FACTORS INFLUENCE THE STABILITY OF ISLAMIC AND CONVENTIONAL BANKS IN GCC COUNTRIES

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Abstract— This study examines the factors that affect banks' stability in GCC Countries and investigates the stability of Islamic and Conventional banks for two periods 2006 to 2010 and 2011 to 2015. It covers 18 banks. There are several independent variables such as Liquidity, Cost efficiency, Income diversity, Total asset, GDP growth rate, and CPI while Z-score is used as dependent variable. Regression analysis was used to test the relationship between dependent and independent variables. Findings from the study show that there is a relationship between all independent variables and z-score and most importantly For the period of 2006 to 2010, the study concluded that all factors (Liquidity, Cost efficiency, Total asset, GDP growth rate, and CPI) have a positive relationship with z-score, but income diversity have negative relationship with the z- score and the period of 2010 to 2015, all factors (Liquidity, Cost efficiency, Total asset, and GDP growth rate) have a positive relationship with z-score, but income diversity and CPI have negative relationship with the z- score. The paper also found that Conventional banks are more stable in 2006 to 2010 and 2011 to 2015.

Keywords— "Stability, Islamic banks, Conventional banks, Z-score, GCC Countries"

I. INTRODUCTION

Banks are considered as the main source of credit (loanable funds) for millions of investors and individuals. Moreover, most of financial transactions are being implemented through banks. For example, when consumers want to make a payment for purchasing something, most probably they will use bank checks, credit card, debit card, telegraphic Transfer (TT) or online payments through electronic accounts. Thus, currently banks are playing a very significant role all over the world. Governments and central banks regulate and control the performance of banks in most countries.

According to Alimshan Faizulayev (2011), conventional banks contribute to the expansion of financial crises. Banks may assist the financial crises through the activities implemented on the financial markets that can impact the interest rates, the uncertainty on the market and the asset price. The financial crisis increases the demand of thinking of another alternative financial system. It is obvious that conventional banks and Islamic banks are different. Islamic banks are constrained by Islamic law (Sharia) which means they perform their activities based on Sharia, conventional banks accept deposits and provide transactional and savings accounts.

Conventional banks are based on providing loans on a predetermined interest rate. If the borrower takes longer time to pay, he/she will have to pay more. There are many types of loans such as Adjustable Rate Mortgages (ARM) where the banks can raise the interest rate during payment period. Sub-prime is also another type of loan, it is given to people who do not meet the prime requirements for a loan. Banks also can resell loans in order to get more cash to lend.

Islamic banks are always managed and guided by principles of Islamic religious law "sharia". Sharia forbids any payment and collection of interest (known as riba), whether it is fixed or floating payment. It also forbids any investment in unethical activities that conflict with Islamic principles (e.g. pork or alcohol).

"During the past 40 years Islamic financial institutions have grown into fully fledged realities as the number of Islamic banks has reached around 300 in over 75 countries. And in recent years the Islamic banking services have become attractive, not only to Muslims all over the world but also to non-Muslims who started to realize the unique features of Islamic finance. Nevertheless, many people suffer from awful losses as a result of taking high risks (Timewell & DiVanna 2008).

According to (El Qorchi 2005) the number of Islamic banks has reached approximately 300 in over 75countries in 2005 since the establishment of Dubai Islamic Bank UAE in 1975 (the first Islamic bank in the world).

With such a large number of Muslims around the world, the need for "Shariah" compliance in the financial dealings and transactions becomes a pressing concern. Countries like Malaysia, UAE, Saudi Arabia and Indonesia are adopting the use of Islamic financial instruments in their financial dealings.

The banking stability is considered as the basis of controlling the whole financial system as banks contribute to the process of creating money, in conducting transactions, and in providing funds of investment. Furthermore, central banks have an interest in monitoring banking system stability in order to maintain monetary and financial stability.

Previous studies have shown that bank stability has been influenced by liquidity. In addition, cost efficiency, bank size and income diversity are also factors that contribute to determine financial stability. So this study is to examine stability factors (bank size, liquidity, cost efficiency, income diversity, in addition to GDP growth rate and CPI) of banks that function in the same market.

The 2008 crisis increased an interest of people in the direction of Islamic banking as a new option (Kassim Hussein, 2010).

According to Hussein A. Hassan Al-Tamimi, (2010) as a result of the financial crisis 2008, there was a high demand for Islamic banking services in Gulf Cooperation Council (GCC) Countries in general and especially in United Arab Emirates since three UAE conventional national banks were motivated to change to Islamic banks and to provide Islamic banking facilities including foreign banks such as: Citibank and HSBC. This high demand of Islamic banking services in GCC is the main incentive to conduct this study in order to investigate the factors affecting Islamic banks' stability compared with that of the conventional banks in GCC.

Today banks take part and play a significant role in our society, and we even cannot imagine what our life look like without banks, in fact banks have become a blood vein of our economy. In order to stimulate the economy of any particular country the government does this via banking system by using "Monetary or physical Tools". Furthermore, all of the business and financial transactions that we involved in our normal life are done through the banks. However, it is very important to know that we get advantages from conventional banking system, but witnessing, financial and economic crisis has been occurred mostly due to Conventional Banking System that means banks have both advantages and disadvantages. For instance, the financial crises happening frequently have started since existence of Capitalistic system in which the interest rate and speculative transactions are allowed and that is one of the reason view years ago 2008 crises also has accrued.

Islamic banking system is not like convention banks were interest is the key of their profit, M. Kabir Hassan,2003 the web page, it was mentioned that "The steady expansion of Islamic banks has been the hallmark of the Muslim world financial landscape in the 1980s and 1990s. With a network that spans more than 60 countries and an asset base of more than $166 billion; Islamic banks are now playing an increasingly significant role in their respective economies. In this respect, Islamic banks are rapidly gaining market shares in their domestic economies.

Altaee H, Talo I, Adam M, (2013) conducted a study of Testing the financial stability of banks in GCC countries: Pre and post financial crisis highlighted in their research that 22 observations revealed negative (net income from Islamic financing), this means Islamic banks pay out to their depositor even though there is no enough income from the Islamic finance, on the other hand, Islamic banks share any losses with their deposers, and that is what Islamic sharia encouraging (profit and loss sharing), However, this argument is beyond the objective of this paper and it should be addressed in future studies. This Gap is also another encouragement for me to conduct this study.

The purpose of conducting such a study in this field is to determine and examine the factors that affect banks' stability in Gulf Cooperation Council (GCC) Countries and to investigate the stability of Islamic and Conventional Banks in Gulf Cooperation Council (GCC) Countries

II. **Literature review**

Many researches have been conducted on the performance and stability of Islamic banking in the last two decades. In fact, the size of literature on Islamic banking has been considerably enhanced but many issues are still required to be settled. For example, shortage of relevant data needed to conduct such a research on Islamic banking. This chapter will review several of the previous Islamic and conventional banking researches and summarized conclusion made regarding to stability and performance of both banking streams. All previous studies reviewed in this chapter compared Islamic banks with Conventional banks.

2.2 Background of the GCC

Gulf Cooperation council (GCC) is a six Arab countries

1) Saudi Arabia or Kingdom of Saudi Arabia (KSA)
2) UAE or United Arab Emirates, or
3) Qatar,
4) Oman or Sultanate of Oman
5) Bahrain or Kingdom of Bahrain
6) Kuwait

Those countries in located Middle East and was founded in1981 with the reason of harmonizing policies of various political, social matters, and economic, among its member states in order to have similar regulations. GCC countries are different and independent governments with each have its own currency. The GCC region total population is estimated to be approximately 34 million, which provides it third the population of the Arab world and all have same religion which is Islam. Besides that, those countries are wealthy in the natural resource oil, which is very important commodity around the world. Oil was discovered in the 1940's for many of the GCC countries in the aftermath of World War II. The GCC depends heavily on oil exports and Have the world's largest oil reserves,

According to Venardos (2010) financial stability refers to the situation where financial institutions operate easily within the economy. The Swiss National Bank (SNB) defines stability as "A system where the different elements fulfil their duties.

Several researchers state that the last financial crisis that happened in 2008 could have been avoided by adopting the Islamic banking system.(Karwowski, 2009; Ariff , 2007) said in their studies that Islamic banking offers Muslim and non-Muslim with different environment to create stable situation in the financial system.

According to a study conducted by Khan (2012) that examined the underlying rationale of the profit and loss sharing system, lending process of Islamic banking is based on the profit and loss sharing system (PLS) which is derived from the Islamic sharia'a teachings. This means the two parties the bank and the borrower would decide to share profits and losses under Mudharaba partnership contract. Thus, the notion of the profit and loss sharing system does not practice the pre-determined rate of return on the asset, and therefore, lending process is different in both banking streams.

It may seem that Islamic banks have more risk or negative returns because Islamic banking is performing based on profit and loss sharing system but according to a research conducted by Shaikh.Salman & Jalbani Ali, (2009) on the risk management procedures of Islamic banking. The study found that Islamic banks have higher risk. The study analyzed 2 conventional banks and 2 Islamic banks to test the comparative performance of banks based on Return on Equity (ROE).

In order to get a full and clear picture on both banking system in GCC Countries, the following part will discuss some of the previous studies conducted in this area in terms of performance, efficiency and stability.

Hassan and Dridi (2010) studied the effects of the 2007 global financial crisis on the Islamic and conventional banks for a period of 2008-2009. The study examined the impacts in countries which practice the two styles of banks. The whole sample was 120 banks from different countries Bahrain, Kuwait, Jordan, UAE, Saudi Arabia, Qatar, Malaysia, and Turkey. 75% of the sample sizes were conventional banks and only 25% were Islamic banks. The study concluded that banks were affected differently during the crisis. Furthermore, in terms of profitability, Islamic banks faced a considerable drop in profitability during the period of crisis. In contrast, Islamic banks appeared to have higher improvement in terms of assets and loans.

Related to the competitive circumstances that happen in the global market of Islamic and conventional banking, Turk-Ariss (2010) executed a study on the possibility of differences in profitability in both banking systems, using a sample of the banking industry in 13 countries for the period of 2000-2006. With different tools of measurement of comparison, the results indicate that Islamic banking is less competitive.

Parashar and Venkatesh (2010) in their research, they conducted a comparison on the performance of a total of 12 of banks in GCC countries for the period of financial crisis 2006-2009. The final result showed that Islamic banks are more profitable than Conventional ones as measured by higher average return on total assets and equity.

In terms of efficiency, Olson and Zoubi (2008) have conducted a study to compare the efficiency of Conventional and Islamic banks. The study covered six years from 2000-2005 and it involved 26 financial ratios to compare the banks in GCC countries. The study concluded that Islamic banks have higher efficiency and more risk.

Another study showed the same result has been done by Johnes et al (2008). The study investigated Islamic and conventional banks in GCC countries for four years 2006 to 2010.The study showed that Islamic banks have less efficiency.

Ali (2012) conducted a study to measure the efficiency of Islamic banks during financial crisis. The study covered four years from 2006 to 2009. The study concluded that the Islamic banks have high efficiency during the crisis.

According to Alkassim (2005), the performance of Islamic banks is dependent upon higher capital ratio in Gulf Corporation Council countries (GCC). Meanwhile, for conventional banks, deposits have direct relations. The study also used the Ordinary Least Square (OLS) to test the effect of a bank's internal factors on the profitability of banks from 1997 to 2004. The final results showed that Islamic banks were more profitable.

A study has been done by Kassim Hussein (2010) examined the behavior of bank-level stability factors and consumer confidence through some factors. The study covered a period of 2000-2007, with a sample of 194 banks of GCC. The study found that the bank's product does not support the. However, there is a positive relationship between non-operating assets and liquidity. Therefore, Islamic banks attempt to take strict risk policies than conventional banks. Furthermore, Consumer confidence levels largely appeared to be greater in Islamic banks.

Another study focused on Bank Competition and Financial Stability done by Allen N. Berger, Leora F. Klapper, Rima Turk-Ariss , (2008) found that a high degree of bank competition works against market power, and leads to low franchise. A test of these theories has been conducted using regressing methods using internal and external factors and data for 8,235 banks from 23 countries. This study showed that banks with a higher degree of market power tend to have less risk exposure.

.Talking about the stability of Islamic and conventional banks, Cihak and Hesse (2008) have examined the stability of 20 banking institutions for the period of 1993-2004 in 20 countries; Yemen, Bangladesh, Gambia, Brunei, Egypt, Jordan, Indonesia, Iran, Malaysia, Kuwait, Saudi Arabia, Mauritania, Pakistan, Qatar, United Arab Emirates, Sudan, Tunisia, Lebanon, West Bank and Gaza, and Bahrain; with a sample of 77 Islamic banks and 397 conventional banks for 12 years 1993 to 2004. In this study, Z-score is used as an evaluating tool for stability of banks. The findings of this study indicated that Z-score for small Islamic banks is high while for small conventional banks is low, thus, small Islamic banks have higher stability compared to small conventional banks. On the other hand, large conventional banks appear to be more stable than large Islamic banks since Z-score for large conventional banks is greater than that of Islam banks 19.50 >12.90.

According to (Beck, Demirgüç-Kunt, Merrouche, 2010) who have done a research to compare a big number of banks in terms of their efficiency business model, and stability. Two samples were used large and small. The large sample involved 141 countries. The large sample covered countries in three ways. Countries have only conventional, countries have only Islamic and finally countries have both conventional and Islamic banks. The results proved that Islamic banks functioning in nations with a higher market share of Islamic banks are more stable. However, Imam and Kpodar (2010) concluded that Islamic banking is just an integral system to the existing conventional banking.

A study conducted by Siti Rohaya Mat Rahim, Roza Hazli Zakaria, (2013) examined stability between Islamic and conventional banks from two dimensions, individual bank level and country level in Malaysia. The period of analysis was from year 2005 to 2010. Loan asset ratio, cost income ratio, total assets, income diversity, Herfindahl Index, market share, inflation rate and real GDP has been set as the major factors affect risk (probability to defaults) for banks. Meanwhile, Z-score and NPL were identified as measures of bank's stability. The results of this research illustrated that Islamic banks achieved higher z-score due to higher return and that means Islamic banks have less risk and that can be noticed during the crisis period 2006- 2007 as Islamic banks have higher stability and. On the other hand, conventional banks have higher NPL, which means conventional banks are more risky and this can clarify why conventional banks were less stable in the period of the crisis.

Another research has the same conclusion was done by Boumediene and Caby (2009). It examined and compared the financial stability of banking system during the subprime crisis in 2007. The study has examined 14 Islamic banks and 14 conventional banks in the Middle East, Europe and Central Asia, which were evaluated with the E-GARCH and GJR-GARCH time series simulations at the time before and after the subprime crisis. The results of this study presented that during the crisis period, Islamic banks have low return volatility in comparison with Conventional banks, and that helped Islamic banks to be more stable.

A study has been conducted by Gamaginta and Rofikoh Rokhim(2010) covered Indonesia banks from 2004 to 2009. Two indicators, Z-score and t-test, were used to investigate the stability. The study found that there is significant difference between stability of banks. The sample covered 71 conventional banks and 12 Islamic banks. The study indicates that the conventional banks generally have a higher degree of stability.

According to Sole (2007), it is essential to understand the Islamic banking from the standpoint of financial stability because of two reasons. First, the growth of Islamic banks allows them to interact with conventional banks and as a result they will become technically relevant. Second, the scarcity of Islamic products for hedging purposes in a small number of institutions.

According to Imam and Kpodar (2010), Islamic banks appear to have low stability when functioning at big scale. Under specific circumstances, the improving Islamic banking industry may not be advantageous for economic development since it may reduce financial stability.

Kristo and Gruda (2010) examined the interrelationships among bank competition, efficiency and stability in Albania. The study covered five years from 2005 to 2009. It measured different components that affect banks' stability. One factor that has been used is z-score. The results of the study showed that the greater the competition, the better the efficiency, but the worse the stability.

One of the clear studies has been done by Islam. M, Kozokov. S, (2009) to empirically examine the stability of banks and to test which banking stream is more stable. The study covered a period of 4 years from 2005 to 2008. It included accounting data from 8 countries for 26 Islamic banks and 40 Conventional banks with total of 66 banks. It conducted the quantitative analysis by using two dependent stability (risk) proxies (z-score and Non-Performing Loans/Assets), four bank level control variables, and three country level control variables. The results showed that there are no significant differences in stability between the two streams of banks for 2005-2008. It found also the same result for the financial crisis proxy year (2008).

According to Altaee H, Talo I, Adam M, (2011) the financial stability of banks for the periods 2003-2010, 2003-2007, and 2008-2010 is not significantly different. Nevertheless, Islamic banks are financially weaker for the period 2003-2007. The study used z-score as a dependent variable. Macroeconomic variables such as bank size, liquidity, cost efficiency, and income diversity were used to test their effects on banks' stability. Furthermore, microeconomic variable such as inflation rate, Gross domestic product growth rate, and governance were used to measure their relationship with z-score. The study covered all banks in GCC.

According to Borio and Drehmann (2009), the measurement of banks' stability is significant important in investigating the financial system stability.

All previous studies concluded that (loan/asset, cost/income, income diversity, total assets, GDP growth rate, and CPI) have relationship with z-score. In addition, some found that Islamic banks are more stable while few of them found the opposite.

III. DATA ANALYSIS

4.1 INTRODUCTION

In this chapter, the analysis will be divided into two parts based on the period. First part will cover the period of 2006 to 2010 for both Islamic and Conventional banks in GCC Countries and will include descriptive analysis, correlation matrix, and regression analysis

Second part will cover the period of 2011 to 2015 for both streams of banks in GCC Countries and will include descriptive analysis, correlation matrix, and regression analysis

4.2 ANALYSIS FOR THE PERIOD 2006 TO 2010:

Table 4-1:
Descriptive statistics 2006 to 2010

Variables	Obs	Mean	Std. Dev.	Min	Max
Z-SCORE	72	18.64417	10.80592	0	56.85
Loan/asset	70	59.07286	12.64497	26.9	87.1
Cost/income	69	37.78855	21.46612	9.77	160
Income diversity	69	67.55942	18.47052	11.7	96.7
Total asset	70	11053.47	10608.81	125.47	39303.27
GDP	72	8.177778	4.719132	1.3	26.2
CPI	72	5.805	3.677555	.36	13.76

This part will focus on the period of 2006 – 2010 for both Islamic and Conventional banks in GCC Countries. It includes the descriptive analysis in order to check the mean, standard deviation, minimum and maximum value of each variable.

The number of observation in this part is 69 observations. Table (4.1) shows that the mean of the Z-score is equal to 18.64417% with Minimum value 0%, Maximum value 56.85%, and its Standard Deviation is 10.80592%.

Loan/asset and income diversity have a very high mean with 59.07286% and 67.55942% respectively. Meanwhile, GDP growth rate and CPI tend to have a very low mean with 8.177778% and 5.805% respectively.

Cost income has a mean value of 37.78855% which is considered quite high and finally the total asset appeared to have a mean of USD 11053.47.

Table 4-2:
Frequency table

BNAK	Freq.	Percent	Cum.
Islamic Bank	36	50.00	50.00
Commercial Bank	36	50.00	100.00
Total	72	100.00	

The Frequency table shows the number of observations for both Islamic and Conventional Banks during 2006 to 2010. There are 36 observations for each bank stream.

Table 4-3:

Correlation matrix- 2006 to 2010

Variables	Z-SCORE	Loan/asset	Cost/income	Income diversity	Total asset	GDP	CPI	BNAK
Z-SCORE	1.0000							
Loan/asset	0.2779	1.0000						
Cost/income	0.0829	0.1639	1.0000					
Income diversity	-0.0199	-0.1679	0.1290	1.0000				
Total asset	0.0769	0.0817	-0.3067	0.0139	1.0000			
GDP	0.2188	-0.0882	-0.1634	-0.2196	0.0028	1.0000		
CPI	0.1113	-0.0739	-0.3549	0.0487	0.0022	0.2496	1.0000	
BNAK	0.3018	-0.0442	-0.1758	0.2739	0.1794	-0.0348	0.0051	1.0000

Correlation matrix is used to show the strength relationship between two variables. The table above demonstrates the correlation matrix among the variables under this study. All the independent variables are correlated with dependent variables (Z-score).

We can see all the factors have a positive correlation with z-score except for income diversity which has a negative correlation (-0.0199).

Ordinary least square: Dependent variable is Z-score 2006 to 2010

Table 4-4:
Ordinary least square 2006 to 2010

Variables	Coef.	T	P-value
Loan/asset	.2290771	2.42	0.019
Cost/income	.1076229	1.68	0.098
Income Diversity	-.032509	-0.47	0.643
Total asset	.0000553	0.47	0.637
GDP	.5296246	2.08	0.042
CPI	.4304228	1.23	0.222
BANK	7.663827	3.12	0.003
_cons	-7.58796	-0.88	0.382
F-statistics	3.40		0.0040
Adj R-squared	0.1978		
Number of observations	69		

Table 4-5:
Robust regression 2006 to 2010

Variables	Coef.	T	P-value
Loan/asset	.1258882	1.77	0.081
Cost/income	.137233	2.85	0.006
Income Diversity	-.0656364	-1.26	0.214
Total asset	.0001793	2.05	0.045
GDP	.3386172	1.77	0.082
CPI	.4020054	1.54	0.130
BANK	6.10842	3.32	0.002
_cons	-1.018184	-0.16	0.875
F-statistics	4.16		0.0008
Number of observations	69		

For the period of 2006 to 2010, the robust regression is being used in order to fix the outliers and of course the robust regression will generate a different result from ordinary least square. The robust table is used to

test each hypothesis in the regression model, this can be done through looking at the t-statistic for each independent variables in the model, and P-value (significant level, 1%, 5%, and 10%). Thus, if the T-value for specific variables is high and its P-value below predetermined of the significant level, it can conclude that such factor has statistically significant relation with dependent variable. The Kinds of relation between the independent variables and dependent variable can be seen by sign of coefficients (either negative or positive).

From table (4.6) all factors have a positive relationship with z-score except for income diversity. Only two factors are insignificant which are income diversity and CPI.

If all ratios of these factors are high (Loan/asset, Cost/income, Total asset, GDP, and CPI) that means the banks have higher stability.

If the bank has a high liquidity ratio, that means the bank is more stable and if the cost efficiency ratio of a bank is high, then the bank is more stable. Banks with big total assets are more stable. High GDP growth rate and CPI rate contribute positively to banks' stability.

Comparing both streams of banks, the dummy variable was given a value of one for Conventional Banks and zero for Islamic Banks. The coefficient of the bank is positive and statistically significant, since the reference group in the dummy variable is small one (value zero) thus the estimated coefficient is for the Conventional Bank. Islamic banks are less stable since the coefficient (6.10842) is positive and T-value 3.32 and P-value is 0.002.

Null hypothesis for dummy variables states that in the population there is no difference between two group (in this case are Conventional Bank=1 and Islamic Bank =0) in the average value of the dependent variables (z-score) thus, the average value of the z-score is high for Conventional Bank than Islamic Bank. The Null hypothesis is rejected and H1 is accepted.

Table 4-6:
Diagnosis of the multicollinearity 2006 to 2010

Variable	VIF	1/VIF
Cost/income	1.44	0.693170
Income Diversity	1.26	0.791490
CPI	1.25	0.797396
Total asset	1.17	0.857123
BANK	1.16	0.859051
GDP	1.15	0.870595
Loan/asset	1.11	0.901925
Mean VIF	1.22	

$$\text{Tolerance} = \frac{1}{\text{VIF}}$$

Another test under the ordinary least square (OLS) regression model is Tolerance and Variance Inflation Factor (VIF) , The purpose of conducting this test is to uncover on the existence of multicollinearity(i.e. the association among the independent variables). In the regression model, the multicollinearity means that predictor (independent) variable is not independent from other independent variables. Multicollinearity is not serious, if VIF < 5, tolerance > 20%

In this study , all values of VIF test are less than five and the tolerance are above %20 , therefore, the multicollinearity does not exist.

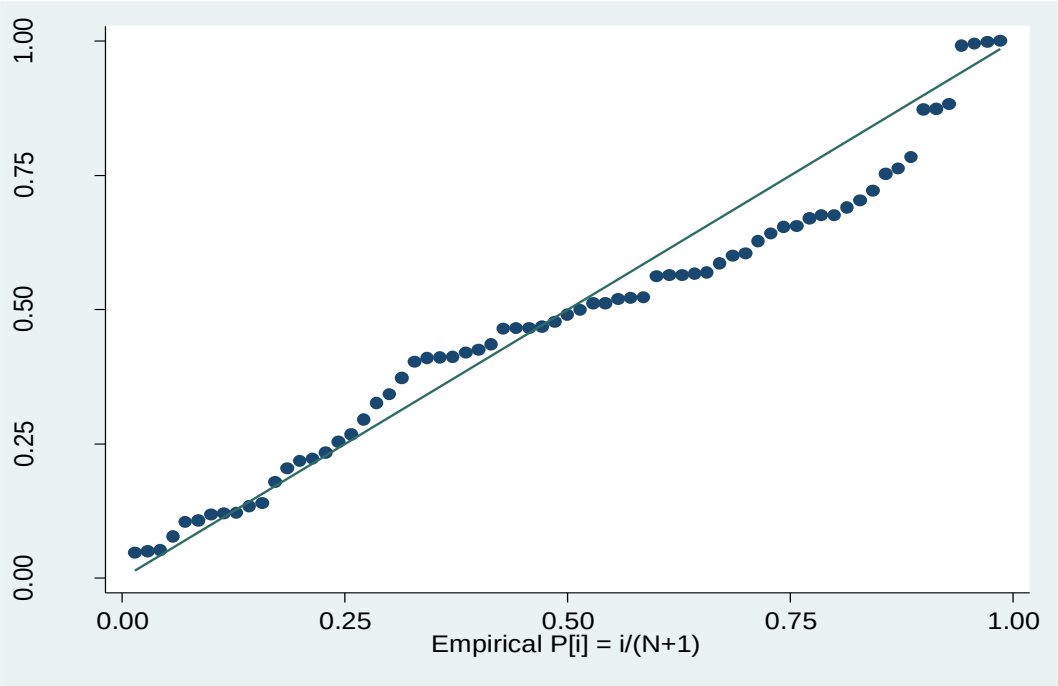

Figure 4.1: Residual is normally distributed 2006 to 2010

The figure (4.1) used to find if the residual is normally distributed. If most of points are on the line that means the residua is normally distributed. In this case for 2006 to 2010, most of the points are not touching line. So, the residual is not normally distributed.

Analysis for the period 2011 to 2015:

This part will focus on the period of 2011 to 2015 for both Islamic and Conventional banks in GCC Countries. It includes the descriptive analysis in order to check the mean, standard deviation of each variable.

The number of observation in this part is 180 observations.

Table 4-7:

Descriptive statistic 2011 to 2015

Variable	Obs	Mean	Std. Dev.	Min	Max
Z-SCORE	108	16.73593	9.675843	1.18	46.47
Loan/asset	108	60.85926	9.261285	6.1	79.9
Cost/income	108	41.66361	16.9509	16.01	103.3
Income diversity	108	61.73241	32.30733	-5.3	311.4
Total asset	108	24570.31	23981.84	280.92	121816.9
GDP growth rate	108	4.353148	4.787782	-7.1	17.7
CPI	108	3.479074	4.001557	-4.87	15.05

The above table reflects that the mean of the Z-score to be 16.73593% with Minimum value 1.18%, Maximum value 46.47%, and its Std. Deviation is 9.675843%. Loan/asset and income diversity have a very high mean with 60.8% and 61.7% respectively. Meanwhile, GDP growth rate and CPI tend to have a very low mean with 4.35% and 3.48% respectively. Cost income has a mean value of 41.7% which is considered quite high and finally the total asset has a mean of USD24570.31.

Table 4-8:

Frequency table 2011 to 2015:

BNAK	Freq.	Percent	Cum.
Islamic Bank	54	50.00	50.00
Conventional Bank	54	50.00	100.00
Total	108	100.00	

Table (4.9) shows that Islamic Banks have 54 observations and Conventional banks also have 54 observations in the sample of this study.

Table 4-9:

Correlation matrix 2011 to 2015

Variables	ZSCORE	Loan/asset	Cost/income	Income diversity	Total asset	GDP	CPI	BNAK
Z-SCORE	1.0000							
Loan/asset	0.1878	1.0000						
Cost/income	0.1430	-0.0224	1.0000					
Income diversity	-0.0667	-0.0368	0.0693	1.0000				
Total asset	0.3274	0.0425	-0.4537	-0.0101	1.0000			
GDP	0.2421	-0.1400	-0.1807	0.0099	0.1139	1.0000		
CPI	-0.0080	0.0768	-0.0731	0.1625	0.0179	0.0956	1.0000	
BNAK	0.3881	0.3560	-0.2278	-0.0425	0.2095	-0.0099	-0.0063	1.0000

As mentioned before the correlation matrix will be used here also. All of the independent variables are correlated with dependent variables (Z-score).

From the correlation table, we can note that Loan/asset, Cost/income, Total asset, and GDP with the values (0.1878, 0.1430, 0.3274, and 0.2421) respectively have positive correlation with z-score. On the other hand, Income diversity and CPI show a negative correlation with z-score through their values (-0.0667, -0.0080) respectively.

Table 4-10:

Ordinary least square 2011 to 2015

Variables	Coef.	T	P-value
Loan/asset	.1045638	1.08	0.281
Cost/income	.0589592	1.05	0.294
Income diversity	-.0155942	-0.60	0.548
Total asset	.0001109	2.86	0.005 *
GDP growth rate	.5046069	2.85	0.005 *
CPI	-.0639388	-0.30	0.762
BNAK	6.136144	3.39	0.001
_cons	1.112371	0.17	0.867
F-statistics	5.60		0.0000
Adj R-squared	0.2315		
Number of observations	108		

***/**/* for 1/5/10 percent confidence level

Testing hypotheses

The table above (4.11) used to test each hypothesis in the regression model, this can be done through the t-statistic for each independent variables in the model, and P-value (significant level, 1%, 5%, and 10%).

(Loan/asset, cost/income, total asset, and GDP growth rate) have a positive relationship with z-score. On the other hand, income diversity and CPI have a negative relationship. Only two factors are significant which are the total asset and the GDP growth rate. The more loans provided by banks, the more stable the banks become. If the total asset of a bank is large and the GDP growth rate is high, the banks become more stable. But the less the income diversity the bank has, the more stable it becomes. CPI has the same effect as income diversity

The dummy variable for the kind of banks (bank) was recorded as value one for the Conventional Bank and value zero for the Islamic Bank. The coefficient of the bank is positive and statistically significant. Conventional Bank has more stability (high z-score) than Islamic Bank, since the coefficient 6.136144 is positive and T-value = 3.39 and P-value is 0.001 less than significance level. Thus, H0 is rejected and H1 is accepted.

Table 4-11:

Ddiagnosis of the multicollinearity 2011 to 2015

Variable	VIF	1/VIF
Cost/income	1.34	0.748327
Total asset	1.28	0.779822
BANK	1.23	0.811263
Loan/asset	1.19	0.842919
GDP	1.07	0.935956
CPI	1.05	0.948116
Income diversity	1.04	0.963754
Mean VIF	1.17	

$$\text{Tolerance} = \frac{1}{\text{VIF}}$$

Tolerance and Variance Inflation Factor has been conducted to find the existence of multicollinearity (i.e. the association among the independent variables).

In this study, all values of VIF test are less than five and the tolerance are above 20%, therefore, the multicollinearity does not exist.

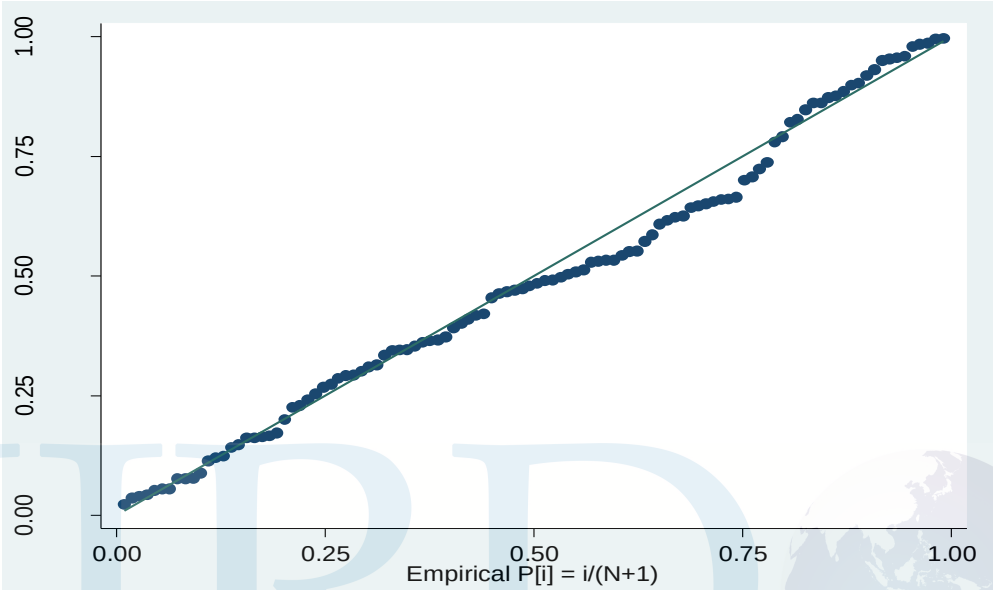

Figure 4.2: Residual of the normally distributed 2011 to 2015

The graph (4.14) is plot for the residual of the regression, and use to test if the residual is normally distributed. It can be noticed that the points are very close to line and that means the residual is normally distributed.

ANALYSES OF CONVENTIONAL AND ISLAMIC BANKS

This part will focus the competition of Islamic and conventional banks using SSPS software, and will explain mode summery Anova and Coefficient. First part is conventional banks and second part is showing the statistics of Islamic banks.

Table 4-12:
Model Summary (Part 1- Islamic banks)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.522[a]	.272	.219	9.872	.272	5.116	6	82	.000

Table 4-13:
ANOVA(Part 1- Islamic banks)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2991.256	6	498.543	5.116	.000[a]
	Residual	7991.077	82	97.452		
	Total	10982.333	88			

a. Predictors: (Constant), CPI, liquidity , TotalAssets, GDP, cost efficiency , Income Diversity

b. Dependent Variable: Z-score

Table 4-14:
Coefficients (Part 1- Islamic banks)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	13.316	10.681		1.247	.216
	Liquidity	2.699	12.871	.021	.210	.834
	Cost efficiency	.109	.075	.151	1.456	.149
	Income Diversity	-6.350	6.662	-.102	-.953	.343
	Bank size	.000	.000	.215	1.998	.049
	GDP	1.023	.232	.445	4.404	.000
	CPI	-.265	.290	-.095	-.913	.364

The Multiple R tables above shows a substantial correlation of R= .522[a]; R^2 = .272 (27.2%); F (6, 88) = 5.116; P <.001 between the six variables and the dependent variables which is z-score or the stability. The R-square value determines the portion of the variance estimated by the independent variable which is approximately 27.2% of the variance in the Z-score is accounted for by stability. This value points out those six variables explained stability by 27.2%. The other 72.8% are explained by other variable.

The F change the model summary also shows the value of 5.116 and with this; it shows that all the independents variables are significantly correlated to project success with coefficient alpha <.001.

The result gotten also indicated that independent variable has the strongest distinctive GDP contribution to the *Z-score* with Beta value of (β =.445) followed bank size with Beta value of (β =0.215). Followed by cost efficient which contributed to the *Z score* with Beta value of (β =.0.151) and finally 0.021 and -0.102 is the contribution of liquidity and income diversity respectively. Beta coefficients are the estimated value that results from a multiple regression equation carried out on independent variables that have been standardized and has variances lesser than 1. It indicates which independent variable is having greater effect on the dependent variable.

Table 4-15:

Model Summary (Part 2- Islamic banks)

Model						Change Statistics				
		R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
dimension0	1	.463[a]	.214	.156	6.730	.214	3.675	6	81	.003

a. Predictors: (Constant), CPI, TotalAssetsMilUSD, LoanAsset, CostIncome, GDP, IncomeDiversity

Table 4-16:

ANOVA[b] (Part 2- Islamic banks)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	998.938	6	166.490	3.675	.003[a]
	Residual	3669.194	81	45.299		
	Total	4668.131	87			

a. Predictors: (Constant), CPI, TotalAssetsMilUSD, LoanAsset, CostIncome, GDP, IncomeDiversity

b. Dependent Variable: Zscore

Table 4-17:

Coefficients (Part 2- Islamic banks)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.466	5.163		-.090	.928		
	Liquidity	28.444	7.229	.423	3.935	.000	.838	1.193
	Cost efficiency	-.016	.039	-.047	-.417	.678	.760	1.317
	Income Diversity	-1.515	3.555	-.048	-.426	.671	.765	1.307

	Bank size	-8.736E-5	.000	-.203	-1.924	.058	.872	1.147
	GDP	.003	.163	.002	.020	.984	.842	1.188
	CPI	.188	.206	.102	.913	.364	.771	1.297

a. Dependent Variable: Zscore

The F change the model summary also shows the value of 3.675 and with this; it shows that all the independents variables are significantly correlated to project success with coefficient alpha <.001.

The Multiple R tables above shows a substantial correlation of R= .463[a]; R^2 = .214 (21.40%); F (6, 87) = 3.675; P <.001 between the six variables and the dependent variables which is z-score or the stability. The R-square value determines the portion of the variance estimated by the independent variable which is approximately 27.2% of the variance in the Z-score is accounted for by stability. This value points out those six variables explained stability by 27.2%. The other 72.8% are explained by other variable.

The F change the model summary also shows the value of 5.116 and with this; it shows that all the independents variables are significantly correlated to project success with coefficient alpha <.001.

The result gotten also indicated that independent variable has the strongest distinctive liquidity contribution to the *Z-score* with Beta value of (β =.423) followed CPI with Beta value of (β =0.101). Followed by GDP which contributed to the *Z score* with Beta value of (β =.0.002) and finally -.048, -.047 and -0.203 is the contribution of Income Diversity, Cost efficiency and Bank size respectively. Beta coefficients are the estimated value that results from a multiple regression equation carried out on independent variables that have been standardized and has variances lesser than 1. It indicates which independent variable is having greater effect on the dependent variable.

4.5 Z-score comparison for Conventional and Islamic banks

This part is compering the Z-score of conventional and Islamic banking

Table 4-18:

10 years Z- Scores for Conventional and Islamic banks

Year	Conventional banks Z-score	Islamic banks Z-score	Defference
2006	189.23	145.55	43.68
2007	198.95	138.32	60.63
2008	181.02	134.26	46.77
2009	175.58	121.31	54.27
2010	180.63	116.02	64.61
2011	193.44	113.99	79.45
2012	191.05	109.51	81.54
2013	183.88	106.79	77.10
2014	192.94	89.95	102.99
2015	217.38	170.11	47.27

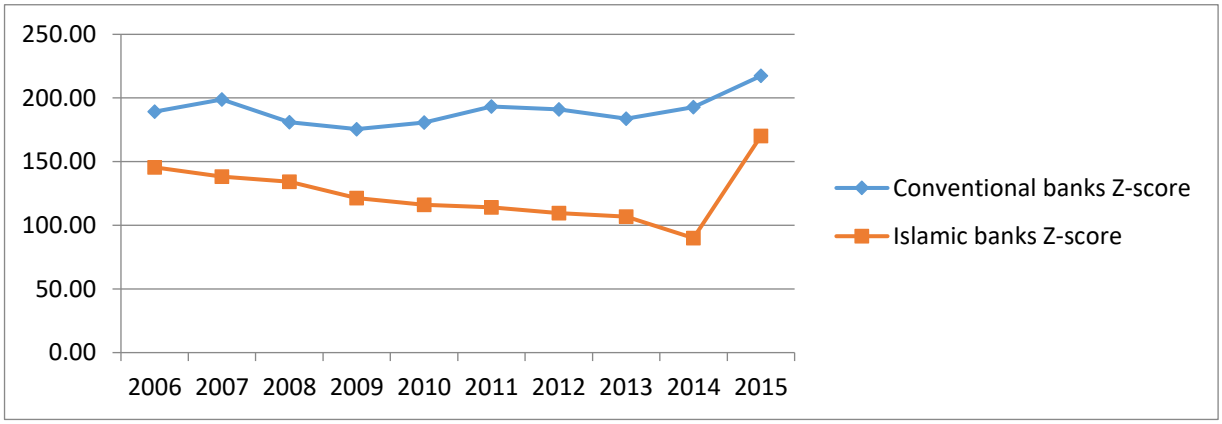

Figure 4-3: 10 *years Z- Scores trend for Conventional and Islamic banks*

Above figure(4.3) is showing that conventional banks is more stable then Islamic banks for the period 2006 to 2010 and also for the period 2011 to 2015, in other words, Conventional banks obtain the higher Z-score from 2006 to 2015. This will conclude our question, which banks are more stable for the period 2006 to 2010 and the period 2011 to 2015 and the answer is that conventional for both periods, and this result is consistent with Altaee H, Talo I, Adam M, (2013).

IV. DISCUSSIONS AND CONCLUSIONS

Introduction:

The objective of this chapter is to summarize the research findings, to demonstrate the conclusion, and to provide recommendations. Based on that, the conclusions from the results of the analysis are outlined and discussed later in the following section.

This research paper is partitioned into five chapters. Namely, they are Introduction in chapter one, Literature review in chapter two, Methodology in chapter three, Data analysis in chapter four, and finally discussion and conclusions in chapter five.

Chapter one emphasises mainly about the general thought of the field of this study as well as it generates an overall idea of the Banking system. In addition to stating the justification for this study, it states the objectives of this research.

In the second chapter, related researches and findings were gathered particularly. This chapter will review several of the previous Islamic and conventional banking researches and summarized conclusion made regarding to stability and performance of both banking streams.

The third chapter presents the methodology to be used in measuring the dependent and independent variables. There are several independent variables in this research and they are in the bank level independent factors are bank size (assets), loan/assets (liquidity), cost/income (cost efficiency), and income diversity (diversification) and he dependent variable is the measurement of z-score which is a collection of capital adequacy, profitability, and volatility measures

The fourth chapter shows the flow of the data analysis done by using (Stata software). In this chapter, the analysis will be divided into two parts based on the period. First part will cover the period of 2006 to 2010 for both Islamic and Conventional banks in GCC Countries and will include descriptive analysis, correlation matrix, and regression analysis and Second part will cover the period of 2011 to 2015.Finally, the conclusions come forward to be explained in chapter five.

SUMMARY AND CONCLUSION:

This study has been conducted in the field of banking to discuss the financial stability of banks. The two streams of banks were involved (Islamic and Conventional) with two specific objectives. The first objective is to examine the factors that affect the financial stability of Islamic and Conventional banks and the second one is to investigate the stability of Islamic and Conventional Banks before and after financial crisis for the years 2006 to 2010 and 2011 to 2015 respectively. This study covered the area of Gulf Cooperation Council (GCC) Countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates) for the period of 10 years from 2006 to 2015.

This study is considered to be the first one in this field to cover a period of 10 years as all previous researches in financial stability were conducted for a range of four to seven years only. In addition, this is the first study to have equal number of Islamic and Conventional banks as the whole sample in this study was 18 banks where 9 Islamic and 9 Conventional with 180 observations.

There are several factors that have been chosen to be dependent and independent variables. For instance, z-score played the role of the dependent variable (riskiness) while liquidity (loan/asset), cost efficiency

(cost/income), income diversity, bank size (total asset), GDP growth rate, and inflation rate (CPI) were considered as independent variables.

In order to accomplish the objectives of this study, regression analysis has been done to find the relationships among the variables and test the stability. In addition, descriptive analysis and correlation matrix were included in this study.

The analysis process was divided into two parts based on the period 2006 to 2010 and 2011 to 2015. The study found that there is a relationship between all independent variables and z-score and this result is consistent with the findings of Islam. M, Kozokov. S, (2009) and Cihak. M, Hesse. H, (2008).

For 2006 to 2010 the study concluded that all factors have a positive relationship with z-score except for income diversity. Furthermore, only two factors are insignificant which are income diversity and CPI. The robust regression was used in order to fix the outliers.

If all ratios of these factors are high (Loan/asset, Cost/income, Total asset, GDP, and CPI) that indicates the banks have higher stability. Banks with high liquidity ratio are more stable. And if the cost efficiency ratio of a bank is high, then the bank is more stable. Banks with big total assets are more stable. High GDP growth rate and CPI rate contribute positively to banks' stability. The findings are relatively consistent with the results of Altaee H, Talo I, Adam M, (2013).

Lastly the results show that there is a difference in stability of Islamic and Conventional banks and Conventional banks appeared to be more stable for 2006 to 2010.

For the period 2011 to 2015 the results showed that (Loan/asset, cost/income, total asset, and GDP growth rate) have a positive relationship with z-score. On the other hand, income diversity and CPI have a negative relationship. Only two factors are significant which are the total asset and the GDP growth rate. The more loans provided by banks, the more stable they become. If the total asset of a bank is large and the GDP growth rate is high, the banks become more stable. But the less the income diversity the bank has, the more stable it becomes. CPI has the same effect as income diversity.

The study showed the same result again regarding to stability as Conventional Bank has more stability for 2011 to 2015.

***Limitations**:*

Few limitations appeared in this study and these limitations are related to the insufficient number of observations and the missing data for certain years.

***Recommendations**:*

This study can be improved by increasing the number of observations and this can be achieved by increasing the number of banks to be used in the study and this definitely would help to increase the reliability. Other factors of stability should be taken into account in the future such as governance indicators (political stability, regulatory quality, and government effectiveness, corporate governance), and market share of both streams of banks.

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