conducted a study to compare the relationship between Profitability indicators and Tobin's Q to know if there are any significant statistical differences between EBITDA/ Assets, EBITDA/PL, ROA, ROE and Tobin's q in Brazilian Companies. They found that the profitability indicators have a strong influence on the value of Tobin's q.

Chapter 3: Data and Methodology

3.1 Introduction

The financial ratios are prepared based on historical financial statements and they are useful indicators of a bank's current financial performance and current financial situation also can be used to analyze the current trends and to compare the financial position to each other in order to predict future bankruptcy. The ratio analysis involves method of calculating and interpreting financial ratio to assess banks performance. In order to see how IBs performed in comparison with CBs over 7 years during post-financial crisis period 2010-2016 with 84 observations of 12 banks, the study evaluates inter-bank performance in term of six main categories ratios come under CAPLERS form which are C referred to capital adequacy, A referred to Asset Quality, P referred to profitability, L referred to liquidity, E referred to efficiency, R referred to risk and S solvency that adapted from CAMELS Ratio of the performance analysis.

Previous studies evaluate the performance of the banks with several approaches. Some studies suggest ANOVA Test (Bardastani, (2016))., T test (Masruki, Ibrahim, Osman, & Wahab, (2009)) and Amba, & Almukharreq (2013)., 2 Trailed T Test (Masruki, Ibrahim, Osman, & Wahab, (2009)), (Merchant, (2012))., Logit model (Bus, Review, Zehri, & Mbarek, Ben. (2016)), (Olson, & Zoubi, (2008)), some estimating multivariate General Liner Model (GLM) (Management & Innovations, (2015)) Other comparison the main variables (Tlemsani & Al Suwaidi, (2016)) or Average Annual Growth (AAG) rate for each variable Press, Siraj & Pillai. (2012). None of the earlier papers have combined Logit Model with Multiple linear regression using Tobin Q Ratio and thus this paper would follow this method.

3.2 Data

3.2.1 Data Source and sample period

The sample of the study is a quantitative panel data represent whole population using a across sectional analysis including all Islamic banks and conventional banks in KSA from 2010-2016 for 12 banks, the data used a cross sectional analysis between 4 Islamic banks and 8 conventional banks, the sample size is 84 observations 28 for Islamic bank and 56 for conventional banks. The study did not include any foreign banks in this analysis. The data that was used collected from financial statements that state in the annual report by using Blooming Software.

The dependent variable is the performance of the banks and the independent variables are CAPLERS form which C referred to capital adequacy, A referred to Asset Quality, P referred to profitability, L referred to liquidity, E referred to efficiency, R referred to risk and S solvency.

3.2.2 Types of Banks listed in Saudi Arabia

There are many banks that operated under supervision and regulation of SAMA (Saudi Arabia Monitory Authority). The commercial banks are divided in two , Islamic and Conventional banks

3.2.2.1 Islamic banks selected for the study

Names of the banks	Date of Establishment
Al Rajihi bank.	1957
Bank Al Jazira.	1975
Bank Al Bilad	2004
Alinma bank	2007

Table(2)Saudi Islamic banks

3.2.2.2 Conventional banks selected for the study

Names of the banks	Date of Establishment
The Saudi British bank.	1978
Saudi investment bank.	1977
Banque Saudi Faransi.	1977
Riyad Bank.	1957
Samba Financial Group.	1980
Saudi Holandi Bank (Al Awal).	1926
Arab National Bank.	1979

Table(3) Saudi conventional banks

These are the following suggested ratios that would test the health of financial system in the performance

Ratio	Indicators	Definition
Capital Adequacy:		
Tire 1 Ratio	TIER1	Total Shareholders' equity/Total risk-weighted Assets
Capital to Liability & Equity	CTL&E	Total Capital /Total Liability & Equity
Total Equity to Total Asset	ETA	Total Common equity/Total assets
Shareholders 'equity to Liability & Equity	SETL&E	shareholders 'equity/Total liability & equity
Asset Quality:		
Asset to Equity	ATE	Total Asset /Total Equity
Short Term Borrowing to Liability & Equity	STBTL&E	Shor term Borrowing / Total Liability & Equity
Long Term Borrowing to Liabilities &Equity	LTBTL&E	Long Term Borrowing / Total Liabilities &Equity

Reserves loan loss To Total Loan	RLLTL	Reserves from Loan Loss/Total Loan
Non-performing Asset to Total Loan	NPATL	Non-performing Asset / Total Loan
Profitability:		
Return on Asset	ROA	Net income/ Total Asset
ROA to ROE	ROATROE	(Net income/ Total Asset)/ (Net income/ Equity)
Return on Common Equity	ROE	Net income/ Common Equity
Profit Margin	PM	Net income/Operating Income
Return on Capital	ROC	Net income/ Total Capital
Liquidity:		
Deposit to Asset	DTA	Total Deposit /Total Asset
Loan to Deposit	LTD	Total Loan /Total Deposit
Long Term Debt to Equity	LTDTE	Long Term Debt /Total Equity
Loan to Asset	LTA	Total Loan /Total Asset
Efficiency:		
Efficiency Ratio	ER	(Op Exp/((Net Int Inc+ Commission & Fees Earned + Other Oper Inc + Tra Acc Profit +Gain /Loss on Inv /Loans +Other Inc -Commissions& Fee Paid)+ Tax Equivalent Adjustment or Net Revenue -Net of Commissions Paied)*100
Operating margin	OM	Operating income/total revenue
Asset Turnover	AT	Interest Income/Average Total Assets
Net Interest Margin	NIM	Interest Income - Interest Expense / Total Earning Assets
Risk and solvency:		
Debt Equity Ratio	DER	Total Debt/Total Equity
Retained Earning to asset	RETA	Retained Earnings /Total asset
Debt to EBIT	DBTEBIT	Total Debt / EBIT
Debt to Asset	DBTA	Total Debt /Total Asset
Total risk based capital Ratio	RBCR	Basel Total Capital/Risk Based Capital
Tobin's Q	TQ	Market value of bank / Book Value of equity

Table (4) Dependent and independent variables

3.3 Definitions of the Ratios

3.3.1 Tier 1 ratio

It measures the Shareholder Funds Plus Perpetual Non-Cumulative Preference Shares as a percentage of Risk Weighted Assets and Off-balance Sheet Risks measured under the Basel rule. Bardastani, (2016), higher ratio means a stronger bank and indicate that the bank is taking proactive measure through. It's considered to be sound.

3.3.2 Capital to Liability & Equity

It's a ratio of Total Capital to Total Liabilities and Shareholders' Equity expressed in percentage. Total Capital consists of investment made by shareholders and debtholders of a company. While total capitalization of utilizes consist of short and long debt, common and preferred equity, additional paid-in capital, minority interest and retained earnings, higher ratio is better.

3.3.4 Equity to Total Asset:

It is the ratio that measures the Equity Capital as percentage of Total Assets that used to show proportion protection afforded by banks to its investment in asset, also it measures the overall stock absorbing capacity of a bank for potential loan asset losses. It's a percentage of Common Equity that applied to finance and support the assets of the company, it may have been considered as net worth to Total Asset Ratio in order to provide realistic picture of the Long-Term or prospective solvency position of the business, also measures bank's capital structure and adequacy. It indicates bank ability to withstand losses and manage risk exposure. A higher ratio indicates better performance.

3.3.4 Shareholders 'equity to Liability & Equity

It's a Shareholder Equity and Total Liability and Equity expressed in percentage, how much equity ownership in a percentage to debt outer and ownership. It is used for common size analysis to determine the financial health of a bank, higher is better.

3.3.5 Asset to Equity

It is also known as Equity Multiplier that used to measure the percentage of Total Equity to Total Assets in overall capacity of the bank which indicate financial leverage higher ratio point to a large percentage of asset financing attributes greater capacity for the bank from debt.

3.3.6 Short Term Borrowing to Liability & Equity

It's a Short-Term Debt to Total Asset (Liability & Equity), it measures the percentage of assets that financed in short period normally less than one year also used for common size analysis across the following indicator of industries, banks and insurance.

3.3.7 Long Term Borrowing to Liabilities &Equity

It's a Long-Term Debt to Total Asset (Liability & Equity), it measures the percentage of assets that financed in long period normally more than one year, high leveraged ratio indicator of financial risk faced by banks although banks use it to grow.

3.3.8 Reserves loan loss To Total Loan

It's the amount that is reserved for any expected loss expressed as percentage of total loan, this ratio would test the Asset Quality of the bank, a higher ratio reflects a poor loan portfolio. It is calculated as Non- Accrual Loans+ Renegotiated /Restructured Loan+ Other Real Estate owned (OREO)or Foreclosed Real Estate.

3.3.9 Non-performing Asset to Total Loan

It is the ratio that measures overall quality of the bank's loan book in percentage, in other word measures the default on the loan book value or on scheduled payments of principal or interest. It means debt is classified as nonperforming when loans payments have not been made for a period of 90 days, higher ratio is good indicator.

3.3.10 Return on Asset (ROA)

It's a Profitability indicator which is Net Income to Total Assets , are used to measure the ability of the bank to generate profit by using its assets it shows how good management in allocating assets is to net profit, it shows a bank can convert its assets in to net earnings, higher ratio indicates better performance of the banks.

3.3.11 Return on Common Equity (ROE)

It's a profitability determinant that is Net Income over Total Equity or Net Earnings per dollar Equity Capital, it shows the ability of the bank to generate profit from the capital that shareholders invested in (a percentages of shareholders' equity) in other word it shows a rate of return on the basis of capital. Higher ratio is better performance.

3.3.12 ROA to ROE

It's a Return on Assets as a percentage of Return on Equity. ROA is a Trailing 12 Net Income +Trailing 12-Month Policy Holders' Surplus /Average Total Assets *100 respect to T 12 Net Income Average for Common Shareholders /Average Total Common Equity *100, higher is better indicator.

3.3.13 Profit Margin

It is a measure of company's Profitability; this ratio is the comparison of how much of the revenue incurred during the period was retained in income. it measures the percentage of sales generated in earning, higher ratio is good indicator.

3.3.14 Return on Capital

It is a Profitability indicator that used to measure the return on an investment generated for capital contributors, bondholders and stockholders. Return on Capital referred to how effective a company is at turning capital into profits ROCE = Earnings Before Interest and Tax (EBIT) / Capital Employed, higher ratio better indicator.

3.3.15 Deposit to Asset

It is the ratio that tests liquidity of the bank by the percentage of Total Customers Deposit to Total Assets because customer deposit is a liability on the bank which must be paid to the customer.

3.3.16 Total Loan to Total Deposit

It's the ratio that used to assessing the bank's Liquidity, if the ratio is too high it means that the bank may not have enough liquidity to cover any unforeseen fund requirement. A higher ratio indicates that a bank takes more financial stress by increasing loan, and thus lower ratio is favorable to higher Loan Deposit ratio, however if the ratio is too low the bank may not be earning as much as it could be. And higher ratio indicates that the bank is using more of its deposits to lend which can expose it to liquidity risk.

3.3.17 Long Term Debt to Equity

Long-Term Debt consists of loans and financial obligations over one year. Long-term debt for a bank would include any financing or leasing obligations used to measure a company's financial leverage, by dividing a company's total liabilities by its stockholders' equity. LTD/E ratio indicates how much debt a company is using to finance its assets relative to the amount of value represented in shareholders' equity, lower is better indicator.

3.3.18 Loan to Asset

It's the ratio that measures the percentage of assets that tied up in loans, in other words, Total Loans over Total Assets, a liquidity ratio that indicate how much of bank assets are tied to loans. For banks, the higher LOANS ratio means less liquidity. Higher ratio means less liquid for the bank, higher ratio indicates that the banks are relying on loans to generate profit income

3.3.19 Net interest margin (NIM):

This ratio is used to measure the difference between interest income earned by lending or any other investment and interest expense that has been paid to depositors in Conventional banks divided by the Total Earning Assets, also it measures the ability of the bank to take a decision of long term investment. Since Islamic banks cannot accept interest, it is replaced with the profit that generated by Islamic contract such as Musharakah, Mudarabah, Murabaha, Salam, Istisnaa, Ijarah and other Non-Interest loans.

3.3.20 Efficiency ratio:

It's a cost to income ratio that used to measure the efficiency of the financial sectors by measuring the costs compared to revenue and it calculate as (Operating Expenses/((Net Interest Income+ Commission & Fees Earned + Other Operation Income (Losses)+ Trading Account Profits (Losses) +Gain /Loss on Investments /Loans +Other Income (Loss)-Commissions& Fee Paid)+ Taxable Equivalent Adjustment or Net Revenue -Net of Commissions Paid)*100

3.3.21 Operating margin:

It's a ratio used to measure a company's pricing strategy and operating efficiency in percentage, it's the Operating Income (loss) over Total Revenue *100. higher is better for the performance.

3.3.22 Asset Turnover:

It's amount of sales or revenue generated per dollar of asset that indicates the Efficiency with which the company is deploying its assets. It's a ratio that used to compute Trailing 12-month net sale /Total Asset -current period /total asset -prior year period /2

3.3.23 Debt Equity Ratio:

It's the ratio used to measure the relationship between the capital contributed by creditors and the capital contributed by shareholders. It also shows the extent to which shareholders' equity can fulfill a company's obligations to creditors in the event of a liquidation. It is a debt ratio used to measure a company's financial leverage, calculated by dividing a company's total liabilities by its stockholders' equity. The D/E ratio indicates how much debt a company is using to finance its assets relative to the amount of value represented in shareholders' equity.

3.3.24 Retained Earnings to asset

Retained Earnings refer to the percentage of net earnings not paid out as dividends, but retained by the company to be reinvested in its core business, or to pay debt. It is recorded under shareholders' equity on the balance sheet. It measures cumulative profitability over time as a proportion of total assets. In addition, this measures the leverage of a firm. High scoring firms have financed their assets through retention of profits rather than debt.

3.3.25 Debt to EBIT

Debt/EBIT is a measure of indebtedness of a company and shows the impact of debt on EBIT. It is calculated as a company's debt divided by its EBIT. The ratio means how many years it would take for a company to pay back its debt, if debt and EBIT are held constant.

3.3.26 Debt to Asset

The Debt to Assets Ratio indicates the proportion of a company's assets that are being financed with debt, rather than equity, also it indicates financial strength of a bank to pay its debtor. The ratio is used to determine the financial risk of a business. Higher ratio means too risky for the bank. A ratio greater than 1 shows that a considerable proportion of assets are being funded with debt, while a low ratio indicates that the bulk of asset funding is coming from equity.

3.3.27 Total risk-based capital Ratio

It is a measure of a bank's level of protection provided by Total Risked-Based capital and it is calculated as Total Risk-Based Capital divided by Risk-Weighted Assets.

3.5   **Methodology**

This part of the thesis in the most important part as it involves our contribution to the literature in terms of methodology. In order to compare the performance of Islamic and Conventional banks we suggest a method that consists of three sequential steps. The first step consists of filtering the chosen ratios based on their correlation with each other. The second involves Tobin Q method to select the accurate ratio that contributes to the bank's performance. Third, to implement Logit regression model and the selected accurate ratios, from the second step, in order to compare the performance of Islamic versus the Conventional Banks.

3.5.1   **Correlation analysis:**

This is the first important step of our methodology. It consists of calculating the correlation matrix for all chosen ratios:

$$\rho_{Ri,Rj} = \frac{Cov(Ratio_i, Ratio_j)}{\sigma_{Ratio_i} \sigma_{Ratio_j}} \qquad (1)$$

$\rho_{Ri,Rj}$ denotes the correlation between Ratio "i" and Ratio "j". Ratios i and j belong to the same category. We are computing such a correlation to choose only uncorrelated Ratios and remove the dependent ones. $Cov(Ratio_i, Ratio_j)$ is the covariance between the two Ratios and σ corresponds to the standard deviation.

3.5.2 Tobin Q regression:

Once the correlation step is done, we selected the independent ratios, which are not correlated with each other, we move to the current step that consists of running a second filtering process. This step consists of selecting the ratios that contributes to the bank performance. Not all the ratios filtered from the correlation step would be considered as indicator for performance. That's why we implement Tobin Q method.

Tobin Q is implemented in the literature as performance indicator (Mehrani et al. 2013), It consists of dividing the market value of the firm's outstanding of stocks and debt by the replacement cost of asset or the book value:

$$TQ_i = \frac{MV_i}{BV_i} \qquad (2)$$

Where TQ_i denotes the Tobin Q corresponding to bank "i" which could be Islamic or Conventional bank. MV_i represents the market value for bank "i" and BV_i is the book value for the same bank.

This methodological step, considered actually to regress the Tobin Qs on the selected Ratios for the correlation step:

$$TQ_{i,cat} = \alpha + \beta_{i,j,cat} \sum_{j=1}^{n} Ratio_j + \varepsilon_i \qquad (3)$$

$TQ_{i,cat}$ denotes the Tobin Q corresponding to the bank "i" and Ratio category "cat". We consider 6 categories: Capital Adequacy, Asset Quality, Profitability, Liquidity, Efficiency, Risk and Solvency. $Ratio_j$ includes the filtered ratio "j" from the correlation step.

The estimated result of the above equation will provide values for β. The ratio with statistically significant estimated beta will be selected as it contributes to the bank performance. However, ratios with non-statistically significant coefficients, betas will not be selected for the next step.

3.5.3 Logit regression:

This section presents the third step that consists of comparing the performance of Islamic to Conventional Banks. The selected ratios from the second step are considered in this last step for the sake of comparison. The comparison is made by using Logit Regression where the endogenous variable, *ISL*, is binary that takes the value of 1 in case of Islamic bank and 0 for Conventional banks:

$$ISL^* = \sum_{r=1}^{R} \gamma_r \, Ratio_r + \vartheta \qquad (4)$$

where ISL^* is unobservable variable and *Prob (ISL=1/Ratio_r)* is the conditional probability that the bank is Islamic.

If the coefficient of the Logit model γ_r >0, this indicates that increasing $Ratio_r$ increases the probability of a bank's type to be Islamic bank. On the other hand, if γ_r <0 this indicates that increasing $Ratio_r$ decreases the probability of a bank's type to be conventional bank. However, if γ_r =0 indicates that an observed increase in $Ratio_r$ has no effect on *Prob (ISL=1/Ratio_r)*.

Chapter 4: Empirical results and Discussion

Financial Institutions are very important for every economy because they are the most contributing factor to keep economies on the path of economic growth and development. Financial ratios are the indicator of financial health of organization. Ratio analysis is not only important for depositors but also for management to improve organization future performance. The purpose of the study is to provide full picture of banks financial position to investors, management and shareholders and make people aware of Islamic banks financial position also to make comparison of performance of Islamic and Conventional banks in order to identify, which one has, better financial position. This chapter includes empirical results and more precisely estimation results of all the equations presented in the methodology chapter also comments and discusses these empirical results.

4.1 Correlation results

The correlation analysis would disclose the relationship between the ratios themselves, also it used to test the multicollinearity problem whether independent variables are highly correlated with each other or not

There is higher correlation between Capital adequacy ratio, Tire 1 Ratio (TIER1), Capital to Liability & Equity(CTL&E), Total Equity to Total Asset (ETA) and Shareholders 'equity to Liability & Equity (SETL&E), so the study select only one variables Capital to Liability & Equity(CTL&E) as a measures of Capital adequacy performance.

CAPITAL ADEQUACY

	TIER1	CTL&E	SETL&E	ETA
TIER1	1			
CTL&E	0.865011	1		
SETL&E	0.963123	0.877083	1	
ETA	0.959364	0.870325	0.999081	1

Table (5.1) Correlation between capital adequacy variables

For the Asset Quality Ratio, the study found that there is a high correlation between Reserves for Loan Loss to Total Asset(RLLTL)and Non-Performing Asset to Total Loan(NPATL).

Also Asset to Equity (ATE) with Short Term Borrowing to Liability & Equity (STBTL&E) and thus, Long Term Borrowing to Liabilities &Equity LTBTL&E, Short Term Borrowing to Liability & Equity (STBTL&E) and Reserves for Loan Loss to Total Asset(RLLTL) were selected to be more appropriate indicator for Asset Quality performance.

ASSET QUALITY

	ATE	STBTL&E	LTBTL&E	RLLTL	NPATL
ATE	1				
STBTL&E	0.096028	1			
LTBTL&E	0.23266	0.004099	1		
RLLTL	0.30552	0.106899	-0.17425	1	
NPATL	0.228684	0.107318	-0.14259	0.940848	1

Table (5.2) Correlation between Asset Quality variables

The study eliminates Return on Equity ratio because it a correlation with the other variables in profitability performance.

PROFITABLILITY

	ROA	ROATROE	ROE	PM	ROC
ROA	1				
ROATROE	-0.12581	1			
ROE	0.830868	-0.54196	1		
PM	0.733366	-0.29054	0.646177	1	
ROC	0.663922	-0.33771	0.678366	0.294573	1

Table (5.3) Correlation between profitability variables

For the Liquidity performance, there is a correlation between Deposit to Asset and Loan to Deposit so the study deducts Asset and Loan to Deposit ratio (DTA) and keep the other variables

LIQUIDITY

	DTA	LTD	LTDTE	LTA
DTA	1			
LTD	-0.82068	1		
LTDTE	0.059126	-0.01092	1	
LTA	0.072664	0.449843	0.173461	1

Table (5.4) Correlation between liquidity variables

For efficiency performance, the study found a correlation between Efficiency ratio (ER) and operating margin (OM) so the study chose net interest margin (NIM), Asset Turnover (AT) and Efficiency ratio (ER) as more accurate indicators.

EFFICIENCY

	ER	OM	AT	NIM
ER	1			
OM	-0.84905	1		
AT	0.273981	-0.36929	1	
NIM	0.073062	-0.1368	0.691082	1

Table (5.5) Correlation between efficiency variables

In risk and solvency ratios, two ratios are correlated with other two ratios Total Debt to Total Equity (DER) with Total Debt to total asset (DBTA) also Total Debt to EBIT (DBTEBIT) with Total risk based capital ratio (RBCR) and thus, Total Debt to total Equity DER, Total risk based capital ratio RBCR and Retained Earning to asset (RETA) have been chosen.

RISK&SOLVENCY

	DER	RETA	DBTEBIT	DBTA	RBCR
DER	1				
RETA	0.044808	1			
DBTEBIT	0.026239	-0.21097	1		
DBTA	0.929246	0.063656	0.226757	1	
RBCR	-0.29227	-0.23965	0.803068	-0.03347	1

Table (5.6) Correlation between risk and solvency variables

Here are the actual variables after eliminating the correlated ratios

Ratio	Indicators	Definition
Capital Adequacy:		
Capital to Liability & Equity	CTL&E	Total Capital /Total Liability & Equity
Asset Quality:		
Short Term Borrowing to Liability & Equity	STBTL&E	Shor term Borrowing / Total Liability & Equity
Long Term Borrowing to Liabilities &Equity	LTBTL&E	Long Term Borrowing / Total Liabilities &Equity
Reserves loan loss To Total Loan	RLLTL	Reserves from Loan Loss/Total Loan
Profitability:		
Return on Asset	ROA	Net income/ Total Asset
ROA to ROE	ROATROE	(Net income/ Total Asset)/ (Net income/ Equity)
Profit Margin	PM	Net income/Operating Income
Return on Capital	ROC	Net income/ Total Capital
Liquidity:		
Loan to Deposit	LTD	Total Loan /Total Deposit
Long Term Debt to Equity	LTDTE	Long Term Debt /Total Equity
Loan to Asset	LTA	Total Loan /Total Asset
Efficiency:		
Efficiency Ratio	ER	(Op Exp/((Net Int Inc+ Commission & Fees Earned + Other Oper Inc + Tra Acc Profit +Gain /Loss on Inv /Loans +Other Inc -Commissions& Fee Paid)+ Tax Equivalent Adjustment or Net Revenue -Net of Commissions Paied)*100
Asset Turnover	AT	Interest Income/Average Total Assets
Net Interest Margin	NIM	Interest Income - Interest Expense / Total Earning Assets
Risk and solvency:		

Debt Equity Ratio	DER	Total Debt/Total Equity
Retained Earning to asset	RETA	Retained Earnings /Total asset
Debt to EBIT	DBTEBIT	Total Debt / EBIT
Total risk based capital Ratio	RBCR	Basel Total Capital/Risk Based Capital
Tobin's Q	TQ	Market value of bank / Book Value of equity

Table (6) The variables that are not correlated

4.2 Tobin Q Regression Estimation results:

This section related to the output of regression analysis which are applied on financial ratios on both IBs and CBs, in order to explain the relationship between dependent variable Tobin Q and the independent variables the ratios for both banks and determined the significant variables and select the variables for final model that would use in Logit model after eliminating the variables that had highly correlation with other variables the study considered the significant up to 10% level respectively in the regression.

From the data that showed in Appendix, the value of Tobin Q is higher and more than 1 for all types of the banks and that indicate to the banking sector in Saudi Arabia are overvalued and outperforming in general.

We conduct regression analysis by using E views software program to estimate our equation. These are the ratios that shows a significantly degree with Tobin Q ratio:

4.2.1   Capital adequacy

$Q = \beta_{\circ} + \beta 1(CTL\&E) + \varepsilon i$

$Q = -7.79 - 0.3201\ CTL\&E + \varepsilon i$

Ratios	Coefficient	p-value
Capital to Liability & Equity	-0.3201	0.0030
R-squared	0.1024	
Adjusted R-squared	0.0915	

Table (7.1) Model of Capital Adequacy

To assess the significance of independent variable on the dependent variable Tobin's Q and it shows significant affected with Tobin's Q as their p-value are less than 10%.

4.2.2 Asset quality

$Q = \beta_\circ + \beta1(STBTL\&E) + \beta2(LTBL\&E) + \varepsilon i$

$Q = -1.25 - 0.173\ STBTL\&E\ -0.295\ LTBL\&E$

Ratios	Coefficient	p-value
Short Term Borrowing to Liability & Equity	-0.1732	0.0974
Long Term Borrowing to Liabilities &Equity	-0.2955	0.0058
Reserves loan loss To Total Loan	0.1655	0.1186
R-squared	0.1570	
Adjusted R-squared	0.1253	

Table (7.2) Model of Asset quality

The study found that two ratios are significant with Tobin Q Measurement Long Term Borrowing to Liabilities &Equity and Short Term Borrowing to Liability & Equity because they are less than 10% and the study chose what have been selected by the previous studies.

4.2.3 Profitability

$Q = \beta_\circ + \beta 1(ROATROE) + \beta 2(ROA) + \beta 3(PM) + \varepsilon i$

$Q = -1.62 - 0.264\ ROATROE + 1.072\ ROA - 0.730\ PM + \varepsilon i$

Ratios	Coefficient	p-value
Return on Asset	1.0720	0.0000
ROA to ROE	-0.2649	0.0017
Profit Margin	-0.7301	0.0000
Return on Capital	0.0426	0.7093
R-squared	0.6500	
Adjusted R-squared	0.6323	

Table (7.3) Estimating result for Tobin Q corresponding to profitability factor.

To display the significance of variables on Tobin's Q, Profit Margin, Return on Asset and ROA TO ROE found to be significant

4.2.4 Liquidity

$$Q = \beta_{\circ} + \beta1(LTDTE) + \beta2(LTD) + \varepsilon i$$

$$Q = -1.05 - 0.316\ LTDTE - 0.307\ LTD + \varepsilon i$$

Ratios	Coefficient	p-value
Loan to Deposit	-0.3071	0.0090
Long Term Debt to Equity	-0.3168	0.0031
Loan to Asset	0.0764	0.5128
R-squared	0.1690	
Adjusted R-squared	0.1378	

Table (7.4) Estimating result for Tobin Q corresponding to liquidity factor.

Two variables are significant with Tobin Q Long Term Debt to Equity and Loan to Deposit.

4.2.5 Efficiency

$$Q = \beta_{\circ} + \beta1(ER) + \beta2(NIM) + \beta3(AT) + \varepsilon i$$

$$Q = -1.55 - 0.287\ ER + 0.394\ NIM + 0.408\ AT + \varepsilon i$$

Ratios	Coefficient	p-value
Efficiency Ratio	-0.2878	0.0002
Asset Turnover	0.4084	0.0004
Net Interest Margin	0.3944	0.0005
R-squared	0.5970	
Adjusted R-squared	0.5819	

Table (7.5) Estimating result for Tobin Q corresponding to Efficiency factor

Table (7.5) point to all the variables efficiency factors are significant with Tobin Q for both banks Islamic and conventional.

4.2.6 Risk and Solvency

$Q = \beta_{\circ} + \beta_1(DTE) + \varepsilon_i$

$Q = -1.17 - 0.226\ DTE + \varepsilon_i$

Ratios	Coefficient	p-value
Debt Equity Ratio	-0.2265	0.0492
Retained Earning to asset	0.03818	0.7334
Total risk based capital Ratio	-0.1617	0.1695
R-squared	0.0597	
Adjusted R-squared	0.0244	

Table (7.6) Estimating result for Tobin Q corresponding to risk and solvency factor.

The Debt to equity ratio is the only ratio that has a significant effect with Tobin Q

Where: $\beta_{\circ}$ is the Constant for each model.

    β is the Coefficient of the regression equation. εi is an Error Term

The final ratios that would employed for the study are:

1) Capital to Liability & Equity (CTL&E) – Capital Adequacy.

2) Long Term Borrowing to Liabilities &Equity(LTBL&E) - Asset Quality.

3) Return on Asset (ROA)– Profitability.

4) Loan to Deposit(LTD) – Liquidity.

5) Net Interest Margin(NIM) -Efficiency.

6) Debt Equity Ratio (DER)– Risk and Solvency.

4.3 Descriptive statistics: Tobin Q's selected aggregated ratios (Islamic and conventional):

A set of brief descriptive coefficients that precise a given data set that can either be a representation of the entire population or the sample. The measures used to describe the data set are mean, median, standard deviation that summarized and interpret some of the properties of a set of data or to the sample. As the essential job in various statistical analyses is to illustrate the location and variability of a data set, that is done by measuring skewness and kurtosis.

Ratios	IB Mean	CB Mean	IB SD	CB SD	IB Max	CB Max	IB Min	CB Min
Capital to Liability & Equity	19.882	21.078	7.466	3.53	49.851	29.877	12.654	14.277
Long Term Borrowing to Liabilities &Equity	0.440	1.986	0.898	1.622	3.025	5.646	0	0
Return on Asset	1.840	1.90	0.903	0.344	3.808	2.378	0.091	0.844
Loan to Deposit	82.246	81.445	6.097	8.317	92.417	93.302	63.650	57.442
Net Interest Margin	3.385	2.735	0.792	0.319	5.648	3.454	2.413	1.975
Debt Equity Ratio	14.956	50.817	7.028	24.161	27.596	115.36	0.182	17.757
Tobin Q	1.118	1.062	0.121	0.052	1.509	1.192	0.947	0.974

Table (8.1) Descriptive Statistical for both banks

Table (8.1) Analysis the descriptive Statistical for IBs & CBs to specify the main characteristic for both, the study found IBs has lower average value of mean than conventional banks in terms of Capital to Liability & Equity (CTL&E), Long Term Borrowing to Liabilities &Equity(LTBL&E), Return on Asset (ROA) but not much and Debt Equity Ratio (DER), while a higher value found in Tobin Q Ratio, Loan to Deposit(LTD), Net Interest Margin(NIM).

As for standard deviation, the study found that IBs are higher in Capital to Liability & Equity (CTL&E), Return on Asset (ROA), Net Interest Margin(NIM) and Tobin Q Ratio. A lower value point in Long Term Borrowing to Liabilities &Equity(LTBL&E), Loan to Deposit(LTD) and Debt Equity Ratio (DER) than CB.

The maximization value for IBs was found in Capital to Liability & Equity (CTL&E) , Return on Asset (ROA), Net Interest Margin(NIM) and the rest was higher for CBs Long Term Borrowing to Liabilities &Equity(LTBL&E), Loan to Deposit(LTD) and Debt Equity Ratio (DER).

The minimization value for CBs that result in Capital to Liability & Equity (CTL&E), Return on Asset (ROA) and Debt Equity Ratio (DER) are higher than IBs. Not much different between both banks respect in to Tobin Q Ratio and the minimum value for Long Term Borrowing to Liabilities &Equity(LTBL&E) is zero for both banks.

4.3.1 Descriptive statistics: Tobin Q's selected Islamic banks' ratios

	LT_BORR...	RETURN_...	T12_NET_I...	TOBIN_Q_R...	TOT_CAP_...	TOT_DEBT...	TOT_LOAN...
Mean	0.440246	1.840932	3.385379	1.118139	19.88233	14.95674	82.24661
Median	0.000000	1.676100	3.347700	1.093000	18.17645	14.92955	83.14587
Maximum	3.025500	3.808400	5.648500	1.509500	49.85110	27.59680	92.41780
Minimum	0.000000	0.091800	2.413600	0.947100	12.65410	0.182000	63.65080
Std. Dev.	0.898231	0.903642	0.792890	0.121711	7.466171	7.028781	6.097074
Skewness	1.728853	0.473837	0.971262	1.274207	2.680748	-0.246369	-0.938823
Kurtosis	4.535205	2.856398	3.822161	5.030439	10.80759	2.624128	4.443962
Jarque-Bera	16.69802	1.071824	5.190905	12.38661	104.6547	0.448083	6.545676
Probability	0.000237	0.585135	0.074612	0.002043	0.000000	0.799282	0.037899
Sum	12.32690	51.54610	94.79060	31.30790	556.7053	418.7888	2302.905
Sum Sq. Dev.	21.78412	22.04734	16.97422	0.399966	1505.080	1333.902	1003.706
Observations	28	28	28	28	28	28	28

Table (8.2) Descriptive Statistical for Islamic banks

Table (8.2) shows the descriptive Statistical for Islamic banks were mean values providing the answers of ratios in a positive and the median values are also showing the positive results.

In most of the ratios, standard deviation shows small values for the first 4ratio Long Term Borrowing to Liabilities &Equity(LTBL&E), Return on Asset (ROA), Net Interest Margin(NIM) and Tobin Q Ratio while the rest is high. These small standard deviations shows the values in a statistical data sample are close to the mean of the data sample averagely, However, Capital to Liability & Equity (CTL&E), Loan to Deposit(LTD), Debt Equity Ratio (DER) shows the large values of standard deviation, It means that the values in the statistical data sample are far away from the mean an averagely. The result shows that the value of skewness for some ratios within the range of (-1: +1) and some are more than 1 but not much up to 2.6 It means that the values are normality Loan to Deposit(LTD), Debt Equity Ratio (DER) are showing the negative skewed results in the table. The values of kurtosis in the table indicate that ratios are positively skewed and all are leptokurtic with higher than normal kurtosis (0-3).

4.3.2 Descriptive statistics: Tobin Q's selected conventional banks' ratios

	LT_BORR...	RETURN_...	T12_NET_I...	TOBIN_Q_R...	TOT_CAP_...	TOT_DEBT...	TOT_LOAN...
Mean	1.986384	1.900754	2.735750	1.062246	21.07860	50.81743	81.44513
Median	2.042500	1.984850	2.723800	1.049350	20.26350	45.36325	83.18205
Maximum	5.646200	2.378500	3.454700	1.192000	29.87790	115.3662	93.30220
Minimum	0.000000	0.844800	1.975500	0.974600	14.27750	17.75740	57.44200
Std. Dev.	1.622244	0.344815	0.319629	0.052029	3.537454	24.16122	8.317775
Skewness	0.196790	-1.000337	-0.000552	0.780371	0.424731	0.747932	-1.366169
Kurtosis	1.841944	3.789923	2.875684	2.919788	2.592558	2.828691	4.190401
Jarque-Bera	3.490662	10.79558	0.036064	5.698819	2.071052	5.289566	20.72636
Probability	0.174587	0.004527	0.982130	0.057878	0.355039	0.071021	0.000032
Sum	111.2375	106.4422	153.2020	59.48580	1180.401	2845.776	4560.927
Sum Sq. Dev.	144.7421	6.539374	5.618949	0.148883	688.2468	32107.06	3805.196
Observations	56	56	56	56	56	56	56

Table (8.3) Descriptive Statistical for conventional banks

Table (8.3) shows that the descriptive statistics of the CBs that used in the sample of the study. All values of ratios in the mean and median providing the results in a positive manner, none of them are negative.

Standard deviation shows the averagely small statistical data sample of the CBs except Debt Equity Ratio (DER). The values of the skewness are within the range of (- 1: +1) that means the values are normality. Return on Asset (ROA) Loan to Deposit(LTD), Net Interest Margin(NIM) are showing the negative skewed results in the table. The values of kurtosis in the table indicate that ratios are positively skewed and all are leptokurtic than with normal kurtosis (0-3).

4.4 Estimating results for Logit regression model

We present in this section the binary response probability model used in the modeling and classification of Islamic Banking performance the Logit model by presents the estimation results for equation (4) corresponding to performance analysis between IBs & CBs. We consider only Tobin Q Ratios which are statically significant in Logit model.

Ratios	Coefficient	p-value
Capital to Liability & Equity (CTL&E)	**-0.177**	**0.0224**
Long Term Borrowing to Liabilities &Equity (LTBL&E)	**-0.582**	**0.0970**
Return on Asset (ROA)	**-3.010**	**0.0020**
Loan to Deposit(LTD)	**0.0996**	**0.0632**
Net Interest Margin(NIM)	**4.351**	**0.0014**
Debt Equity Ratio (DER)	0.00013	0.9939
R- squared	0.4862	

Table (9) Estimating result for Logit model at 10%.

Based on the estimation results provided with the Table above, we can notice that an increase on Net Interest Margin and Loan to Deposit performance ratios increase the probability that the bank is Islamic rather than conventional. However, A decrease on Capital to Liability & Equity, Long Term Borrowing to Liabilities, and/or Return on Asset increase the probability that the bank is Islamic rather than conventional as well.

The positive coefficient for Net Interest Margin (4.351) shows that IBs are more efficient that CBs. In addition, the positive significant coefficient for Loan to Deposit (0.0996) means that the IBs are more liquid that conventional ones. The reason of Choosing net interest margin for this study, it is the theory that set in the earlier studies as evidence for efficiency factor, also it is the most variables that gives more significant with other ratios for testing the performance.

Nevertheless, the negative coefficient of Capital to Liability & Equity (-0.177) means that IBs are less risky than CBs, Because the capital factor in this ratio refers to the long-term lending to the bank customers. The more this ratio is high the higher is the risk for the bank. Consequently, IBs are more efficient than CBs in terms of capital adequacy.

The coefficient of Long Term Borrowing to Liabilities & Equity is negative as well (-0.582). It means that CBs are much riskier that IBs, because a rise in such a ratio increases the default risk of the bank and consequently the total risk of that financial institution. Therefore, IBs could be considered as more efficient that CBs in terms of asset quality.

Nevertheless, the Coefficient of the Return to Equity ratio is also negative (-3.010) this means that ROA ratio increase the probability that the bank is conventional rather than Islamic. In addition, the negative sign of such a ratio coefficient reflects that CBs are more profitable than IBs.

Furthermore, while the Coefficient of Debt Equity Ratio is positive, this latter is not significant. This means that this ratio has no effect on the performance of either banks.

Overall, four ratios out of five (80%) significant ratios classify the Saudi IBs exhibit higher performance than that of CBs. However, only one ratio out of 5 (20) classifies the CBs as more profitable that the IBs in terms of ROA.

In addition, the Coefficient of determination, R^2 (49%), is relatively high enough to rely on the estimation results reported in the Table above.

The result supporting this study that has been conducted by Massah & Al-sayed (2015) and Milhem& Istaiteyeh (2015), they proved that IBs are less profitability than CBs in respect with ROA.

Although a study related to Bus & Ben. (2016) found that IBs are more profitability than CBs based on ratio ROE while this study found it less profitability ROA because ROE is correlated with the other variables and eliminated and less perform in term of efficiency factor, the study conclude same result for Islamic banks better than conventional banks.

In term of Liquidity Ratio which is Total Loan to Total Deposit, a higher ratio for IBs means the bank is using more of its deposits to lend which can expose it to liquidity risk also the bank may not have enough liquidity to cover any unforeseen fund requirement. Because the bank may take more financial stress by increasing loan and cannot rely on borrowing money from central bank or any other sources which line with the result that been conduct by Milhem& Istaiteyeh (2015) that Islamic banks are more liquid.

In term of Capital Adequacy, the study agreed with what they have been proved by the paper related to Bardastani (2016) and disproved the popular concept that CBs perform better than IBs. and argues the research of Amba & Almukharreq (2013) conducted in GCC region that IBs does not have better Capital Adequacy respect with different terms of ratio than CBs.

There is difference in profitability between IBs and CBs in terms of NIM. NIM is referred for IBs as Net Income Margin such as, fees from foreign exchanges, from profit loss and share PLS from financing activities, service charges and etc, Faizulayev (2011).

As for risk and solvency, the p- value for the ratio Total Debt to Total Equity $0.99 > 0.10$ which is not significant with IBs and this finding it not supporting with the previous research done by Bus, Review& Mbarek, (2016) in the KSA. Milhem& Istaiteyeh (2015), found that Islamic banks are less risky because IBs do not trade and built their transaction on debt they based on shariah contract financing such as (Musharahah , Murabaha ,Mudaraba, Salam, Istisnaa etc..)

Chapter 5: Finding summary

To our knowledge few studies have been dedicated for the comparison of CBs and IBs in KSA. In this study, we intend to perform the comparison and shade some light on the differences of financial performance between IBs and CBs based on CAPLERS factors which include (Capital Adequacy, Asset Quality, Profitability, Liquidity, efficiency, risk and solvency). To summarize, there are some ratios indicate that there are differences between the performance of both types of banks, this part would be answering the of previous question that been state to this research. In order to compare the performance of IBs and CBs by suggesting the three sequential steps, filtering the chosen ratios based on correlation and then select the accurate ratio that contributes to the bank performance based on Tobin Q method, finally, implement Logit regression model.

Empirical results showed that,

1) Islamic banks are more Efficiency than conventional banks.

2) Islamic banks are more Liquidity than conventional banks.

3) Conventional banks are more Profitability than Islamic banks.

4) Islamic banks are less risky in term of Capital adequacy than Islamic banks.

5) Islamic banks are more efficient in terms of Asset quality than conventional banks.

So, we reject the null hypothesis for efficiency, capital adequacy, liquidity, and Asset quality and accept the alternative that Islamic banks are better performing than conventional banks. For the profitability, the study accepts the null hypothesis and reject the alternatives hypothesis that conventional banks are more performance than Islamic banks.

Chapter 6: Conclusion

This study investigates the performance of IBs versus CBs. Using a sample period post-global Financial Crisis, eight conventional and four Islamic banks, and implementing a three-step methodology including Tobin Q and Logit regression models. In order to see how IBs performed in comparison with CBs over 7 years during post-financial crisis period 2010-2016 with 84 observations of 12 banks, the study evaluates bank performance in term of six main category ratios comes under CAPLERS form which are C referred to capital adequacy, A referred to Asset Quality, P referred to profitability, L referred to liquidity, E referred to efficiency, R referred to risk and S solvency that adapted from CAMELS Ratio of the performance analysis. We find that IBs outperform CBs. The performance of IBs are shown in terms of Capital Adequacy, Asset Quality, Efficiency and Liquidity. However, CBs outperform IBs in terms of Profitability. The result would be adding a new interpretation about the performance of Islamic banks to earlier finding that IBs are better performing than CBs.

6.1 Suggestions and Recommendations

The tools of analysis are helpful in making business decisions, evaluating performance and forecasting future developments. This study will serve as a starting point for further future studies because IBs similar system as CBs and applying same policy under different rule and principle, therefore, Islamic Banks need to create their own standardized rules in the field of accounting, monetary tools and etc., Also they should establish Islamic economic system under which they will operate wholly as an Islamic Bank.

There should be one body governor who will monitor and control all of the Islamic banks around the world and obligate them to follow the standards set up by central Islamic bank.

6.2 Implementation

Investors would find our results useful to assess the performance of Islamic versus conventional banks in making their investment decisions. Policy makers and more specifically, central bankers would benefit of our findings as it provides a new methodology to compare Islamic and conventional banks in terms of performance.

6.3 Limitation

The numbers of pure Islamic banks in Saudi Arabia was limited and small. Only four among 12 local banks are considered as pure Islamic banks while the remainders are 8 conventional banks also the sample period for seven years. Furthermore, the initial subjective choice of ratios considered for the study could be considered as a limit.

6.4 Future research

For a future research, potential related studies could be conducted by considering the whole set of Islamic and conventional banks in GCC or even in MENA countries. By increasing number of banks, macroeconomic variables and countries we will have more accurate evaluation measures on performance.

Chapter 7: Appendix: Tables

Estimating result for Tobin Q corresponding to Capital Adequacy ratios

Dependent Variable: TOBIN_Q_RATIO_TOBIN_Q_RA
Method: Least Squares
Date: 05/08/17   Time: 14:38
Sample: 1 84
Included observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.79E-16	0.103996	-7.49E-15	1.0000
TOT_CAP_TO_LIAB_AND_EQY_	-0.320122	0.104620	-3.059850	0.0030

R-squared	0.102478	Mean dependent var	-1.12E-15
Adjusted R-squared	0.091533	S.D. dependent var	1.000000
S.E. of regression	0.953135	Akaike info criterion	2.765402
Sum squared resid	74.49431	Schwarz criterion	2.823279
Log likelihood	-114.1469	Hannan-Quinn criter.	2.788668
F-statistic	9.362683	Durbin-Watson stat	1.277153
Prob(F-statistic)	0.002992		

Estimating result for Tobin Q corresponding to Asset Quality ratios

Dependent Variable: TOBIN_Q_RATIO_TOBIN_Q_RA
Method: Least Squares
Date: 05/08/17   Time: 14:45
Sample: 1 84
Included observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.25E-15	0.102039	-1.23E-14	1.0000
LT_BORROW_TO_TOT_LIAB_AN	-0.295509	0.104336	-2.832278	0.0058
RSRV_FOR_LOAN_LOSS_TO_TO	0.165503	0.104908	1.577596	0.1186
ST_BORROW_TO_TOT_LIAB_AN	-0.173216	0.103264	-1.677416	0.0974

R-squared	0.157001	Mean dependent var	-1.12E-15
Adjusted R-squared	0.125389	S.D. dependent var	1.000000
S.E. of regression	0.935206	Akaike info criterion	2.750349
Sum squared resid	69.96889	Schwarz criterion	2.866102
Log likelihood	-111.5147	Hannan-Quinn criter.	2.796881
F-statistic	4.966441	Durbin-Watson stat	1.307800
Prob(F-statistic)	0.003271		

Estimating result for Tobin Q corresponding to profitability ratios

Dependent Variable: TOBIN_Q_RATIO_QQ
Method: Least Squares
Date: 05/08/17   Time: 14:47
Sample: 1 84
Included observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.62E-15	0.066155	-2.46E-14	1.0000
PROF_MARGIN_M	-0.730116	0.115145	-6.340867	0.0000
RETURN_ON_ASSET_J	1.072033	0.149918	7.150784	0.0000
RETURN_ON_CAP_N	0.042662	0.114018	0.374167	0.7093
ROA_TO_ROE_K	-0.264932	0.081380	-3.255481	0.0017

R-squared	0.650093	Mean dependent var		-1.12E-15
Adjusted R-squared	0.632376	S.D. dependent var		1.000000
S.E. of regression	0.606320	Akaike info criterion		1.894862
Sum squared resid	29.04231	Schwarz criterion		2.039553
Log likelihood	-74.58419	Hannan-Quinn criter.		1.953026
F-statistic	36.69351	Durbin-Watson stat		1.471131
Prob(F-statistic)	0.000000			

Estimating result for Tobin Q corresponding to liquidity ratios

Dependent Variable: TOBIN_Q_RATIO_TOBIN_Q_RA
Method: Least Squares
Date: 05/08/17   Time: 14:49
Sample: 1 84
Included observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.05E-15	0.101309	-1.03E-14	1.0000
LT_DEBT_TO_TOT_EQY_Q	-0.316809	0.103828	-3.051292	0.0031
TOT_LOAN_TO_TOT_ASSET_R	0.076419	0.116244	0.657400	0.5128
TOT_LOAN_TO_TOT_DPST_P	-0.307194	0.114670	-2.678952	0.0090

R-squared	0.169032	Mean dependent var		-1.12E-15
Adjusted R-squared	0.137871	S.D. dependent var		1.000000
S.E. of regression	0.928509	Akaike info criterion		2.735975
Sum squared resid	68.97031	Schwarz criterion		2.851728
Log likelihood	-110.9109	Hannan-Quinn criter.		2.782506
F-statistic	5.424435	Durbin-Watson stat		1.449034
Prob(F-statistic)	0.001901			

Estimating result for Tobin Q corresponding to Efficiency ratios

Dependent Variable: TOBIN_Q_RATIO_TOBIN_Q_RA
Method: Least Squares
Date: 05/08/17   Time: 14:50
Sample: 1 84
Included observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.55E-15	0.070546	-2.20E-14	1.0000
ASSET_TURNOVER_U	0.408456	0.110794	3.686638	0.0004
EFF_RATIO_S	-0.287852	0.074540	-3.861711	0.0002
T12_NET_INT_MARGIN_V	0.394415	0.108502	3.635102	0.0005

R-squared	0.597066	Mean dependent var	-1.12E-15
Adjusted R-squared	0.581956	S.D. dependent var	1.000000
S.E. of regression	0.646563	Akaike info criterion	2.012156
Sum squared resid	33.44350	Schwarz criterion	2.127909
Log likelihood	-80.51054	Hannan-Quinn criter.	2.058688
F-statistic	39.51461	Durbin-Watson stat	1.164443
Prob(F-statistic)	0.000000		

Estimating result for Tobin Q corresponding to risk and solvency ratios

Dependent Variable: TOBIN_Q_RATIO_TOBIN_Q_RA
Method: Least Squares
Date: 05/08/17   Time: 14:51
Sample: 1 84
Included observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.17E-15	0.107767	-1.08E-14	1.0000
BS_TOT_CAP_TO_RISK_BASE_	-0.161763	0.116693	-1.386223	0.1695
RETAIN_EARN_TO_TOT_ASSET	0.038185	0.111710	0.341823	0.7334
TOT_DEBT_TO_TOT_EQY_W	-0.226514	0.113407	-1.997358	0.0492

R-squared	0.059701	Mean dependent var	-1.12E-15
Adjusted R-squared	0.024439	S.D. dependent var	1.000000
S.E. of regression	0.987705	Akaike info criterion	2.859582
Sum squared resid	78.04485	Schwarz criterion	2.975335
Log likelihood	-116.1024	Hannan-Quinn criter.	2.906114
F-statistic	1.693096	Durbin-Watson stat	1.183340
Prob(F-statistic)	0.175121		

CAPLERS Factors for Islamic banks

Dependent Variable: TOBIN_Q_RATIO_QQ
Method: Least Squares
Date: 05/10/17   Time: 11:17
Sample: 1 28
Included observations: 28

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.933517	0.221930	4.206364	0.0004
LT_BORROW_TO_TOT_LIAB_AN	-0.022784	0.018990	-1.199751	0.2436
RETURN_ON_ASSET_K	0.045518	0.025044	1.817496	0.0834
T12_NET_INT_MARGIN_Y	0.067946	0.029042	2.339571	0.0293
TOT_CAP_TO_LIAB_AND_EQY_	-0.006068	0.002139	-2.836817	0.0099
TOT_DEBT_TO_TOT_EQY_Z	0.003329	0.002154	1.545944	0.1371
TOT_LOAN_TO_TOT_DPST_R	-0.000588	0.002650	-0.221729	0.8267

R-squared	0.755712	Mean dependent var		1.118139
Adjusted R-squared	0.685916	S.D. dependent var		0.121711
S.E. of regression	0.068211	Akaike info criterion		-2.320113
Sum squared resid	0.097707	Schwarz criterion		-1.987062
Log likelihood	39.48158	Hannan-Quinn criter.		-2.218296
F-statistic	10.82737	Durbin-Watson stat		1.418548
Prob(F-statistic)	0.000016			

CAPLERS Factors for Conventional banks

Dependent Variable: TOBIN_Q_RATIO_QQ
Method: Least Squares
Date: 05/09/17   Time: 08:46
Sample: 1 56
Included observations: 56

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.168709	0.085708	13.63588	0.0000
LT_BORROW_TO_TOT_LIAB_AN	0.005226	0.002941	1.777002	0.0818
RETURN_ON_ASSET_K	0.030921	0.012047	2.566617	0.0134
T12_NET_INT_MARGIN_Y	0.052086	0.013787	3.778030	0.0004
TOT_CAP_TO_LIAB_AND_EQY_	-0.007411	0.001360	-5.448450	0.0000
TOT_DEBT_TO_TOT_EQY_Z	0.000972	0.000226	4.308157	0.0001
TOT_LOAN_TO_TOT_DPST_R	-0.002594	0.000657	-3.949769	0.0003

R-squared	0.763973	Mean dependent var	1.062246
Adjusted R-squared	0.735072	S.D. dependent var	0.052029
S.E. of regression	0.026780	Akaike info criterion	-4.285877
Sum squared resid	0.035140	Schwarz criterion	-4.032708
Log likelihood	127.0046	Hannan-Quinn criter.	-4.187724
F-statistic	26.43389	Durbin-Watson stat	2.021511
Prob(F-statistic)	0.000000		

Logit model

Dependent Variable: BANKS
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)
Date: 05/10/17   Time: 16:01
Sample: 1 84
Included observations: 84
Convergence achieved after 6 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-12.05074	6.028035	-1.999116	0.0456
LT_BORROW_TO_TOT_LIAB_AN	-0.582215	0.350822	-1.659574	0.0970
RETURN_ON_ASSET	-3.010542	0.972513	-3.095631	0.0020
T12_NET_INT_MARGIN	4.351476	1.361242	3.196696	0.0014
TOT_CAP_TO_LIAB_AND_EQY	-0.177370	0.077687	-2.283132	0.0224
TOT_DEBT_TO_TOT_EQY	0.000137	0.017894	0.007628	0.9939
TOT_LOAN_TO_TOT_DPST	0.099692	0.053662	1.857774	0.0632

McFadden R-squared	0.486245	Mean dependent var		0.333333
S.D. dependent var	0.474236	S.E. of regression		0.341993
Akaike info criterion	0.820692	Sum squared resid		9.005881
Schwarz criterion	1.023260	Log likelihood		-27.46905
Hannan-Quinn criter.	0.902122	Deviance		54.93811
Restr. deviance	106.9344	Restr. log likelihood		-53.46719
LR statistic	51.99627	Avg. log likelihood		-0.327013
Prob(LR statistic)	0.000000			

Obs with Dep=0	56	Total obs	84
Obs with Dep=1	28		

Data for Islamic Banks

TOT_CAP_TO_LIAB_AND_EQY	LT_BORROW_TO_TOT_LIAB_AND_EQY	RETURN_ON_ASSET	TOT_LOAN_TO_TOT_DPST	T12_NET_INT_MARGIN	TOT_DEBT_TO_TOT_EQY	TOBIN_Q_RATIO
B	H	K	R	Y	Z	QQ
19.3312	0	3.8084	86.7044	5.6485	17.8581	1.5095
18.0432	0	3.6377	83.2322	5.0322	21.3911	1.3235
14.475	0	3.2301	80.0063	4.4089	6.1283	1.2283
15.056	0	2.7183	82.6589	4.0248	9.4544	1.2537
14.3093	0	2.3269	82.4495	3.8138	5.0965	1.1355
16.2212	0	2.2877	84.2966	3.6116	9.7734	1.1204
17.9163	0	2.48	84.9716	3.8764	17.1656	1.1489
67.0244	0	1.2581	187.5478	3.821	14.4298	1.0049
49.8511	0	1.3596	142.8096	3.932	15.3698	0.9471
35.3215	0	1.6149	116.3112	3.769	14.4893	1.0483
27.0355	0	1.7173	105.8216	3.6004	1.1926	1.0876
22.2254	0	1.7578	91.3641	3.2583	0.182	1.1564
23.2358	0	1.7336	87.4568	2.9394	12.3346	1.0429
20.6343	0	1.5531	88.3954	2.891	12.6799	1.0327
12.6541	0	0.4792	76.3202	3.6596	12.3246	1.1308
13.8423	0	1.3497	63.6508	3.5135	12.348	1.0889
16.5952	0	3.2756	81.5011	3.4371	13.06	1.1383
16.7289	0	2.2062	83.5199	3.2222	19.1264	1.245
15.6586	0	2.1189	79.4591	2.841	20.2164	1.2642
15.353	0	1.6349	83.2605	2.6928	22.0677	1.1145
22.8797	0	1.5393	92.4178	2.9616	68.4303	1.0934
15.7319	0	0.0918	72.5126	2.4606	8.0887	1.0127
18.6195	2.5708	0.8422	78.6876	2.4136	46.7053	1.0091
18.3097	1.9692	1.1162	76.8883	2.4348	85.5182	1.0555
18.4861	1.6673	1.1749	74.1562	2.5594	93.5445	1.0926
16.3695	1.5025	0.9049	76.7521	2.6136	76.9152	1.0745
19.7232	1.5916	1.983	85.9807	2.7263	68.3114	0.9853
20.5899	3.0255	1.3458	83.049	2.6272	68.5082	0.9634

Data source Bloomberg

Data for conventional banks

TOT_CAP_TO_LIAB_AND_EQY	LT_BORROW_TO_TOT_LIAB_AND_EQY	RETURN_ON_ASSET	TOT_LOAN_TO_TOT_DPST	T12_NET_INT_MARGIN	TOT_DEBT_TO_TOT_EQY	TOBIN_Q_RATIO
B	H	K	R	Y	Z	QQ
16.7114	0	1.7501	57.442	3.4547	43.6188	1.192
18.4347	0	2.0603	59.0109	3.2914	56.0335	1.173
18.8168	0	1.9962	62.3457	3.1504	64.9022	1.165
18.23	0.4006	2.1733	64.048	3.2009	61.6968	1.154
21.1372	2.1961	2.1314	67.8048	3.1227	95.9061	1.1482
25.318	2.2157	2.0575	79.818	3.1395	104.4935	1.1197
26.12	2.2464	2.0934	82.2262	3.3901	92.4343	1.0729
25.2264	1.0003	2.3785	62.9072	3.1221	84.6598	1.1584
25.3591	0	2.2637	67.4285	2.8484	73.0015	1.0716
21.9328	0	2.2093	72.5477	2.7558	37.6721	1.0431
20.6811	0	2.2313	73.5028	2.7253	21.3946	1.0497
22.2159	0	2.3696	77.3816	2.5266	24.1188	1.0347
25.3173	0	2.3031	76.8425	2.3411	47.5652	1.0272
23.1812	0	2.1438	73.8663	2.7552	25.4337	1.026
20.3364	4.3676	1.4933	81.188	2.9944	68.0495	1.1201
19.6245	2.8694	2.188	82.3024	2.7649	58.5138	1.0963
19.5616	2.9661	2.1945	81.7974	2.6651	52.7186	1.0628
18.0453	3.0413	2.2601	77.9882	2.6534	40.126	1.1194
18.9223	2.8478	2.3381	80.6355	2.6253	36.1653	1.1721
18.4124	2.4287	2.3074	86.2621	2.5183	22.6972	1.0477
21.9965	3.3472	2.0838	88.0651	2.8476	30.8411	1.0334
20.4756	3.9716	2.2979	88.1751	2.9131	39.9859	1.1162
18.4714	3.0108	2.2078	85.3591	2.8006	32.0184	1.0768
23.6141	5.6462	2.0218	90.2795	2.6114	64.2259	1.0247
20.0019	4.1928	1.4676	86.2646	2.3617	46.5097	1.049
20.9061	4.837	1.9599	81.806	2.4311	49.0891	1.0597
19.4606	3.6538	2.1672	88.7342	2.4261	30.0906	1.0341
20.0137	3.3064	1.8134	83.5945	2.4255	37.0876	1.0081
24.0518	1.0796	1.6143	85.3304	2.8836	42.7947	1.0615
20.1232	0	1.7771	82.2266	2.8464	20.6972	1.0265
20.0475	0	1.8681	82.0796	2.9272	19.2813	1.0133
22.1433	1.9489	1.9964	86.8945	2.8755	34.1833	1.0484

20.1906	1.864	2.0734	82.5679	3.0224	21.9202	1.0719
21.9671	3.5874	1.8495	87.5562	2.7014	34.2344	1.0032
25.1027	3.6846	1.5161	92.8541	2.6971	44.622	0.9856
25.1485	1.4543	1.6887	81.2335	3.1846	89.5277	1.0794
23.1696	1.4353	1.8588	85.8749	3.1188	62.8348	1.0574
19.1358	1.235	1.8655	82.7696	3.0079	45.9945	1.0339
20.6741	1.2234	1.8374	85.0877	2.8857	48.6156	1.0515
19.034	1.0248	1.9002	81.8553	2.7796	51.8569	1.0601
17.7822	1.1736	1.7693	86.8962	2.5888	33.903	1.0097
17.5295	1.1871	1.6766	86.9925	2.7223	24.565	0.9933
17.1558	0	1.3991	87.0043	2.6688	44.732	1.0619
15.7689	0	1.858	86.105	2.6091	21.747	1.0428
14.2775	0	1.9936	86.0259	2.5139	17.7574	1.0358
14.7831	0	2.0159	88.6376	2.4645	26.5308	1.0893
18.3157	4.0365	2.0565	86.5728	2.4761	64.7432	1.1089
15.9934	3.6088	1.9761	87.2645	2.4862	43.7082	1.0413
17.246	3.7212	0.9991	87.7418	2.5616	40.8748	1.0292
26.2907	0.971	0.8448	88.6182	2.8214	66.2789	1.0349
27.4931	2.8876	1.3682	79.8458	2.5267	66.8923	1.0063
29.8779	3.386	1.6431	86.2759	2.5465	88.1672	1.0098
27.4314	2.4846	1.8441	84.6208	2.2896	115.3662	1.0687
20.1377	2.1361	1.65	82.4152	2.0572	59.0787	1.0396
22.8436	4.2863	1.4195	86.6546	2.1009	77.599	0.9911
28.1624	4.2756	1.1205	93.3022	1.9755	96.2202	0.9746

Data Source Bloomberg

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