Do Islamic Banks Perform Better than Conventional Banks? Evidence from Gulf Cooperation Council countries

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Abstract

Islamic Banking has been growing worldwide significantly in the past three decades and is developing remarkably in the Southeast Asia, Middle East and even in Europe and in North America. The Gulf Cooperation Council Countries (GCC), have dual banking system where Islamic and conventional banks are operating side by side. The purpose of this paper is to compare the financial performance (profitability, liquidity and structure) of the two banking styles over the 2000-2005 time period. Among other findings the empirical results show no significant differences in terms of profitability. However, Islamic banks are less exposed to liquidity risk. On the other hand, conventional banks depend more on external liabilities than Islamic banks. Naturally, GCC markets showed that customers were more attracted to use financial instruments offered by Islamic banks. Finally, no statistical significant differences were found on internal growth rate for both types of banking, which implies that this largely depends on the management style and the general performance of the specific bank.

هل تتمتع البنوك الإسلامية بأداء أفضل من البنوك التقليدية؟
شواهد من دول مجلس التعاون الخليجي

ملخص

نمت المصارف الإسلامية عالمياً على نحو بارز خلال الثلاثة عقود الماضية وتطورت بشكل ملحوظ في جنوب شرق آسيا، والشرق الأوسط وحتى في أوربا وأمريكا الشمالية. تمتلك الدول الخليجية نظاماً مصرفياً ثنائياً حيث أن المصارف الإسلامية تعمل جنباً إلى جنب مع المصارف التقليدية. الهدف من هذه الورقة هو مقارنة الأداء المالي (الربحية، السيولة والهيكلة) لكلا النوعين من المصارف خلال الفترة الزمنية 2000– 2005. أظهرت النتائج التطبيقية، خلاف بعض النتائج الأخرى، أنه لا يوجد فرق معنوي من ناحية الربحية. مع ذلك، إن المصارف الإسلامية أقل عرضة لخطر السيولة. من ناحية أخرى، تعتمد المصارف التقليدية على الديون الخارجية أكثر من المصارف الإسلامية. كما ومن الطبيعي أنه أظهرت الأسواق الخليجية انجذاب العملاء لاستخدام الأدوات المالية التي توفرها المصارف الإسلامية. أخيراً، لا يوجد اختلاف إحصائي معنوي لمعدل النمو الداخلي بين كلا النوعين من المصارف مما يدل ضمنياً أن هذا يعتمد بشكل كبير على نمط الإدارة والأداء العام لأي بنك محدد.

1. **Introduction**

Islamic banking is a growing worldwide phenomenon; in particular, the number of Islamic financial institutions has increased significantly in the Middle East and Southeast Asia. There are also International financial Institutions in Europe and the United States adopting some Islamic Instruments to attract investors who prefer the use of Islamic credit instruments, such as Murabaha, Mudaraba, Musharaka and Ijara.(1) "it is expanding not only in nations with majority Muslim populations, but also in other countries where Muslims are a minority, such as the United Kingdom and Japan" (Solé j.,2007).

In order to understand the concept we need to know that "Islamic religious law—that is, Sharia—emphasizes ethical moral, social and religious factors to promote equality and fairness for the good of society as a whole." (Dhumle & Sapcanin,2000,p.1) Therefore, Islamic financial Instruments do not consider money as an earning asset by itself; but it is used to evaluate commodities.

In Sharia Muslims are not allowed to receive or pay interest, which is called (Riba). They are encouraged to trade, invest and share profit and loss, instead. "Islamic attitudes towards ethics, wealth distribution, social and economic justice, and the role of the state." (Dhumle & Sapcanin,2000,p.1) Therefore, the purpose of finance in Islam is to achieve welfare for all parties.

This paper aims to evaluate the differences in financial performance between Islamic banks and conventional banks in GCC countries in terms of profitability, liquidity and structure. This is achieved by using a set of profitability, liquidity, and structural ratios and by estimating a Logistic model for the period 2000-2005.

The next section of the paper provides a brief literature review on Islamic Banking, section three presents the methodology employed while section four presents our estimations and results. Section five concludes.

2. GCC Economies and Literature Review

The most obvious feature of the Gulf Cooperation Council (GCC) countries, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and Arab Emirates, as an economic and political grouping is that it relies heavily on oil production for external revenues. Next to the oil & gas sector, the financial sector in most of GCC countries is the highest contributor to the country's GDP. The banking sector remains the cornerstone of the non-oil GDP growth in the GCC countries' economy. (Global Investment House, 2005).

The boom in oil prices during 1970's till the mid of 1980's caused a substantial financial wealth in the GCC countries. Therefore, part of this wealth was transferred to the population through many channels, i.e. salaries, subsidies and direct transfers. "The ensuring boost in income per capita and savings capacity in GCC countries have resulted

in the development of a modern banking sector whose expansion over time has been remarkable." (Limam, 2001).

Banks in GCC region are mainly owned by families (merchant families or influential ruling families) - government or government agencies. As an example, the major banks in Kuwait, National Bank of Kuwait (NBK) and Gulf Bank (GB) are both owned by well known Kuwaiti Families. Where as the Saudi National Commercial Bank, Emirates Bank International (EBI) and Abu Dhabi Commercial Bank (ADCB) in UAE are majority-state owned. The governments in Oman and Qatar own major stakes in the local banks. Foreign ownership in the GCC banking sector is limited region compared to other emerging market regions.

One important group of banking services that have experienced rapid growth over the last decade in GCC countries except in Oman are the Islamic financial services. Many GCC commercial banks have introduced Islamic windows and banking services side by side with their conventional banking operations.

Grais and Pellegrini (2006) define *Sharia* as "Islamic law extracted from the Qur'an and Sunna (saying and deeds of the prophet)". The authors indicate that the first oil price shock of 1973-1974 lead to the surge in liquidity, in addition, to the demand of Muslim population from Muslim communities and Western countries for financial services that are compatible with Islamic standards, therefore Islamic financial products were introduced to satisfy this demand in the last three decades. They also pointed out that Islamic finance has helped sustain economic growth throughout the Muslim and non Muslim world.

Among the feature of Islamic Banking highlighted by Grais and Pellegrini are:

i) Banks should not use interest-based debt transactions.
ii) Financial transactions should be connected with real economic activity and not to be pure financial transactions.
iii) Not to exploit any party of any transaction.
iv) Activities should not harm society.

Bahrain is considered a hub for Islamic banking and many activities are also taking place in Kuala Lumpur and London. (HSBC Amanah,2007) However, non of the GCC countries had applied full Islamic banking system like other Islamic countries such as Pakistan, Iran and Sudan. Islamic banks in GCC countries, are present side by side with conventional banks in the GCC region, they have dual banking system. Conventional banks are also trying to introduce Islamic windows in their attempt to attract Investors who are seeking to invest their money using *Sharia* compliance products and transactions and other non-Muslim who seek ethical solutions.

The major policy challenge currently facing monetary authorities in the GCC countries is how to bring these Islamic financial institutions, activities under the same supervision and regulation as imposed on conventional commercial banks.

2.1 Islamic Financial Instruments

Islamic banking received a new momentum in the early 1980s when Iran and Pakistan converted their financial sectors to exclusively Islamic banking rules. The most important distinguishing features of Islamic banks compared to conventional banks are their credit instruments, famous among which are Mudarabah, Murabaha , Musharaka, and Ijara.

Mudarabah (interpreted as trust-financing): under this mode of financing an Islamic bank, as a limited partner, provides cash (capital requirements) to a borrower or an entrepreneur who is free to use the funds in pursuit of the partnership's goal. While the share of each party in the profits and losses must be in percentages, and all expenses related to the partnership are deductible before profit distribution. (Uppal, 1999).

Murabaha (interpreted as cost-plus trade financing): under this mode, an Islamic bank, as a partner, finances the purchase of commodities in return for a share in the profits realized when the goods are sold. Payment of such financing can be deferred or made in installments .

Musharaka (interpreted as participation in financing): under this mode an Islamic bank provides a part of the equity plus working capital of a project and shares in profits and/or losses (Khaleefa, 1990).

Finally, Ijara (interpreted as rental financing or leasing): this activity, which has provided the bulk of the operating income of Islamic banks, covers both long-term leasing/lease financing and short-term hire-purchase. (Zamir and Mirakhor, 1999).

There has been a good size of literature developed around various aspects of Islamic banking in general and in particular on GCC. For general framework of analysis about Islamic banking, see for example, Chopra (1985), Aljarhi (1983), Al-Salous (1987), Khan (1984), Ahmad (1989), Al-Jarhi (1983) Khan and Mirakhor (1990), Kazarian (1993), Metwally (1993), Kleem (2000). Empirical work on Islamic banks, though vast, has not addressed issues of comparative performance of these banks in cross-country or cross-institution contexts. Such issues of performance raise questions relating to: what has been the evidence of such performance? Is the performance of such banks match those of the conventional banks or even out perform them? This Paper aims at addressing some of these issues.

An important feature to note about Islamic banks in GCC is their relative excessive liquidity. This has been interpreted as implying that most Islamic banks have the tendency to indulge in quick return lending. Moreover, this high ratio of funds shows the difficulty that Islamic banks may be facing in finding avenues for short-term investment of funds as well as reluctance to undertake a project-related funding. The extent to which Islamic banks can overcome the application of fund problem would depend on the willingness of the government to create suitable (non-interest bearing) short-term instrument as an outlet for excess funds of Islamic banks.

To our knowledge very few studies have been dedicated for the comparison of conventional banks and Islamic Banks and especially in GCC countries. In this study we intend to perform the comparison and shade some light on the differences of financial performance between Islamic and conventional banks in the GCC countries in terms of profitability, liquidity, capitalization and structure using financial ratios calculated from the absolute financial data provided by the major banks in GCC countries of both types. The information was taken from the Institute of Banking Studies in Kuwait.(2)

3. Modelling the performance of Islamic Banking

We present in this section the binary response probability model used in the modeling and classification of Islamic Banking performance: the Logit model.

In general a binary response model can be expressed as follows:[3]

$$P(y=1|\ x)=G(\beta_0+\beta_1 x_1+\ldots+\beta_k x_k)=G(b_0+x\beta) \tag{1}$$

where $0<G(z)<1$ to ensure non negative bounded probabilities.

3.1 The Logit Model

It is convenient to adopt an econometric approach that assumes that the underlying response variable y* can be expressed as a regression equation of the form:

$$y^* = \sum_{k=1}^{K} \beta_k x_k + \varepsilon \tag{2}$$

where y^* is unobserved and ε is symmetric around zero. Since y* is unobserved then in practice we use y, a dichotomous variable that takes the value of one when y*>1 and zero otherwise. Hence

$$\begin{aligned} \Pr ob(y=1) &= \Pr ob\left(\sum_{k=1}^{K} \beta_k x_k + \varepsilon > 0 \right) \\ &= \Pr ob\left(\varepsilon > -\sum_{k=1}^{K} \beta_k x_k \right) \\ &= 1 - F\left(-\sum_{k=1}^{K} \beta_k x_k \right) \end{aligned} \tag{3}$$

where F is the Conditional Density Function of ε.

The assumption about the distribution followed by ε is critical since this determines the binary model. The logistic model assumes that ε follows a logistic function, i.e.:

$$G(\varepsilon) = \frac{\exp(\varepsilon)}{\left[1 + \exp(\varepsilon)\right]} \tag{4}$$

The form of the Logit Model is:

$$\log\left[\frac{P(y=1)}{1-P(y=1)}\right] = \sum_{k=1}^{K} \beta_k x_k \tag{5}$$

Using the general form in equation (3) we transform (5) into an event probability with a logistic density function:

$$\Pr ob(y=1) = 1 - L\left(-\sum_{k=1}^{K} \beta_k x_k\right) = L\left(\sum_{k=1}^{K} \beta_k x_k\right) = \frac{e^{\sum_{k=1}^{K} \beta_k x_k}}{1 + e^{\sum_{k=1}^{K} \beta_k x_k}} \tag{6}$$

This is known as a logistic regression. Similarly, the probability for a non event is:

$$\Pr ob(y=0) = L\left(-\sum_{k=1}^{K} \beta_k x_k\right) = \frac{e^{-\sum_{k=1}^{K} \beta_k x_k}}{1 + e^{-\sum_{k=1}^{K} \beta_k x_k}} = \frac{1}{1 + e^{\sum_{k=1}^{K} \beta_k x_k}} \tag{7}$$

The dependent variable of the Logit model estimated in this paper will be equal 1 if the bank is conventional (γ_i=1) and will be equal 0 if the bank type is Islamic (γ_i = 0). Therefore, $P(y=1 \mid \mathbf{x})$ is the conditional probability that a bank is conventional and on the right side of the regression, the independent variables (explanatory variables) include list of the selected financial ratios.

If the coefficient of the Logit model βj >0, this indicates that increasing xj increases the probability of a bank type to be conventional bank Pr(γ_i=1). On the other hand, if βj <0 this indicates that increasing xj decreases the probability of the bank type to be conventional bank. Moreover, βj =0 indicates that increasing xj has no effect on Pr(γ_i=1).

Six Models will be used to avoid multi colinearity, each of the six models includes different independent variables on the right side of the regression model.

4. Data Analysis and Estimation

This section is divided in two main parts. The first is a statistical description of the data employed in the study and the second is an application of the binary response model presented in the previous section.

4.1 Data Analysis

The data set used in the analysis is a panel data obtained form the Institute of Banking Studies in Kuwait (IBS) and contains major Islamic and Conventional banks in Gulf Cooperation Council (GCC) countries over the period 2000-2005. The dataset covers 6 years from 2000 to 2005 and contains 342 semiannual observations overall; (69) observation for major Islamic banks and (273) observations for conventional banks. The following table summarizes the number of banks included in the study in each of the GCC countries per semester. The size of the sample varies depending on the availability of data.

Table 4.1: Number of Islamic and Conventional banks in GCC used in the analysis over the period 200-2005

	2000		2001		2002		2003		2004		2005	
	I	II	I	II	I	II	I	II	I	II	I	II
Bahrain	9	3	9	3	7	3	7	5	7	5	7	5
Kuwait	8	1	8	1	8	1	8	1	8	1	8	2
Qatar	4	2	4	2	4	2	4	2	4	2	4	2
Saudi Arabia	9	1	9	1	9	1	9	1	9	1	9	1
United Arab Emirates	17	3	17	3	17	3	16	4	16	4	16	4
Total	47	10	47	10	45	10	44	13	44	13	44	14

I: Conventional Bank, II: Islamic Bank
Source: IBS Financial Reports: GCC Banks 2000-2005

The financial Ratios used in this study are calculated for both types of banks from 2000-2005 and are presented in table 4.2 below also descriptive statistics of these financial ratios per bank type are presented in table 4.3.[(4)] :

Table 4.2: List of Financial Ratios used in the study

- Profitability Ratios
  - Return on Assets
  - Return on Equity
  - Dividend payout
- Liquidity Ratios
  - Cash to Assets
  - Cash to Deposits
- Leverage Ratios
  - Debt to Assets
  - Equity to assets
- Structure Ratios
  - Deposits to Equity
  - Deposits to Assets
  - Loans to Assets
  - Loans to deposits
  - Loans to Equity
  - Invest. & Deposits to Assets
- Other Measures
  - Internal growth Rate

Table 4.3: Descriptive Statistics of Selected Financial Ratios

Profitability Ratios	Bank type	Obs	Mean	Std. Dev.	Min	Max
Return on Assets	Conventional banks	273	2.27	2.08	-9.18	16.35
	Islamic banks	69	2.07	1.52	0.05	7.35
Return on Equity	Conventional banks	273	14.12	11.13	-87.06	35.17
	Islamic banks	69	13.99	10.00	0.39	52.77
Dividend Payout	Conventional banks	271	46.11	28.59	0.00	123.76
	Islamic banks	68	45.01	31.94	0.00	118.36
Liquidity Ratios						
Cash to Assets	Conventional banks	273	4.87	3.29	0.28	25.97
	Islamic banks	67	10.14	8.35	0.14	35.41
Cash to Deposits	Conventional banks	272	6.83	7.25	0.39	92.68
	Islamic banks	63	15.46	13.41	1.92	64.99
Structure Ratios						
Debt to Assets	Conventional banks	273	84.58	6.61	59.77	95.89
	Islamic banks	69	83.21	8.25	60.24	92.55
Loans to Assets	Conventional banks	273	49.95	16.00	1.39	84.13
	Islamic banks	69	72.55	15.34	13.40	89.69
Loans to deposits	Conventional banks	273	67.93	35.56	3.38	357.58
	Islamic banks	58	104.71	36.24	24.43	330.36
Loans to Equity	Conventional banks	273	371.77	158.64	7.04	1004.48
	Islamic banks	69	558.62	296.18	35.79	1156.63
Deposits to Assets	Conventional banks	273	76.55	13.37	8.74	93.44
	Islamic banks	69	62.74	27.71	0.76	88.95
Deposits to equity	Conventional banks	272	591.52	258.15	23.23	1563.97
	Islamic banks	69	504.33	351.70	8.33	1170.86
Equity to Assets	Conventional banks	273	15.42	6.61	4.11	40.23
	Islamic banks	69	16.79	8.25	7.45	39.76
Investment & deposit to Assets	Conventional banks	273	38.75	18.24	4.72	92.82
	Islamic banks	69	12.69	10.43	0.24	42.54
Fixed Assets to Assets	Conventional banks	273	1.12	0.70	0.07	4.14
	Islamic banks	69	2.68	2.08	0.30	11.63
Other Measures						
Internal Growth Rate	Conventional banks	273	9.87	11.41	-43.34	54.25
	Islamic banks	69	10.48	15.50	-14.91	106.39

As indicated by the means we can observe that there are no remarkable differences between the two types of banks in terms of profitability and internal growth rate ratios. The volatility of profitability ratios in conventional banks seems higher than Islamic banks but in order to test these impressions more formally we have tested the

hypothesis of the equality of means for every financial ratio overall (see table 4.4) and in every country.

The Null Hypothesis states that the means of both types of banks are not significantly different, that is, $H_0 : \mu_1 = \mu_2$

Table 4.4: Test for Equality of Means of obtained ratios for the two types of banks

Profitability Ratios						
	Overall	**Bahrain**	**Kuwait**	**Qatar**	**Saudi Arabia**	**UAE**
RETURN_ON_ASSETS	-0.748	-1.281	-0.473	-1.078	-3.452	3.036
	*(0.455)	*(0.204)	*(0.638)	*(0.289)	(0.001)	(0.003)
RETURN_ON_EQUITY	-0.094	-0.463	-2.981	-2.188	-2.328	3.197
	*(0.926)	*(0.645)	(0.004)	0.036	(0.023)	(0.002)
DIVIDEND_PAYOUT0	-0.277	0.589	0.547	1.729	-1.684	-1.918
	*(0.782)	*(0.558)	*(0.587)	0.093	(0.098)	(0.058)
Liquidity Ratios						
Cash to Assets	8.184	-5.068	0.446	-8.91	-10.113	-3.448
	(0.000)	(0.000)	*(-0.657)	(0.000)	(0.000)	(0.001)
Cash to Deposits	7.067	-6.125	0.638	-9.393	-12.223	-4.012
	(0.000)	(0.000)	*(-0.526)	(0.000)	(0.000)	(0.000)
Structure Ratios						
DEBT_TO_ASSETS	-1.461	4.074	-1.736	-2.444	1.763	0.704
	*(0.145)	(0.000)	(0.088)	(0.020)	(0.083)	*(0.483)
LOANS_TO_ASSETS	10..567	-7.329	-5.372	-6.655	-11.675	-4.286
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LOANS_TO_DEPOSITS	7.131	-6.007	-0.393	-7.221	-13.169	-5.603
	(0.000)	(0.000)	*(0.696)	(0.000)	(0.000)	(0.000)
LOANS_TO_EQUITY	7.144	-0.979	-7.387	-6.912	-4.249	-3.937
	(0.000)	*(0.331)	(0.000)	(0.000)	(0.000)	(0.000)
DEPOSITS_TO_ASSETS	-5.955	4.889	-0.352	-1.174	6.682	3.655
	(0.000)	(0.000)	*(0.726)	*(0.249)	(0.000)	(0.000)
DEPOSITS_TO_EQUITY	-2.315	4.880	(-1.946)	-3.049	2.548	-0.975
	(0.021)	(0.000)	(0.057)	(0.004)	(0.014)	*(0.332)
EQUITY_TO_ASSETS	1.463	-4.095	1.736	2.439	-1.763	-0.751
	*(0.144)	(0.000)	(0.088)	(0.020)	(0.083)	*(0.454)
INVEST_DPSTS_TO_ASSET	-11.399	8.968	3.918	8.641	15.253	5.927
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fixed Assets to Assets	10.330	-4.12068	-11.844	-7.027	-13.171	-2.718
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)
Other Measures						
INTERNAL_GROWTH_RATE	0.366	-0.434	-4.413	-2.452	0.109	2.777
	*(0.760)	*(0.666)	0.000	(0.020)	*(0.913)	(0.006)

* Not significant

The test equality of mean in the above table shows that there are no significant differences in profitability ratios for the overall sample and this is true for profitability ratios of banks in Bahrain and varies in Qatar, Saudi Arabia and UAE. As for the liquidity ratios, The test results for the overall sample showed that there are significant differences between the two groups and in all GCC countries except in Kuwait. That means we can reject the null hypothesis.

The test of structure ratios indicated that there are significant differences for the overall sample between the two groups except for the debt to assets ratio and equity to assets, the majority of structure ratios for banks in each GCC showed the same result as for the overall sample except in some cases as in the above table.

Finally, there are no significant differences between both groups of banks for internal growth rate of the overall sample and most of the GCC countries except for Bahrain and Saudi Arabia. We also compared the average of each financial ratio for Islamic bank vs conventional banks vs industry and found that as indicated in figure 4.1 (see Appendx I), the return on assets and the return on equity of Islamic banks out performed Conventional banks and industry averages, and in an isolated case UAE proved the opposite. As for the Dividend Payout ratio Saudi Arabia had the highest payout, with UAE next in line. However, conventional banks in Bahrain, Kuwait, and Qatar had a higher payout than Islamic Banks, and industry average.

Islamic banks had a significantly higher Cash to Assets and cash to deposits ratio when compared to conventional banks and industry averages, except for Kuwait where the Islamic Banks fell relatively below the conventional and industry averages liquidity.

Conventional banks and Islamic banks in UAE have no significant differences in their average ratio of Debt to Assets. Moreover, in Bahrain, Saudi Arabia and UAE conventional banks have a higher average ratio of Debt to Assets than Islamic banks and Industry average. The opposite is true for Kuwait and Qatar, where Islamic banks have higher average than conventional banks and Industry average.

Islamic banks have higher average ratios of loans to Assets, Loans to Deposits and Loans to Equity in the selected GCC countries than the conventional banks and the industry averages.

Bahrain Conventional banks have a significantly higher average of deposits to Assets ratio than that of Islamic banks. While, on the other hand the differences remain slight for the other selected GCC countries.

Islamic banks have a higher average of Deposits to Equity ratio than that of conventional banks and the industry average in Kuwait, Qatar and UAE, while the opposite is true for Bahrain and Saudi Arabia.

Islamic banks in Bahrain, Saudi Arabia and UAE had a higher Equity to Assets ratio than that of Conventional Banks and the industry average. Kuwait and Qatar showed

different results where conventional banks had a higher Equity to Assets ratio than Islamic banks and the industry average.

Islamic banks have significantly higher average of fixed assets to assets ratio than that of Conventional banks and Industry averages in all selected GCC countries.

The graph indicates that the average Internal Growth Rate of Islamic Banks is higher than that of Conventional and industry average, in the cases of Bahrain, Kuwait, and Qatar. The opposite was true for Saudi Arabia and UAE.

4.2.3 Correlation Matrix

The correlation matrix below shows there is strong correglation (positive/negative) among many of the explanatory variables. In order to avoid multicolinearity in the probability models to be estimated below we have opted to remove the conflicting variables.

Table 4.5: Correlation Matrix of Financial Ratios used in the Analysis

	Cash to Assets	Cash to deposits	Deposits to Assets	Deposits to Equity	Debt to Assets	Dividends Payout	Equity to Assets	Fixed Assets to Assets	Internal Growth Rate	ts and Deposits	Loans to Assets	Loans to Deposits	Loans to Equity	Return on Assets	Return to Equity
Cash to Assets	1														
Cash to deposits	0.80	1													
Deposits to Assets	-0.01	-0.37	1												
Deposits to Equity	-0.06	-0.25	0.66	1											
Debt to Assets	-0.09	-0.33	0.64	0.88	1										
Dividends Payout	-0.05	-0.03	0.13	0.04	0.05	1									
Equity to Assets	0.09	0.33	-0.64	-0.88	-1.00	-0.05	1								
Fixed Assets to Assets	0.44	0.39	-0.10	-0.09	-0.09	0.10	0.09	1							
Internal Growth Rate	0.02	-0.03	0.10	0.02	-0.02	-0.35	0.02	-0.02	1						
Investments and Deposits to Assets	-0.43	-0.25	-0.27	0.00	0.04	-0.01	-0.04	-0.32	-0.16	1					
Loans to Assets	0.24	0.08	0.30	0.06	0.03	0.02	-0.03	0.22	0.18	-0.94	1				
Loans to Deposits	0.16	0.42	-0.42	-0.30	-0.39	-0.01	0.39	0.17	0.09	-0.53	0.57	1			
Loans to Equity	0.11	-0.08	0.51	0.74	0.66	0.00	-0.66	0.12	0.12	-0.55	0.63	0.18	1		
Return on Assets	0.01	0.03	-0.02	-0.20	-0.25	0.10	0.25	0.03	0.52	-0.16	0.15	0.16	-0.08	1	
Return to Equity	0.03	-0.03	0.26	0.16	0.12	0.12	-0.12	0.03	0.74	-0.20	0.23	0.09	0.23	0.55	1

4.2.4 Using the Logit Model to analyze the Financial Ratios

Finally, the probability model presented in section 3 is estimated. Hence, the dependent variable is a dummy binary variable created to identify the bank type. It can take only two values 1 or 0. If the bank type equals 1, that means the bank is conventional bank. On the other hand, if the value of bank type is zero that means the bank type is Islamic bank. Each model contains array of financial ratios as independent variables that would help in predicting the type of bank on the left hand side of the equation.

Table 4.6 Estimation output of the Six Models

		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Profitability Ratios							
Return on Assets	Coef.	0.097					
	p>|z|	* 0.607					
Return on Equity	Coef.			0.036			0.029
	p>|z|			* 0.223			* 0.150
Dividend Payout	Coef.		-0.012	0.002	-0.006	-0.003	
	p>|z|		* 0.184	* 0.773	* 0.524	* 0.685	
Liquidity Ratios							
Cash to Assets	Coef.	-0.167			-0.241	-0.106	
	p>|z|	0.000			0.000	0.022	
Cash to Deposits	Coef.		-0.103				-0.094
	p>|z|		0.000				0.000
Structure Ratios							
Debt to Assets	Coef.						0.226
	p>|z|						0.001
Loans to Assets	Coef.			-0.150	-0.178		
	p>|z|			0.000	0.000		
Loans to deposits	Coef.	-0.030					
	p>|z|	0.000					
Loans to Equity	Coef.	-0.007	-0.014			-0.014	-0.013
	p>|z|	0.000	0.000			0.000	0.000
Deposits to Assets	Coef.			0.069			
	p>|z|			0.000			
Deposits to equity	Coef.				0.002		
	p>|z|				0.038		
Equity to Assets	Coef.		-0.238			-0.305	
	p>|z|		0.001			0.000	
Investment & deposit to Assets	Coef.		0.114			0.055	0.110
	p>|z|		0.000			0.004	0.000

Continue …Table 4.6

Fixed Assets to Assets	Coef.	-0.956		-0.971		-0.519	
	p>|z|	0.000		0.000		0.003	
Other Measures							
Internal Growth Rate	Coef.		0.000		0.003		
	p>|z|		* 0.991		* 0.904		
Number of obs		329	332	339	336	337	335
LR chi2		175.84	196.78	202.89	184.77	193.91	194.49
Prob > chi2		0.00	0.00	0.00	0.00	0.00	0.00

* Not significant.

The likelihood ratio chi-square of of all six models have a p-value of 0.000 which means that each one of the six models as a whole fits significantly better than an empty model (a model with no predictors).

Table 4.7: Marginal effects after logit

		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Profitability Ratios							
Return on Assets	dy/dx	0.005					
	p>|z|	0.611					
Return on Equity	dy/dx			0.001			0.001
	p>|z|			0.237			0.207
Dividend Payout	dy/dx		0.000	0.000	0.000	0.000	
	p>|z|		0.244	0.770	0.531	0.691	
Liquidity Ratios							
Cash to Assets	dy/dx	-0.008			-0.006	-0.004	
	p>|z|	0.003			0.009	0.055	
Cash to Deposits	dy/dx		-0.002				-0.002
	p>|z|		0.027				0.022
Structure Ratios							
Debt to Assets	dy/dx						0.005
	p>|z|						0.028
Loans to Assets	dy/dx			-0.005	-0.004		
	p>|z|			0.001	0.003		
Loans to deposits	dy/dx	-0.002					
	p>|z|	0.000					
Loans to Equity	dy/dx	0.000	0.000			-0.001	0.000
	p>|z|	0.000	0.021			0.002	0.014
Deposits to Assets	dy/dx			0.002			
	p>|z|			0.009			

Continue …Table 4.6

Deposits to equity	dy/dx				0.000		
	p>|z|				0.045		
Equity to Assets	dy/dx		-0.004			-0.012	
	p>|z|		0.037			0.002	
Investment & deposit to Assets	dy/dx		0.002			0.002	0.002
	p>|z|		0.009			0.005	0.005
Fixed Assets to Assets	dy/dx	-0.048		-0.034		-0.021	
	p>|z|	0.003		0.013		0.037	
Other Measures							
Internal Growth Rate	dy/dx		0.000		0.000		
	p>|z|		0.991		0.904		

Table 4.6 presents the results of the six developed models. The combination of explanatory variables in each model, are not highly correlated. The results indicate that all parameters in the six models are statistically significant at 5% significance level. Except for profitability ratios and Internal Growth Rate ratios, they were not statistically significant. Moreover, the sign of any coefficient of the independent variable used in more than one model is consistent. This implies that the results are robust indicating that all significant parameters in employed models can explain bank type behavior.
Pseudo R2 of model 2 is the highest when comparing it with Pseudo R2 of other models employed in this study.

Table 4.8: Estat Classification

Model	Correctly Classified
1	93.62%
2	93.98%
3	93.51%
4	88.99%
5	91.99%
6	91.64%

Estat classification (estat class) command in Stata 9 produces statistics of estimated sample and calculates the correctly classified percentage. This percentage was calculated to measure how much the model was able to correctly classify the dependent value (Bank Type). Table 4.8 summarizes the results, for more details (see Appendix):

Parameters of the Profitability Ratios presented by Return on Assets (in model 1), Return on Equity (in model 3 and 6) and Dividend Payout (in model 2, 3, 4 and 5) were not significant. The result was not expected, because Islamic banks are allowed to use different kind of instruments, such as, Murabaha , Mudaraba and Ijara , where as, conventional banks are not allowed to use the same instruments. As in figures 4.6, 4.7 we can say that Islamic banks, over the selected period (2000-2005), were more profitable than conventional banks like the case of Bahrain, Kuwait, Qatar and Saudi Arabia. Except in the case of UAE, conventional banks were more profitable than Islamic banks, This was due to the fact that, conventional banks outnumber the Islamic banks, 16 to 4. In addition, the multinational population of UAE is made up of diverse ethics and religious

background, while Islamic banks serve a niche market (Muslims and non-Muslims who believe in a system that prohibit interest).

As for the parameter of Dividend Payout, it is not statistically significant. This result is expected, as shown in figure 4.10 Islamic banks in Saudi Arabia and UAE have higher dividend payout ratio than conventional banks, the opposite was true in the case of Bahrain, Kuwait and Qatar.

All parameters of Liquidity ratios presented by Cash to Assets (in model 1, 4 and 5) and Cash to Deposits in models 2 and 6 are statistically significant at 5% significance level. The negative coefficients of both liquidity ratios imply that liquidity ratios have negative marginal effect to probability of bank type to be a conventional bank. This result, is expected since Islamic banks are not allowed to borrow money from central banks or any other banks neither can they deal with bonds because Interest is forbidden in Islam, therefore Islamic banks tend to keep high rate of liquidity as first line of defense. Although, high liquidity ratios may affect profitability ratios but the opposite is proven by Islamic banks because they rely more on Murabaha, Mudaraba, Musharakah, Ijara and share Profit/loss investments and encourage project finance especially real estate and infra structure projects rather than deposits, which is an interesting finding.

All parameters of structure ratios are significant at 5% significance level and their signs are consistent through the different models used. The positive coefficient of the Debt to Assets ratio indicates that it is in favor of conventional banks, in other words it has positive marginal effect to probability of a bank to be conventional bank. This means conventional banks were leveraged more than Islamic banks over the selected period. This result was expected. as indicated earlier that Islamic banks cannot depend on external debts or long-term transactions with interest.

The negative coefficients of Loans to Assets (in model 3 and 4), Loans to Deposits (in model 1) and Loans to Equity (in model 1, 2, 5 and 6) imply that these ratios have negative marginal effect on the probability of bank type to be conventional banks. These variables are in favor of Islamic banks. The result of finding is expected. The term receivables are used in the Islamic statements instead of loans. It is in favor of Islamic banks because Islamic banks depend on retail transactions, customers of Islamic banks tend to deal with Islamic banks based on their believes that interest is forbidden. Therefore, they look for financing their projects or needs without paying interest by using alternative methods of financing offered by the Islamic banks such as Murabaha, Ijara and Musharakah. Customers in the case of Murabaha, buy the asset from Islamic banks. Islamic banks buy the asset and resell it to the customer, the transaction therefore is asset versus money and not money versus money as in the case of loans.

Parameters of Deposits to Assets (in model 3), Deposits to Equity (in model 4) and Investment and Deposits to Assets (in model 2, 5 and 6) are significant and in favor of conventional banks. The positive sign of their coefficients have positive marginal effect to probability of bank type to be conventional bank. This result is debatable it depends on the market. For instance, in Kuwait and Qatar Islamic banks have no problem

in attracting deposits. Customers who are welling to deposit their money in Islamic banks are ready to share profit and loss and bear risk, because there is no fix interest. Returns on long-term deposits depend on bank performance, in other words they share risk with the bank. The case is different in Bahrain, for example, conventional banks attract more deposits, some customers might prefer to deposit their money in conventional banks.

Parameter of Equity to Assets (in model 2 and 5) and Fixed Assets to Assets in (model 1, 3 and 5) are statistically significant at 5%. The negative sign of their coefficients have a negative marginal effect to probability of bank type to be conventional bank.

When it comes to coefficients' size, we can conclude from the above tables, that fixed assets to Assets is the most important and significant ratio in making Islamic banks different from conventional banks, followed by Equity to Assets then Debt to Assets and Loans to Assets in terms of structure and finally Cash to Assets in terms of liquidity. Profitability ratios and Internal Growth rates showed no significant differences between both types of banks. This result is very logical.

Finally, all results of this study were highly significant and the marginal effect showed no change in the sign of any coefficient, keeping other coefficients in the model the same, gives probability of bank type in same direction of the sign of coefficient indicating that the results were robust and reliable.

4.3 The Empirical Results

To summarize, there are some ratios indicate that there are differences between the performance of both types of banks and some showed that there are no differences. Empirical results showed that there were no significant differences in terms of profitability between both types of banking. However, Islamic banks proved to be profitable in all GCC banks except for UAE. That was due to high competition, and more diverse market. In markets where there are customers who are welling to deal with Islamic banks, such as, Kuwait, Bahrain, Saudi Arabia and Qatar, Islamic banks proved to be more profitable.

As expected that Islamic banks tend to have high liquidity ratios relative to conventional banks and that was due to the fact that Islamic banks can not rely on borrowing money from central bank or any other sources. On the other hand, conventional banks are more leveraged compared to Islamic banks. This is may partially explained by the nature of Islamic banking, they can not borrow money from central bank or other sources because of the interest.

5. Summary and conclusions

The aim of this paper was to compare between the financial performance of Islamic banks and conventional banks in the GCC countries using statistical analysis of summary financial information and selected financial ratios. Most of the published literature explains the differences in culture and principles between both banking types, but very few studied the differences in financial performance in practice utilizing statistical model.

In this paper, quantitative method is used to examine the differences in financial performance between both types of banks. For the most part, financial ratios were also used to predict future performance such as type of a bank. The analysis utilized an econometric LOGIT technique to find out the differences between the financial performance of Islamic banks and conventional banks using key financial ratios over the period (2000–2005), in a panel sample of both types of banking in the GCC countries. Six models were developed to avoid multi-collinearity.

The results were very significant and robust and were confirmed by the calculation of marginal effect, since the magnitude of calculated marginal effects of financial ratios to the probability of bank type is less than one and standard errors were very small. Models were successful in describing the differences in financial performance based on selected financial ratios.

The obtained statistical results suggest that:

1- Market share, defined as total assets, of the financial data published over the period (2000-2005), shows that conventional banks are dominant in GCC countries. However, they are loosing their market share against Islamic banks. Since in 2000 the total assets of conventional banks in GCC countries was 87.91%. It decreased to 85.84% in 2005 with 40.64% growth rate. Islamic banks increased from 12.09% in 2000 to 14.16% in 2005 with 50.53% growth rate. This indicates that Islamic banks are growing faster than conventional banks over time.
2- Analysis of differences in Profitability ratios, presented in this paper, by return on assets, return on equity and dividend payout ratios, the statistical results show that there are no significant differences between both types of banks. However, comparing averages of both banking types and industry in each country of the GCC countries show that Islamic banks had higher ratios in GCC countries except in the case of UAE. The result is reasonable, market and management play important role in determining profitability, in addition to the bank performance.
3- As for differences in Liquidity ratios, it is vital for the survival of a bank. Liquidity ratios are presented by Cash to Assets and Cash to Deposits ratios in this paper. Analysis of the ratios shows that conventional banks are exposed to liquidity risk more than Islamic banks. Liquidity ratios are in favor of Islamic banks.
4- Analysis of differences in structure ratios shows the following statistical results:

- Debt to Asset ratio is in favor of Conventional banks indicating that conventional banks depend more on external liabilities.
- Loans/Receivables to Assets ratio is in favor of Islamic banks too. This implies that customers are more attracted to use Islamic banking financing instruments because they comply with Islamic sharia.
- Deposits to Equity, Deposits to Assets and Investments and deposits to Assets were in favor of conventional banks but this result is debatable. Average of these ratios for both banking types showed that Islamic banks in some GCC countries like Kuwait and Qatar had higher ratios than conventional banks, while in Bahrain, Saudi Arabia and UAE showed the opposite. This can be explained by conventional banks outnumbered Islamic banks in these countries, which made competition high in attracting deposits.
- Fixed Assets to Assets ratio is in favor of Islamic banks. This result is very rational because Islamic banks use financial instruments such as Murabaha, Ijara, and these instruments increase the rate of Fixed Assets to Assets.
- The statistical results show that there are no significant differences between both banking types in terms of Internal Growth rates.
- Loans/Receivables to Deposits and Loans to Equity ratios are in favor of Islamic banks, indicate that Islamic banks are more into financing operations rather than receiving deposits and this implies that credit risk of conventional banks is less than it is in Islamic banks.
- Deposit to Equity ratios and Investment and deposits to Assets ratios are in favor of conventional banks. Obviously, this result indicates that the ability of conventional banks to leverage their operations by attracting more deposits and investments.
- Equity to Assets ratio is in favor of conventional banks. This ratio is an important measure of capital adequacy; higher values of this ratios reflect a strong financial structure of the bank and less possibilities of financial difficulty.

Footnotes

(1) For more details, please visit: Islamic-finance.net

(2) Institute of Banking Studies is one of the leading internationally renowned organization in the area of human resources training and development, for more details visit; www.kibs.edu.kw

(3) This section is based on the works by Wooldridge (2000), Liao (1994) and Maddala (1991).

(4) Oman was excluded since there were no Islamic banks in Oman. Extreme Outliers that were found not related to the members of the sample and fall outside the general pattern of the rest of the observations were removed from the analysis.

References

Ahmed, Shagil (1989), Islamic Banking and Finance, *Journal of Monetary Economics*, 24, North-Holland.

Al-Jarhi, M. (1983), A Monetary and Financial Structure for an Interest Free Economy, in Money and Banking in Islam, International Center for Research in Islamic Economics.

Al-Salous, A. (1991), Banks and Investment, Cairo, Al-Azhar (in Arabic).

Girgis M. (2002), *"Will National Asians Replace Arab Workers in the GCC?"*, WP81, E.C.E.S.

Global Investment House (2005), *GCC Banking Sector*, [Internet]. Available at: http://www.globalinv.net/research/GCC-Banking-Sector-2005.pdf (Accessed 1 Nov 2008)

Global Investment House (2005), *Kuwait Banking Sector*, [Internet]. Available at: http://www.globalinv.net/research/Kuwait-Banking-052007.pdf (Accessed 7 Nov 2008)

Global Investment House (2005), *Oman Banking Sector*, [Internet]. Available at: http://www.globalinv.net/research/Oman-BankingSector-052007.pdf (Accessed 7 Nov 2008)

Global Investment House (2005), *Saudi Arabia Banking Sector*, [Internet]. Available at: http://www.globalinv.net/research/SaudiBanking-092006.pdf (Accessed 7 Nov 2008)

Global Investment House (2005), *UAE Banking Sector*, [Internet]. Available at: http://www.globalinv.net/research/UAE-Banking-012007.pdf (Accessed 7 Nov 2008)

Global Investment House (2007), *Bahrain Banking Sector*, [Internet]. Available at: http://www.globalinv.net/research/Bahrain-Banking-062007.pdf (Accessed 7 Nov 2008)

Kazarian, E.G. (1993), *Islamic Versus Traditional Banking*, Boulder: Westview Press.

Khaleefa, Mohamed (1990), Islamic Banking in Sudan's Rural Sector, paper was presented in the Seminar on "Financial Institutions Working in Accordance with Shariah", sponsored by IRTI and IDB and the Government of Republic of Indonesia, held in Jakarta, 17-19 August, 1990.

Sole' J. Introducing Islamic Banks into Conventional Banking Systems, .Available at: http://www.imf.org/external/pubs/ft/wp/2007/wp07175.pdf (Accessed 20 Sep 2008)

Khan, M. and Mirakhor (1990), Islamic Banking Experiences in the Islamic Republic of Iran and Pakistan, *Economic Development and Cultural Change*, January.

HSBC Amanah (2008), *About Islamic Banking*. [Internet]. Available at: http://www.hsbcamanah.com/1/2/hsbc-amanah/about-islamic-banking (Accessed 2 Nov 2008)

Chopra, M. (1985), Towards a Just Monetary System, Leicester, the Islamic Foundation.

Iqbal, Zamir and Abbas Mirakhor (1999), "Progress and Challenges of Islamic Banking", Thunderbird International Business Review, Vol. 41, No. 4/5, pp. 381- 405.

Institute of Banking Studies (1999) and (1998), GCC Banks: Financial Report (2000-2002), (2003-2005), Kuwait.

Kaleem, Ahmed (2000), Modeling Monetary Stability Under Dual Banking System: The Case of Malaysia, *International Journal of Islamic Financial Services,* Vol. 2, No.1.

Limam I.(2001),A Comparative Study of GCC Banks Technical Efficiency, Available at: http://www.erf.org.eg/uploadpath/pdf/0119_web.pdf (Accessed 1 Nov 2008)

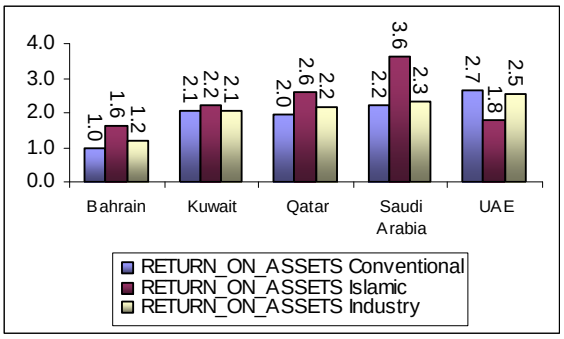
Metwally, M.M. (1993), *Essays on Islamic Economics*, Academic Publishers, Calcutta.

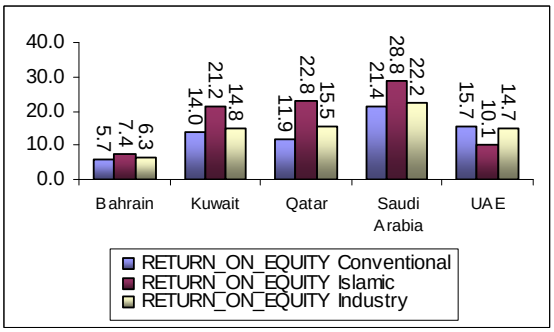
Minitab, 2008. *What is multicollinearity in regression?*, [Internet], Available at: http://www.minitab.com/support/answers/answer.aspx?log=0&id=721 (Accessed 27 Mar 2008)

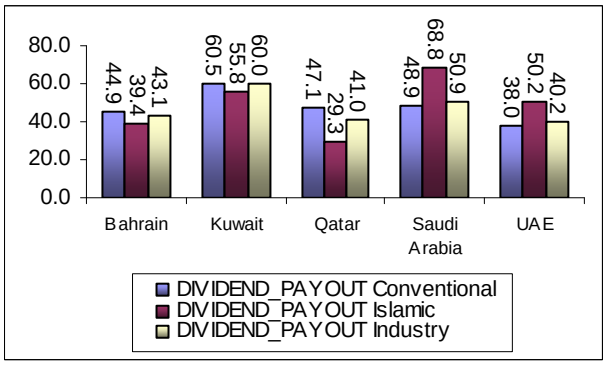
Jbili A., Galbis V., and Bisat A.(1997), *Financial Systems and Reform in the Gulf Cooperation Council Countries*, [Internet]. Available at: http://www.imf.org/external/pubs/FT/gcc/index.htm (Accessed 25 Oct 2008)

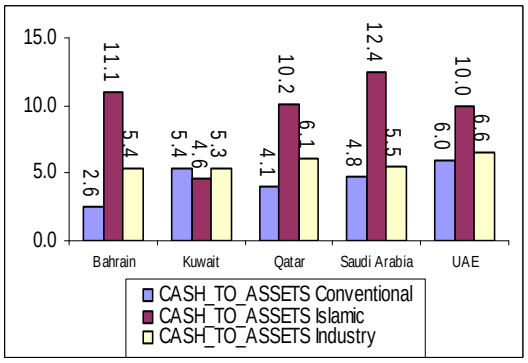
Appendix I

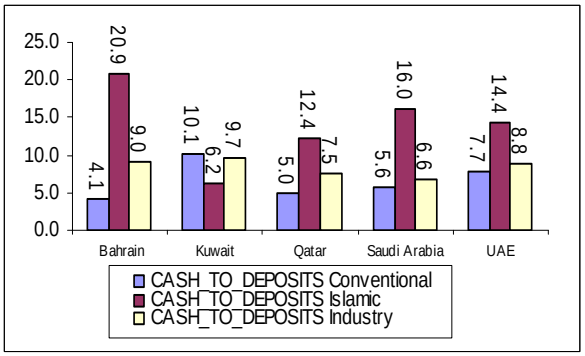
Figure 4.1: Average of each obtained financial ratios of Islamic banks vs Conventional Banks vs Industry

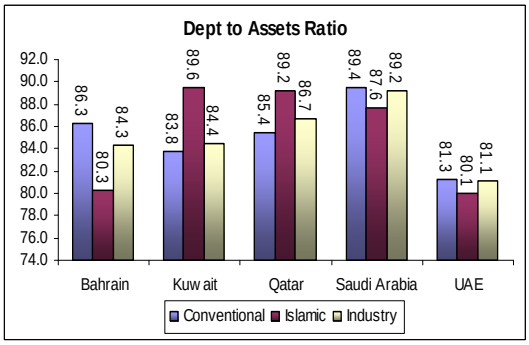


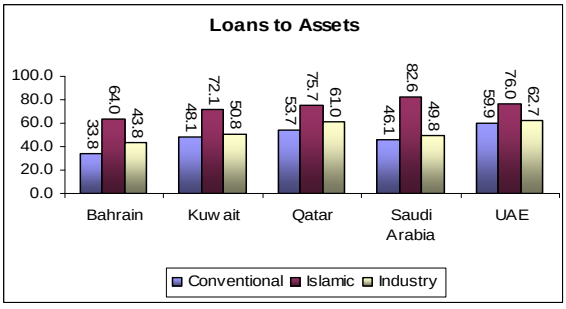


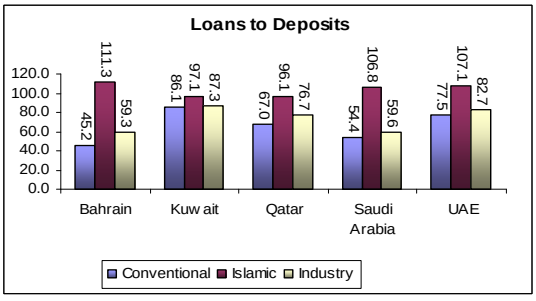


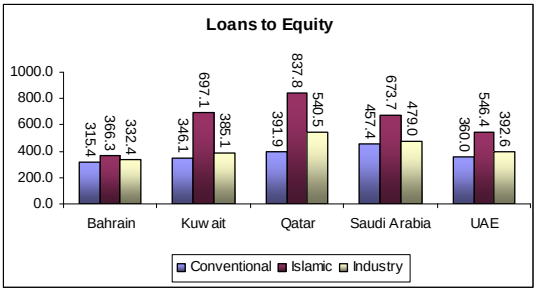


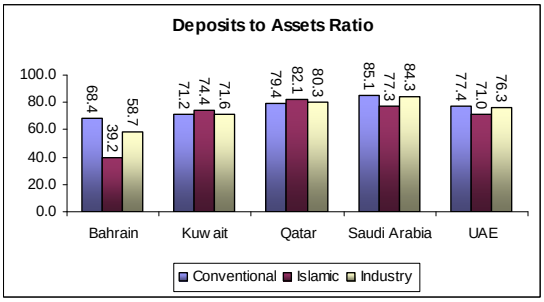


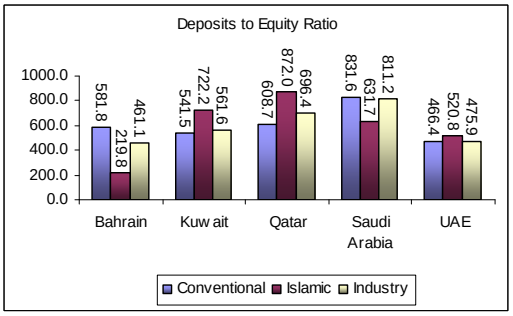


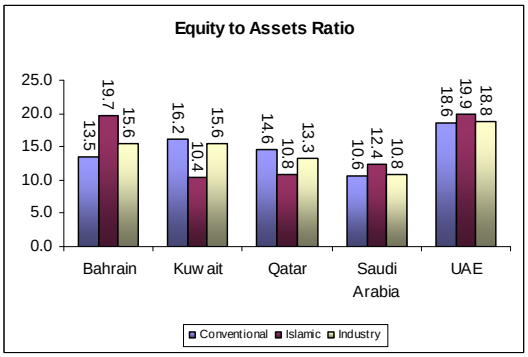


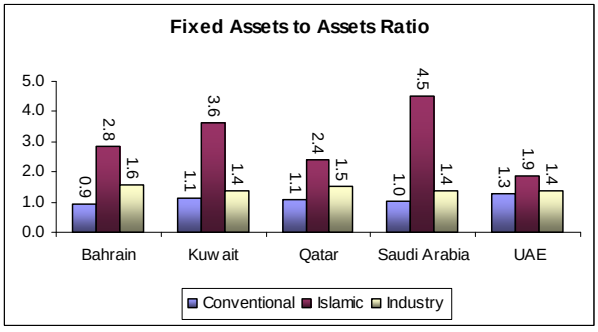


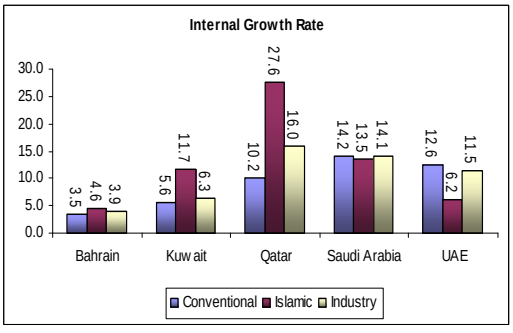

Loans to Equity
1000.0
800.0
600.0
400.0
200.0
0.0
315.4
366.3
332.4
346.1
697.1
385.1
391.9
837.8
540.5
457.4
673.7
479.0
360.0
546.4
392.6
Bahrain
Kuwait
Qatar
Saudi Arabia
UAE
Conventional
Islamic
Industry


Deposits to Assets Ratio
100.0
80.0
60.0
40.0
20.0
0.0
68.4
39.2
58.7
71.2
74.4
71.6
79.4
82.1
80.3
85.1
77.3
84.3
77.4
71.0
76.3
Bahrain
Kuwait
Qatar
Saudi Arabia
UAE
Conventional
Islamic
Industry


Deposits to Equity Ratio
1000.0
800.0
600.0
400.0
200.0
0.0
581.8
219.8
461.1
541.5
722.2
561.6
608.7
872.0
696.4
831.6
631.7
811.2
466.4
520.8
475.9
Bahrain
Kuwait
Qatar
Saudi Arabia
UAE
Conventional
Islamic
Industry


Equity to Assets Ratio
25.0
20.0
15.0
10.0
5.0
0.0
13.5
19.7
15.6
16.2
10.4
15.6
14.6
10.8
13.3
10.6
12.4
10.8
18.6
19.9
18.8
Bahrain
Kuwait
Qatar
Saudi Arabia
UAE
Conventional
Islamic
Industry


Fixed Assets to Assets Ratio
5.0
4.0
3.0
2.0
1.0
0.0
0.9
2.8
1.6
1.1
3.6
1.4
1.1
2.4
1.5
1.0
4.5
1.4
1.3
1.9
1.4
Bahrain
Kuwait
Qatar
Saudi Arabia
UAE
Conventional
Islamic
Industry


Internal Growth Rate
30.0
25.0
20.0
15.0
10.0
5.0
0.0
3.5
4.6
3.9
5.6
11.7
6.3
10.2
27.6
16.0
14.2
13.5
14.1
12.6
6.2
11.5
Bahrain
Kuwait
Qatar
Saudi Arabia
UAE
Conventional
Islamic
Industry

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