

## **Efficiencies Comparison of Islamic and Conventional Banks of Pakistan**

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### **Abstract**

This study investigates the comparison between the efficiency of Conventional and Islamic Banks of Pakistan. The history of conventional banks of Pakistan is very affluent in comparison to the Islamic banks. Islamic banking industry in Pakistan is in its early stages, very few banks are operating in this sector which performs pure Islamic banking. For this study, we take a sample of five Islamic and five conventional banks from (2005-2009). A DEA model is applied to measure the efficiencies of both banking sectors under CRS and VRS approach. The results show that the TE of conventional banks is better than the Islamic banks, but in CE and AE both sectors show a healthy competition. The t-statistics shows that there is no significant difference in mean efficiencies scores of conventional and Islamic banks except in year 2008.

**Keywords:** Data Envelopment Analysis (DEA), Technical Efficiency (TE), Allocative Efficiency (AE), Cost Efficiency (CE), Constant Return to Scale (CRS), Variable Return to Scale (VRS)

### **1. Introduction**

The role of financial sector in economic development of any nation is formidable. A very close relationship exists between growth in financial and economic sector. An efficient financial sector is necessary for better usage of financial resources for a nation. Economic development can be achieved only by using the available resources in a better way and hence improving the output performance.

When one talks about better utilization of any given resource the very basic concept that comes in ones mind is of "Efficiency." In order to allocate resources efficiently banks should be sound and efficient in identifying the right set of opportunities.

Pakistan's financial sector comprises of commercial banks-local and foreign, financial institutions, Islamic Banks, Investment Banks, micro finance banks, modarbas, Stock exchanges and insurance companies.

The objective of this research paper is to measure the efficiency of conventional based banking and Islamic banking and to understand the results obtained from the study conducted in later sections. But first we need to understand the terms "Conventional Banking" ,"Islamic Banking" their differences and "Banking efficiency".

Islamic Banking refers to banking system based on principles of Islamic law (Sharia) and its practical implementation through development of Islamic economics. It promotes risk sharing between Provider of capital (investor) and user of funds (Entrepreneur). Similar to conventional banking, rates of profits are aimed at maximization subject to Sharia principles. One of the important aspects of Islamic Banking system is inclusion of Zakat not only on customers but also on the individuals governing such a system. Islamic Banking system ensures an equal contribution to all parties involved, whether in profitability or in case of any loss incurred. Customers are always given status of partners or contributors in any financial transaction or Business deal. Pakistan has emerged as one of potential growing Islamic Banking market and till to date five Islamic banks are operational in accordance to Sharia principles and looking forward to seeing more of these in the future.

Conventional Banking is based on pure financial model, in which banks mainly borrow from savers and lend to enterprises or individuals. They make profit among the difference of rate of interests among borrowing and lending of money. Apart from these conventional banks also earn from the services they provide such as letter of credits , (In which they earn the profit based on services of intermediately party among importers and exporters of any said goods or services) etc. One drawback of conventional banking is that it prohibits from trading in the share holding of the borrowing concern. Because of fractional reserve system ,they produce derivative deposits which helps them multiply their low-cost resources .Conventional Banking sector of Pakistan is approximately based on 35 banks , which will grow faster in coming years .

The term "Efficiency" refers to the maximizing of outputs in such a way the input resources are less utilized. Banking efficiency is defined as difference between observed quantity of input and output variables with respect to optimal quantity of input and output variables. The efficient bank can achieve a maximum value of **one** in comparison to inefficient bank can reduce to level of **zero**.

In this research we are going to see the difference among efficiencies of Islamic and Conventional based banking system of Pakistan. As of current we are choosing **five** Islamic and Conventional Banks for time period of (2005-2009).

In following parts of current issue we will discuss previous research in the said topic, Data methodology followed by results and hence we draw a conclusion in final section of research.

## **2. Literature Review**

While there has been extensive literature examining the efficiency features of contemporary banking sector ,particularly the work on US and European banking markets and similarly in rest of world but work on Islamic banking is still in its infancy. However , this type of research is gradually changing as a number of recent studies have sought to apply various techniques to estimate efficiency of Islamic and Conventional based banking..

Iftekhar Hassan and Katherin Marton (2000) study the Development and Efficiency of Banking sector in a Transitional Economy in context of Hungarian experience.They used Econometric Frontier Approach (EFA) model to estimate profit and cost inefficiency of 154 banks for the period of (1993-1997) .The results indicate that the average bank could improve its cost and profit categories by 21.6 and 29.1 percent respectively , thus matching its performance with best practiced Banks.

Ana Canhoto, and Jean Dermine (2000) investigate the efficiency of Portuguese banks for the period of (1990-1995). They used non-parametric programming technique , Data Envelopment Analysis (DEA) model to estimate efficiency of 20 Banks which were divided into segments of Old Commercial banks , Old savings banks and New banks. The results indicate that over the period of time technological changes as calculated by DEA model proves that efficiency of new banks is risen by 59% as compared to old banking system.

Cavdet A. Denizer and Mustafa Dinc , and Murat Tarimcilar (2000) study the Banking efficiency in a pre and post-liberalization environment by drawing on Turkish experience. They used non-parametric programming technique , Data Envelopment Analysis (DEA) model to calculate efficiency changes in Banking sector w.e.f of liberalization program by ownership or by function for period of (1970-1994) for the Sample banks ranging 29 (1976-1977) to 53 (1991) .The results indicates that total efficiency scores by functionality or ownership suggests, liberalization didn't provide anticipated efficiency gains. None of efficiency scores displayed consistent increase after introduction of new policy.

Daniel stavarek (2003) study the commercial banks efficiency in the Visegrad region before joining the EU and also to consider differences in efficiency across the countries. He used non-parametric programming technique , Data Envelopment Analysis (DEA) model to estimate efficiency of different banks for period of (1999-2002) .The Sample sets for every year were 59 banks in 1999, 72 in 2000 , 70 in 2001 and 62 in 2002 respectively. The results indicates that average efficiency of banking intermediation in 2002 , the V4 banking industries can be distinguished as more and less efficient.Czech and Hungarian banking sectors were on average evaluated as the most efficient followed with a , non-marginal distance, by the Poolish banking sector. The Slovak banking sector stands apart with a substaintional gap in efficiency scores.

Donsyah Yudistira (2003) investigate the efficiency performance of 18 Islamic banks over the period of (1997-2000). He used non-parametric programming technique , Data Envelopment Analysis (DEA) model to estimate efficiency of 18 Islamic Banks for period (1997-2000) .The results indicates that Islamic banks shows considerable overall efficiency across the sample period. Year 2000 been the most efficient year having efficiency value (0.909) compared to (0.902,0.870 and 0.897) for years (1997,1998 and 1999) respectively. But the overall efficiency results indicates that overall inefficiency of 18 Islamic banks is considerable low (10% ) as compared to Conventional counterparts.Moreover , Islamic banks within Middle east are less efficient than their counterparts outside the region.Reason provided by author describes that Islamic banks outside the middle east region are relatively new and are governed by their respective regulators.

Hamim S. Ahmed Mokhtar , Naziruddin Abdullah and Syed M. Al-Habshi (2006) investigate the efficiency of full-fledged Islamic Banks , Islamic windows , and conventional banks in Malaysia.They used Stochastic Frontier Approach model to calculate technical and cost efficiency of 288 panel data from annual reports of 20 Islamic windows , 2 full-fledged Islamic Banks and 20 conventional banks for period of (1997-2003).The results indicates that Malaysian Islamic Banking industry , in terms of assets , deposits and Financial base , has grown very rapidly between (1997-2003) as compared to Conventional banking .Technical and Cost efficiencies In Islamic Banking are expected to provide significant insights to management and policy-makers with regard to optimal utilization of capacities and allocation of scarce resources in various banks.

Abdul Qayyum (2007) investigate the yearly efficiency scores of 20 banks for period of (1991-2005). He used non-parametric programming technique , Data Envelopment Analysis (DEA) model to estimate efficiency of 20 Banks for period (1991-2005). The results indicates that efficiency score of banking improves from 65% in 1991 to 87.6% in 2005.As a result of which banks are able to expand their core business activities , they strengthened their capital base, improved asset quality and profitibility during the year 2005.These developments clearly reflect the increased competition among banks and improvement in efficiency of banking sector.

Elana Loukoianova (2008) investigate efficiency and profitability of Japanese banks from (2000-2006). She used non-parametric programming technique ,Data Envelopment Analysis (DEA) model to estimate efficiency and profitability of city Banks, Trust Banks, Regional Banks and Tier II regional banks of Japanese Banks for (2000-2006). The results indicates both groups of regional banks appear to be inefficient both in terms of cost and revenue relative to the city and trust banks. Moreover ,total factor productivity of both groups of regional banks has been flat over the last six years. Trust banks demonstrates highest profitability in terms of return on assets and equity. While both groups of regional banks perform worse than city and trust banks. But on the whole Japanese banks have steadily improved since 2001.

Laurent Weill (2008) investigate the convergence in banking efficiency for European Union countries. Laurent applied stochastic frontier approach on banking efficiency measures for the period of (1994-2005). The results indicates that significant reduction of the gap between the least and the most efficient banking sector between 1994 and 2005. For example, in 1991 efficiency means range from 61% in Portugal to 78.90% in France , while they range from 80.32% in Spain up to 90.88% in Luxembourg in 2005. Thus generalized results suggests that overall improvement in banking efficiency for all investigated EU countries and thus impact a positive image on banking efficiency.

Kamaruddin et al (2008) investigates new perspectives on performance evaluation of Islamic Banking operations in Malaysia by measuring both cost and profit efficiency of full-fledged Islamic banks and Islamic windows operations of domestic and foreign banks. They used non-parametric programming technique ,Data Envelopment Analysis (DEA) model to estimate both cost and profit efficiency of 2 Islamic banks and 12 Islamic Windows Divisions for the period of (1998-2004). The results indicates that overall cost efficiency estimate is 0.695 , which is within range of scores found in other overseas studies, such as 55% in UK, it is far from satisfactory level since it suggests that an Islamic bank wastes around 30.5% of its inputs relative to best –practice bank. However, this efficiency score is relatively low in comparison to Bank-dominant economies such as Spain (.909), (.905) in France, and Malaysian conventional banks (0.942) . But on the positive side this score is very much comparable to another Malaysian study of Islamic banks (.698) and (.72) for conventional banks over (1993-2000). Which means Islamic banks in Malaysia did not improve much in their cost efficiency since 2004.

Sufian et al (2008) investigates the efficiency of the Islamic banking sectors in 16 MENA and Asian countries during the period of (2001-2006) . They used non-parametric programming technique ,Data Envelopment Analysis (DEA) model to estimate efficiencies of 37 individual Islamic banks of 16 MENA and Asian countries for the period of (2001-2006). The results indicates that Islamic banks mean technical efficiency has been on declining trend during the years 2001 to 2003 ,increased during year 2004 ,before declining again in years 2005 and 2006. Mean technical efficiency of selected Islamic banks during sample years were 65.4% which indirectly means they could save 34.6% of the inputs to produce same amount of outputs that they produced. Overall the results imply that during period of study , although Islamic banks have been operating at a relatively optimal scale of operations , they were managerially inefficient to exploit their resources to fullest.

Demet CANAKCI (2009) Investigates the effect of banking crises on performance of Banking efficiency through testing on Turkish experience before and after crises. He used Ratio analysis and non-parametric programming technique ,Data Envelopment Analysis (DEA) model to estimate the effect of banking crises on performance of Banking efficiency through testing on Turkish experience before and after crises for the period of (1991-2006) which is divided in to two sections i.e, (pre-crisis) which holds the years (1991,1992 and 1993) for 1994 crises and post-crisis period of (1995,1996 and 1997). Similarly for 2000-2001 crises pre-crisis period was (1997,1998 and 1999) and post-crisis period was (2004,2005 and 2006). The results indicates the efficiency changes during 1994 and 2000-2001 crises measured different results for ROA and ROE during post and pre crises sessions. However , results of ratio analysis regarding measuring ratios other than profitability (costs and risk) seem to be not significantly different in post –crisis period in 1994. This could be attributed to difference in handling 1994 and 2000-2001 in terms of banking sector. The results of DEA model also suggests that

post crises period has resulted in higher overall mean efficiency of Turkish commercial banks. We found evidence that business cycle theory holds in Turkish crises experience. The efficiency increase was quite significant in case of 2000-2001 crises because after 1994 crises there were not restructuring efforts for the banking sector.

Nobuyoshi et al (2010) investigates the technical efficiency of Japanese trust banks. They used stochastic distance function approach, which is suitable for analyzing complex trust banks but was never applied for Japanese trust banks. The sample in this study comprises traditional domestic trust banks, foreign-owned trust banks, trust subsidiaries and a few financial institutions but it excludes the commercial banks for the period of (1994-2005). The empirical results show that traditional domestic trust banks have experienced superior technical efficiency as compared with foreign-owned trust banks and trust subsidiaries. However, mean efficiency value of traditional domestic trust banks also tends to decrease after consolidation. As a result of study Authors drew that entry barriers in the Japanese trust banking has had no significant effect on the technical efficiency of new entrants. This can be possibly attributed to the inequality in the conditions of competition, such as the permitted range of trust banking business, which has benefitted the incumbent traditional domestic trust banks. In other words, although entry barriers were gradually relaxed, the complete liberalization of business areas was not necessarily implemented.

### **3. Methodology and Model Specification**

#### **3.1. Efficiency Measurement**

There are numerous ways of measuring efficiency of banks. Berger and Humphrey (1997) provide an extensive account of 130 studies that used different frontier efficiency analysis for 21 countries. The traditional method of approaching the efficiency measurement issue is the financial ratio analysis. But there is a lack of agreement on the relative importance of various types of input or output under this method. Moreover this method also doesn't consider the value of management actions and investment decisions that will effect future as opposed to current performance. It is thus a short run measure and may be inappropriate for describing the actual efficiency of a bank for a long run. In addition to that, there are parametric and non-parametric frontier analysis used in measuring x-efficiency of financial sector firms. The parametric approach includes stochastic frontier analysis, the free disposal hull, while the non-parametric is the data envelopment analysis (DEA).

#### **3.2. Data Envelopment Analysis (DEA Model)**

The (DEA) approach refers to the ability of banks to control cost and generate revenues and was developed by Charnes, Cooper and Rhoades (1978). The (DEA) is a linear programming based technique for measuring relative efficiency and management performance of firms where presence of multiple inputs and outputs makes comparison difficult. It uses observed values of inputs and outputs and attempts to find which of the firms in the given sample determine an envelopment analysis.

In (DEA) most efficient bank (with the score of 1) doesn't necessarily generate maximum output level but it does indicate that it has tendency of generating best practice outputs among the rest of firms in the given sample. Firms lying on the surface of are deemed to be the efficient and receive value of unity whereas; firms falling below surface level are deemed as inefficient and capture the value less than unity. Hence, all deviations from the estimated frontier represent inefficiency. The (DEA) measure compares each of firm in the sample with the best practice ones known as peers or role model.

DEA serves as an alternative approach to regression technique. Since regression is based on central tendencies, while DEA is based on extreme observations. Moreover, the merit with the DEA is that unlike regression analysis, it doesn't require a prior assumption about the analytical form of the production function, instead it derives the best production function solely on the basis of observed values making it impossible to misspecify the production technique.

The DEA model allows for the treatment of constant as well as variable returns to scale. The constant return to the scale (CRS) is advantageous as it allows for comparison between small and larger firms/banks in a situation where frequency distribution is skewed due to the presence of small and large banks in the sample. In such case the use of variable returns to the scale (VRS) raise the possibility that larger banks would appear as efficient in the sample for the simple reason that there are no truly efficient banks ( Berg et al., 1991). This study will use both CRS and VRS for the analysis.

### 3.3. Data and Model Specification

The data source for the research is the “*Banking Statistics of Pakistan 2004-2008*” published by the state bank of Pakistan. This is an annual report, which presents the major information about all commercial and Islamic banks in Pakistan including public, private and foreign sector. Information required for analysis of given research consists of five Islamic and five Conventional based commercial banks for the period of (2004-2008). All the financial data used for analysis are in terms of Pakistani rupees (in thousands).

The efficiency of the banks can be measured either by using the operating approach or the intermediate approach. Under formal approach, the bank is perceived to be the producer of services for its account holders and is known as the cost/revenue management perspective. The intermediate approach however, consider bank as entities, which convert and transfer financial assets between surplus and deficient units acting as an intermediary better called a mechanical perspective. This study uses the intermediation approach as it enables financial institute like bank to be prescribed as a manufacturing units, converting inputs into outputs e.g. deposits in to loans and investments.

Inputs used in the study are deposits (D) and capital (K) while the outputs represent portfolio investment (I) and Loans & advances (L). The choice of inputs and outputs was influenced by extant literature on DEA application in banking industry, data availability and theoretical considerations. Deposits are the overall resources available to the banks for carrying their activities like lending and investments and are the one of the main inputs in the study. Capital is an important factor of production for a bank unlike the other business activities and is proxied by the book value of premises and fixed assets, net of depreciation. The price of capital (P1) was arrived by dividing the total expenditures on premises and fixed assets by their total value. Cost of servicing the deposits is the interest paid on deposits. Hence, input price for deposits (P2) was derived from total sum of interest paid on deposits divided by total value of deposits. The outputs chosen for this study constitute one of major activities of banks that channel their funds into investments or lending for profitability motives.

As mentioned above, sample size for given study consists of five Islamic banks operational as of now and five conventional based commercial banks. List of these financial institutes are as follows:

List	Islamic Banks	Conventional Banks	Inputs Used	Outputs Used
1	Bank Islamic Pakistan Limited	National Bank of Pakistan	Deposits (D)	Investments (I)
2	Dawood Islamic Bank Limited	Allied Bank Limited	Capital (K)	Loan & Advances (L)
3	Dubai Islamic Bank Pakistan Limited	Habib Bank Limited	P1(Price of capital)	
4	Emirates Global Islamic Bank Limited	MCB Bank Limited	P2(Price of deposits)	
5	Meezan Bank Limited	United Bank Limited		

## 4. Results

In order to provide baseline for comparison of efficiencies of Islamic and Conventional Based Banking sector of Pakistan for the given sample size, We first compute efficiency scores for Both Islamic and Conventional Based banks from 2005 to 2009. The results are presented in Table 1, 2, 3 and 4 (See Annexure).

The results shows that the average input oriented TE, CE and AE of Islamic and Conventional Banks for 2005 are 50.0, 50.0, 51.0 and 89.0, 36.0, 38.0 percent respectively using CRS approach, similarly, TE, CE and AE of Islamic and Conventional Based Banks for 2006 are 79.0, 58.0, 62.0 and 99.0, 83.0, 83.0 percent respectively. In 2007 TE, CE and AE of Islamic and Conventional Based Banks are 78.0, 55.0, 66.0 and 91.0, 53.0, 62.0 percent respectively. Similarly, in 2008 TE, CE and AE

of Islamic and Conventional Based Banks are 68.0, 64.0, 93.0 and 95.0, 47.0, 49.0 percent respectively and in 2009 TE, CE and AE of Islamic and Conventional Based Banks are 79.0, 40.0, 46.0 and 82.0, 48.0, 56.0 percent respectively.

Similarly, the results shows that the average input oriented TE, CE and AE of Islamic and Conventional Based Banks for 2005 are 78.0, 51.0, 52.0 and 100.0, 50.0, 50.0 percent respectively using VRS approach. TE, CE and AE of Islamic and Conventional Based Banks for 2006 are 91.0, 69.0, 70.0 and 100.0, 85.0, 85.0 percent respectively. In 2007 TE, CE and AE of Islamic and Conventional Based Banks are 97.0, 66.0, 69.0 and 100.0, 80.0, 80.0 percent respectively. Similarly, in 2008 TE, CE and AE of Islamic and Conventional Based Banks are 93.0, 85.0, 90.0 and 100.0, 49.0, 49.0 percent respectively and in 2009 TE, CE and AE of Islamic and Conventional Based Banks are 92.0, 61.0, 66.0 and 98.0, 72.0, 73.0 percent respectively.

We use t-statistics for the comparison of mean efficiencies of Islamic and conventional banks over the period of 2005 to 2009 at 10% level of significance. The p-values 0.07 for TE and 0.04 for AE under the assumption of CRS approach shows a significant difference in the means of Islamic and Conventional banks efficiencies in 2008. In remaining years 2005, 2006, 2007 and 2009, there is no significant difference between means of TE, AE and CE of Islamic and Conventional banks (see Table -3). Similarly, the p-values 0.09 for TE and 0.04 for AE and 0.07 for CE under the assumption of VRS approach shows a significant difference in the means of Islamic and Conventional banks efficiencies in 2008. In remaining years 2005, 2006, 2007 and 2009, there is no significant difference between means of TE, AE and CE of Islamic and Conventional banks (see Table -4).

Apart from test Statistics and Efficiency analysis, Graphical representations for Efficiency levels (TE, CE and AE) are attached in Annexure as well. See Annexure for details.

## **5. Conclusion**

Financial Sector in Pakistan has gone through a number of changes during last two decades. These include 1) liberalization of bank opening policy which resulted with the reemergence of private banking sector in the economy 2) strengthening the role of controlling authorities such as State bank of Pakistan and the Security Exchange Commission of Pakistan.

Financial sector reforms have also changed the ownership structure of banking sector of Pakistan. This is the very reason of improved efficiency levels of Conventional Banks. In this study we test Efficiency levels of Conventional Banking for the given Sample for CRS and VRS modes of DEA model, results shows that TE (Technical Efficiency) for Conventional Banks for both modes is better than Islamic Banking, One of the reasons of high TE scores for conventional Based Banking is improving technology with the time and also been in operations for more than four decades.

In year wise comparison of efficiencies values for Conventional and Islamic banks except TE, Islamic banks show a healthy competition with Conventional banks for CE and AE values. This is one of the signs for economy that Islamic banks are on the horizon of improving trends every year

However, one of the limitations of Islamic banks is short market operations and lack of awareness in general public. In spite of the fact that Islamic Banking is still in its early ages of operations in Pakistan, but its premium bank Meezan performed at par of Conventional banks in term of efficiencies.

There is no doubt in this fact that need of Conventional and Islamic Banking System is necessarily for modern era, and Islamic Banking is improving day by day in various countries such as Malaysia as one of the prime Islamic Banks Foundation countries. Similarly, Pakistan is also focusing on improvements in Islamic Banking sector and State Bank already implemented Islamic Window Operations within existing Conventional based banking.

Overall outcome of this study is the efficiencies level of conventional and Islamic banks are improved over the period of time. The Conventional banks perform better than the Islamic banks in term of technical efficiency but in term of cost and allocative efficiencies Islamic banks give tough time to conventional banks. The t-statistics results show there is no significant difference in the mean efficiency scores of Islamic and Conventional banks over the sample period except in 2008. There are various other dimensions and aspects needs to be explored, which do include efficiency of banks as production unit, economic efficiency of banks in Pakistan. This requires a series of studies in the future.

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## Annexure

Table -1: CRS Model

Bank Type	No. of Banks	Years	T.E		C.E		A.E	
			Mean	St.Dev	Mean	St.Dev	Mean	St.Dev
Islamic Banks	2	2005	0.5	0.71	0.5	0.71	0.51	0.7
	3	2006	0.79	0.36	0.58	0.48	0.62	0.42
	5	2007	0.78	0.29	0.55	0.41	0.66	0.33
	5	2008	0.68	0.33	0.64	0.35	0.93	0.08
	5	2009	0.79	0.23	0.4	0.36	0.46	0.34
	<b>Overall Mean</b>		<b>0.71</b>	<b>0.38</b>	<b>0.54</b>	<b>0.46</b>	<b>0.64</b>	<b>0.37</b>
Conventional Banks	5	2005	0.89	0.22	0.36	0.42	0.38	0.41
	5	2006	0.99	0.01	0.83	0.36	0.83	0.36
	5	2007	0.91	0.12	0.53	0.3	0.62	0.37
	5	2008	0.95	0.11	0.47	0.37	0.49	0.36
	5	2009	0.82	0.17	0.48	0.38	0.56	0.4
	<b>Overall Mean</b>		<b>0.91</b>	<b>0.13</b>	<b>0.53</b>	<b>0.37</b>	<b>0.58</b>	<b>0.38</b>

Table-2: VRS Model

Bank Type	No. of Banks	Years	T.E		C.E		A.E	
			Mean	St.Dev	Mean	St.Dev	Mean	St.Dev
Islamic Banks	2	2005	0.78	0.31	0.51	0.69	0.52	0.68
	3	2006	0.91	0.16	0.69	0.53	0.7	0.51
	5	2007	0.97	0.08	0.66	0.38	0.69	0.38
	5	2008	0.93	0.1	0.85	0.22	0.9	0.15
	5	2009	0.92	0.15	0.61	0.4	0.66	0.39
	<b>Overall Mean</b>		<b>0.9</b>	<b>0.16</b>	<b>0.66</b>	<b>0.45</b>	<b>0.69</b>	<b>0.43</b>
Conventional Banks	5	2005	1	0	0.5	0.47	0.5	0.47
	5	2006	1	0	0.85	0.34	0.85	0.34
	5	2007	1	0	0.8	0.44	0.8	0.44
	5	2008	1	0	0.49	0.4	0.49	0.4
	5	2009	0.98	0.04	0.72	0.44	0.73	0.43
	<b>Overall Mean</b>		<b>0.996</b>	<b>0.01</b>	<b>0.67</b>	<b>0.42</b>	<b>0.68</b>	<b>0.42</b>

Table-3: Test Statistics- Comparison of Means Between Islamic and Conventional Bank (CRS)

Years	TE	AE	CE
2005	0.29	0.43	0.42
2006	0.22	0.25	0.5
2007	0.21	0.44	0.47
2008	0.07**	0.04**	0.25
2009	0.4	0.35	0.39

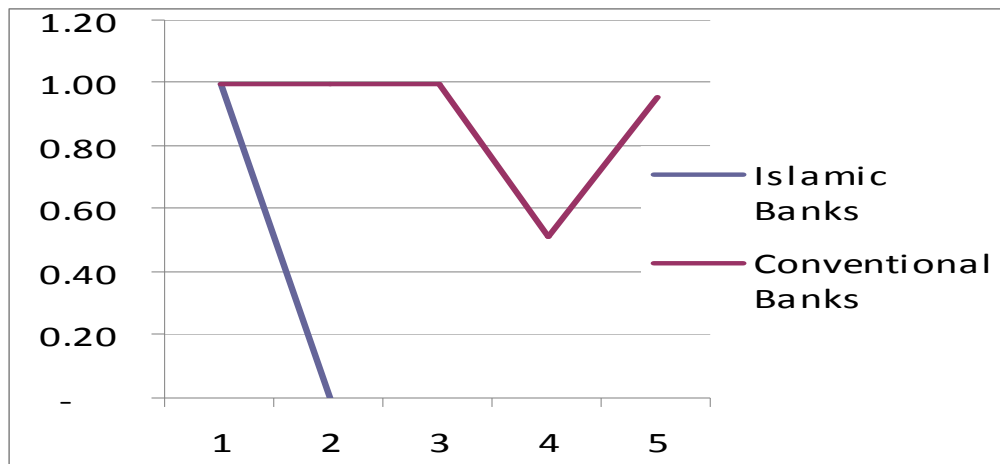
Note: \*\* shows the significant p values at 10% level of significance-

Table-4: Test Statistics- Comparison of Means Between Islamic and Conventional Bank (VRS)

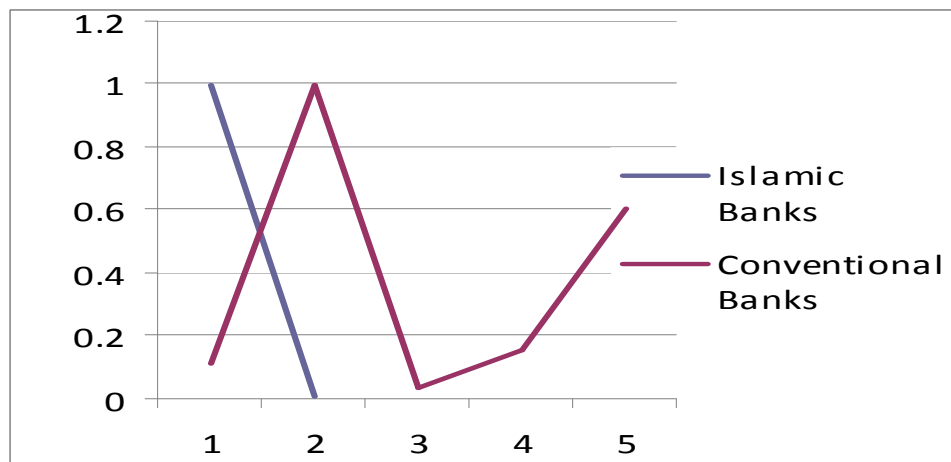
Years	TE	AE	CE
2005	0.25	0.49	0.5
2006	0.21	0.34	0.34
2007	0.19	0.33	0.3
2008	0.09**	0.04**	0.07**
2009	0.21	0.38	0.34

Note: \*\* shows the significant p values at 10% level of significance-

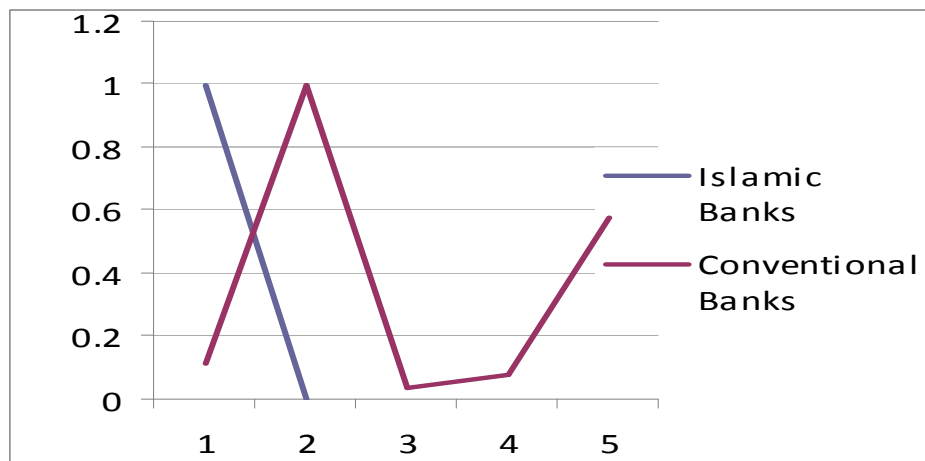
**CRS Model DEA Analysis Graphs  
2005 (TE)**



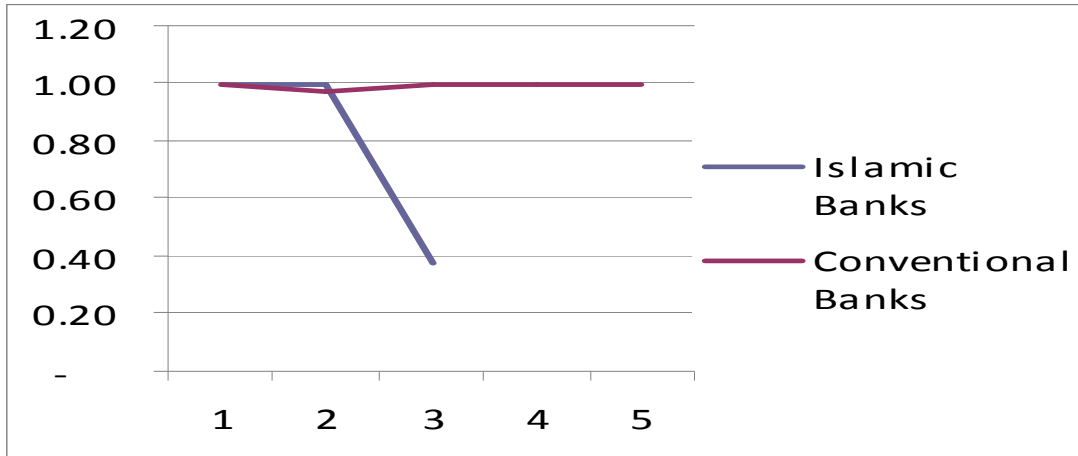
**2005 (AE)**



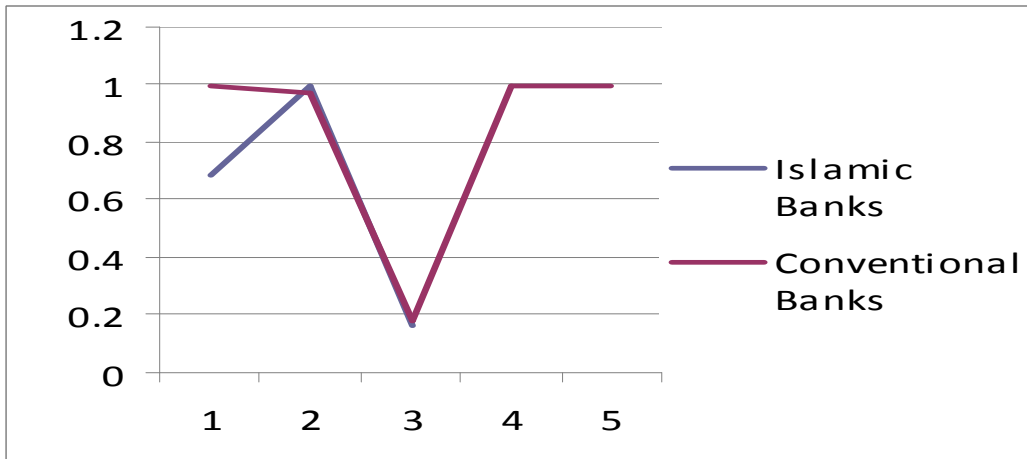
**2005 (CE)**



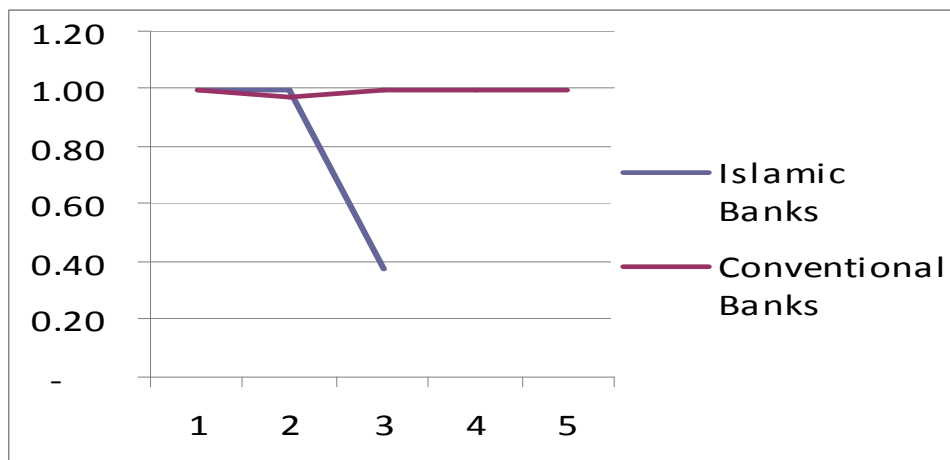
2006 (TE)



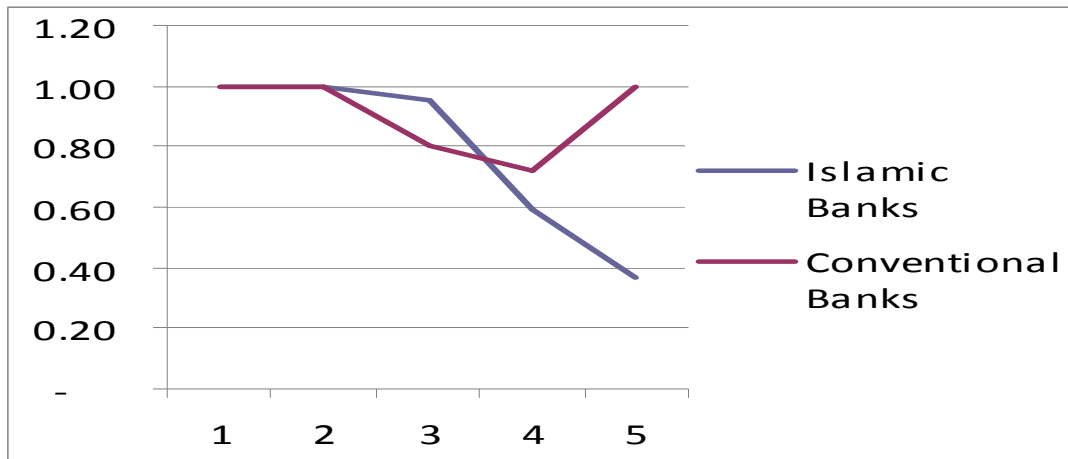
2006 (AE)



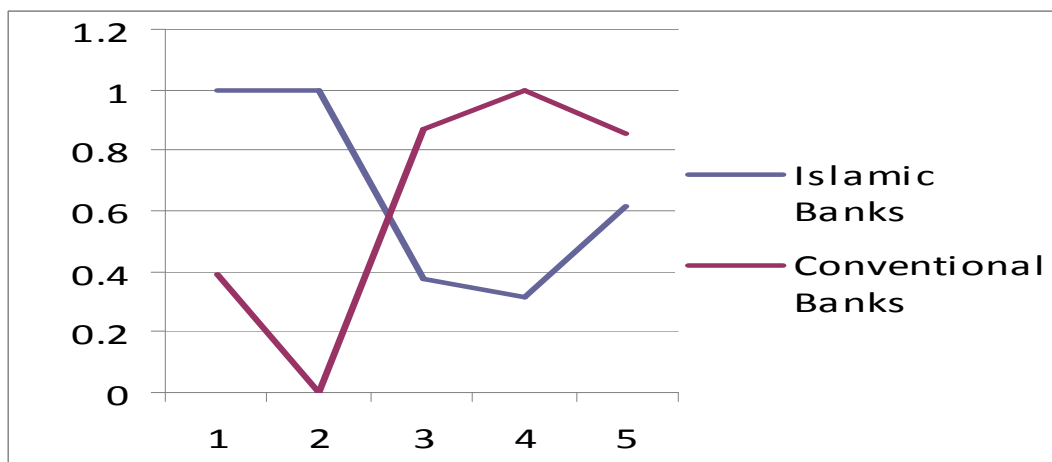
2006 (CE)



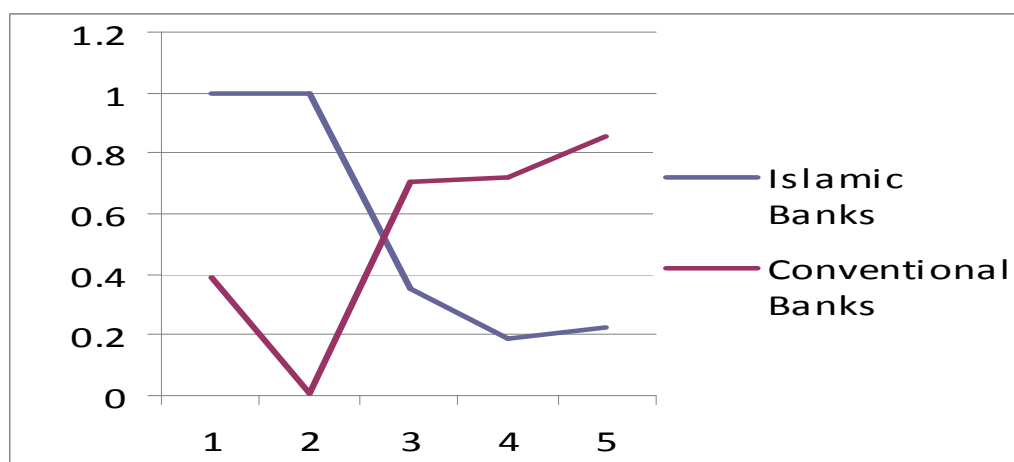
**2007 (TE)**



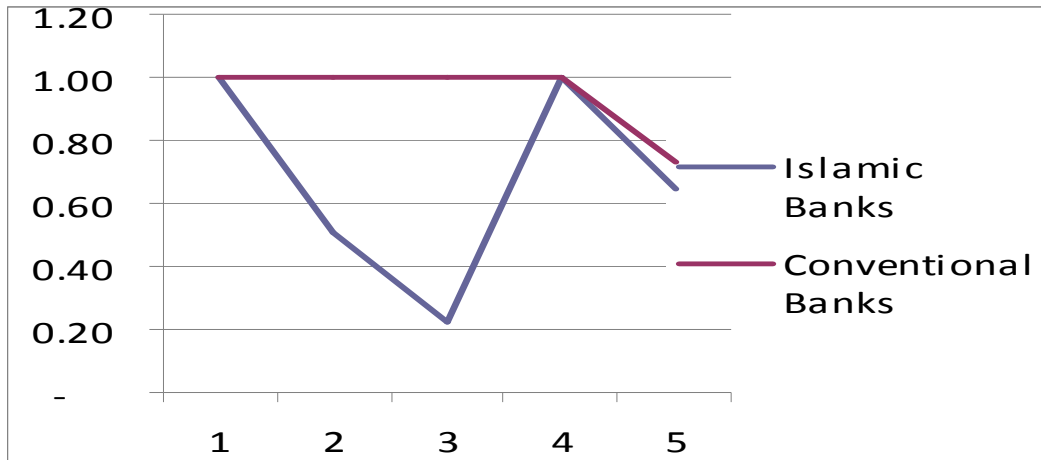
**2007 (AE)**



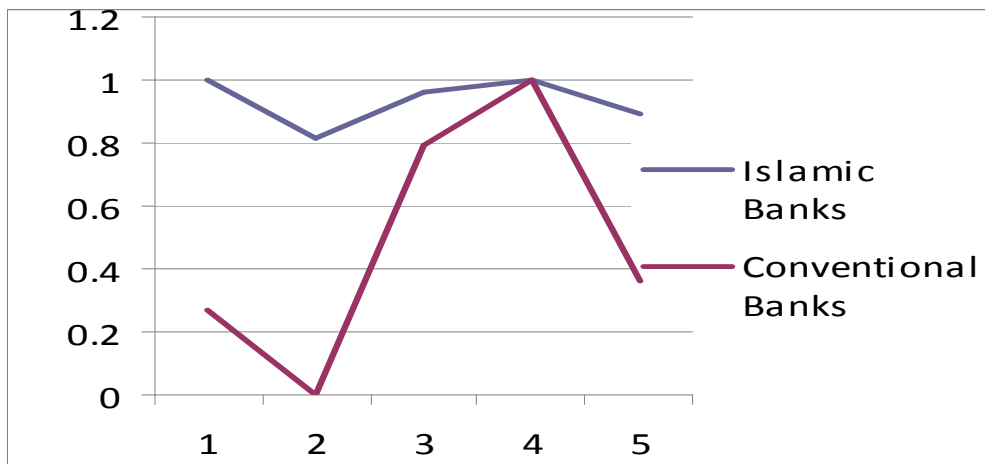
**2007 (CE)**



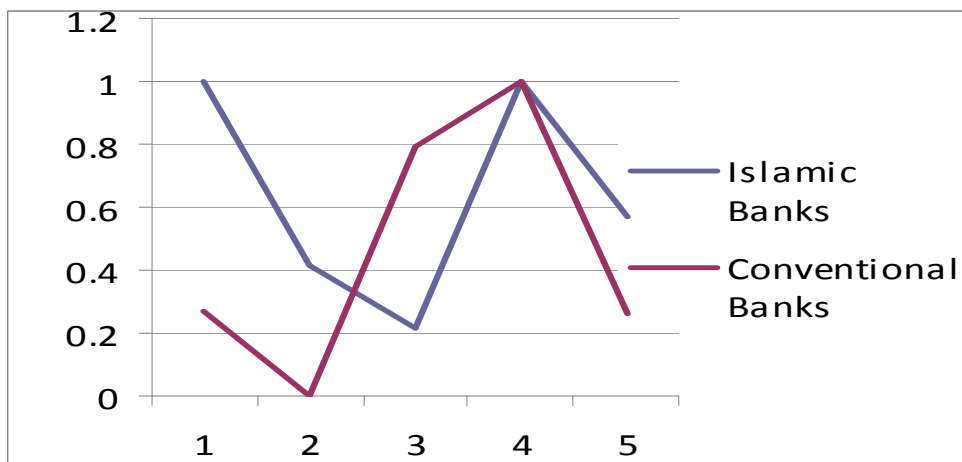
2008 (TE)



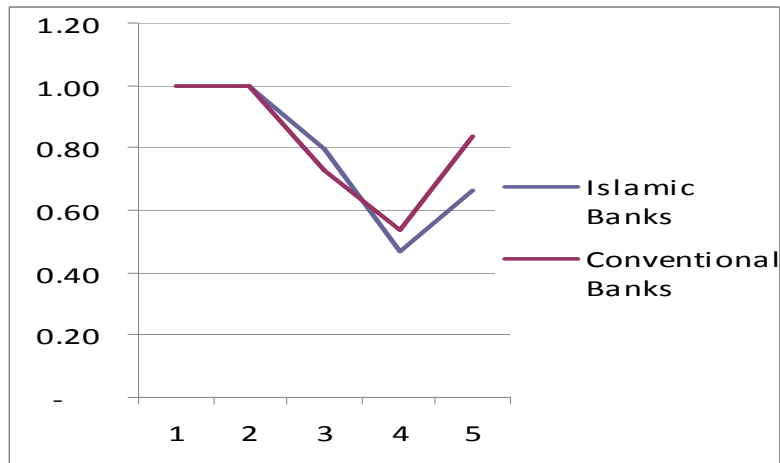
2008 (AE)



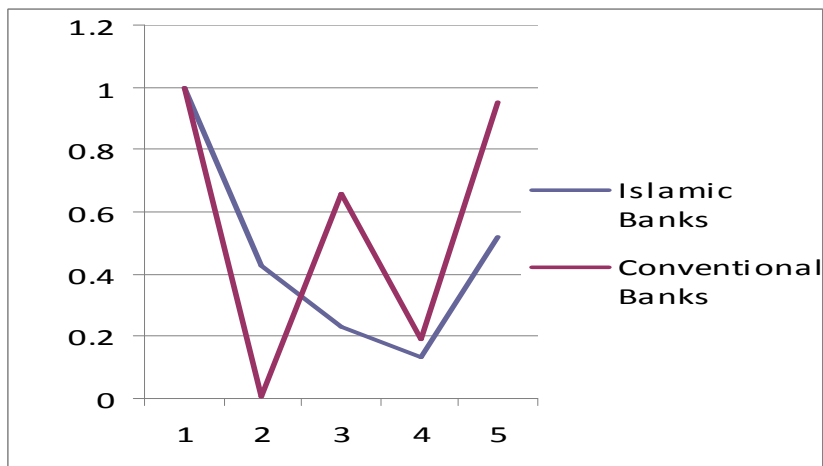
2008 (CE)



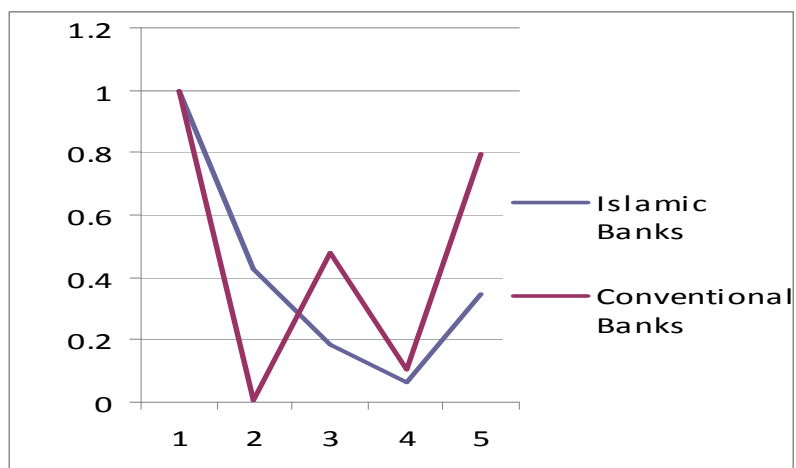
**2009 (TE)**



**2009 (AE)**

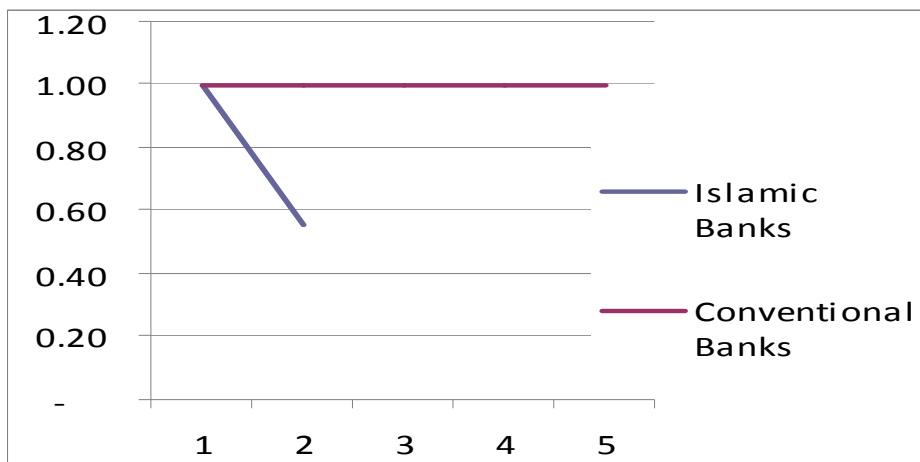


**2009 (CE)**

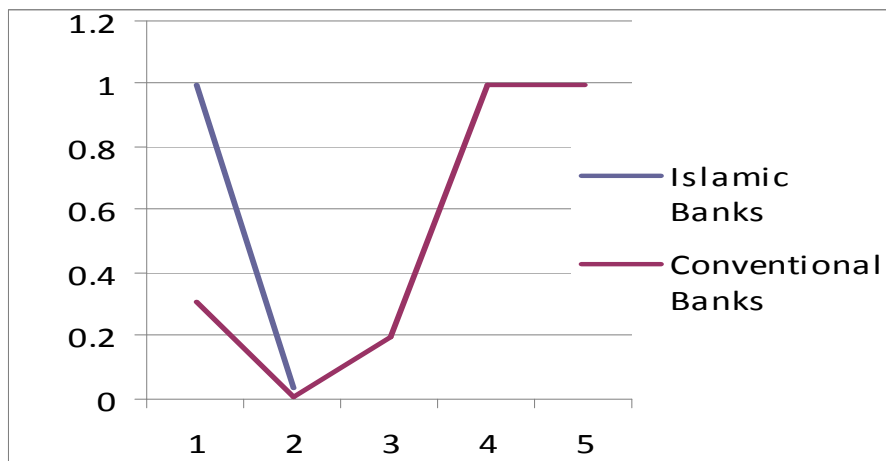


## VRS Mode DEA Analysis Graphs

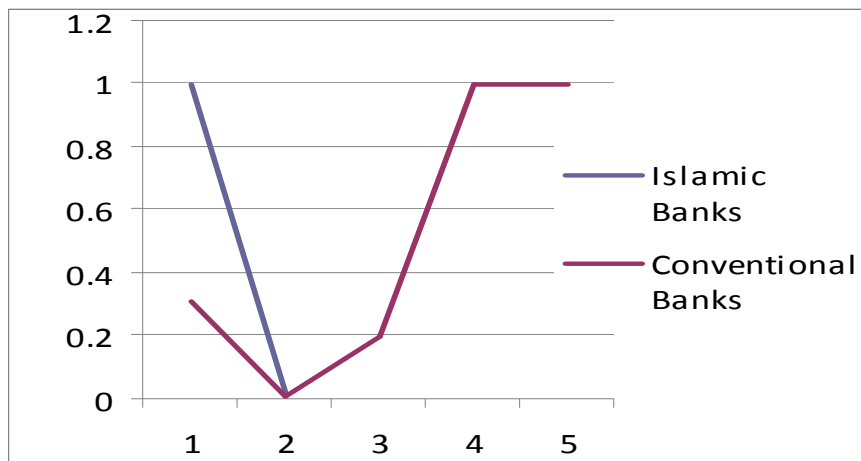
2005 (TE)



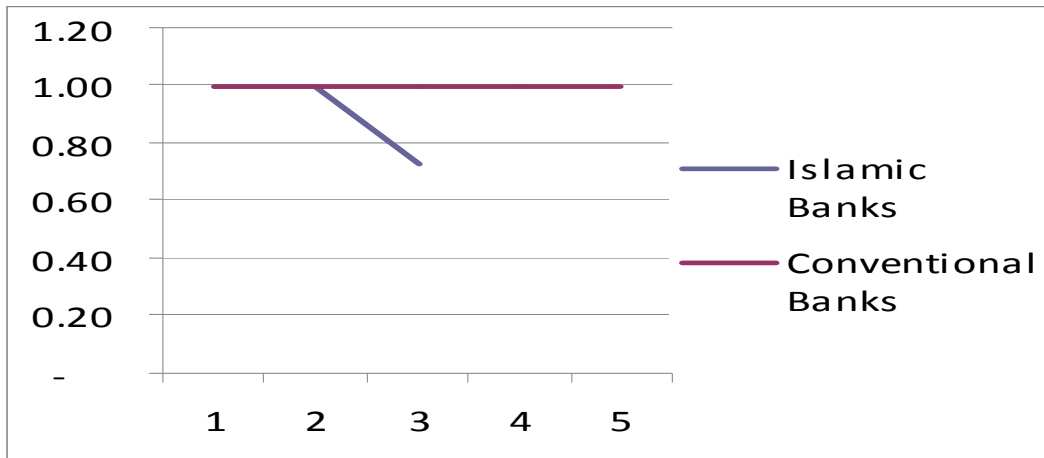
2005 (AE)



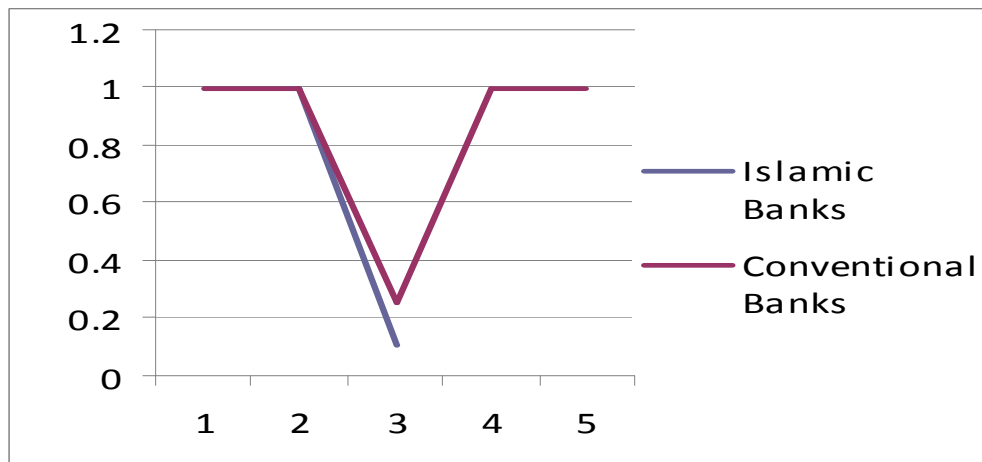
2005 (CE)



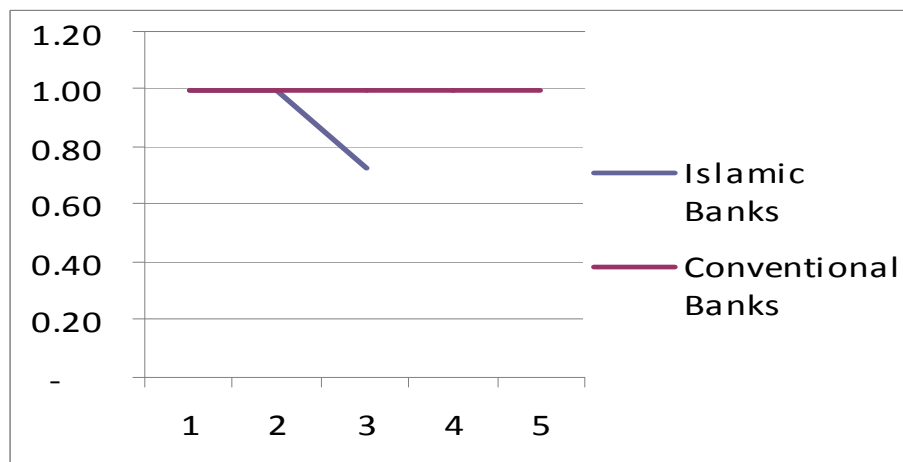
**2006 (TE)**



**2006 (AE)**

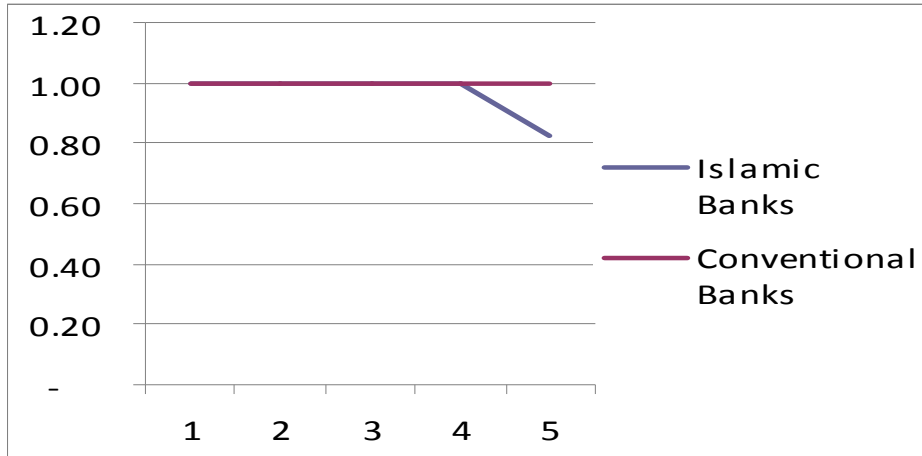


**2006 (CE)**

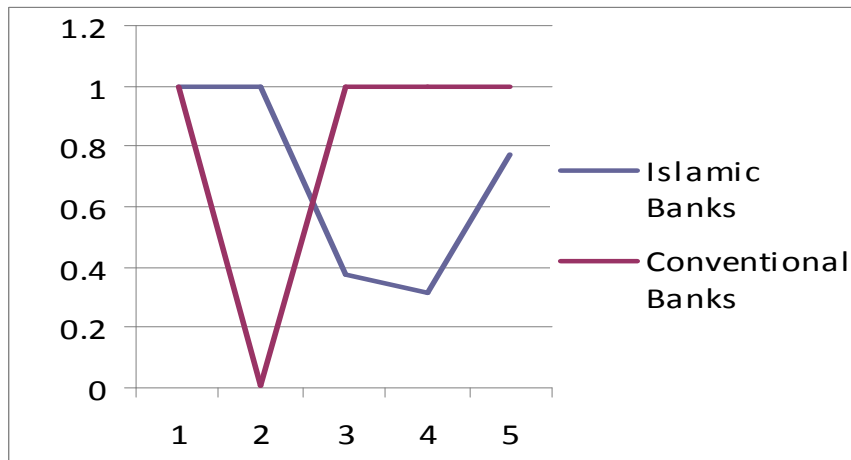




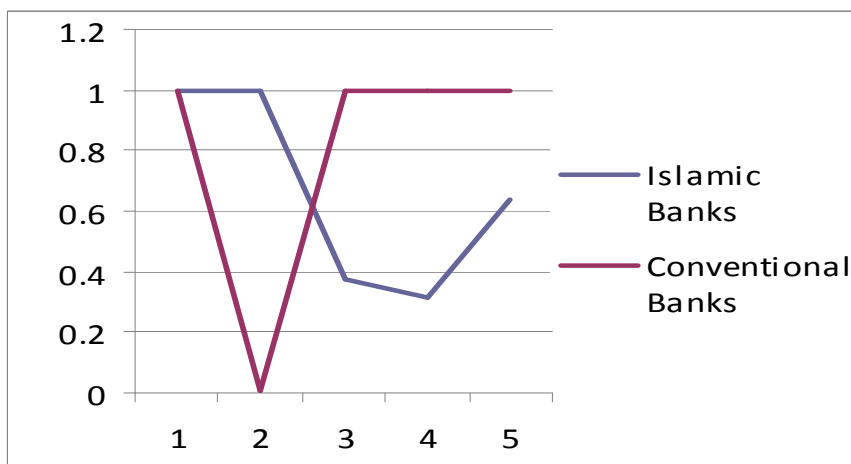
2007 (TE)



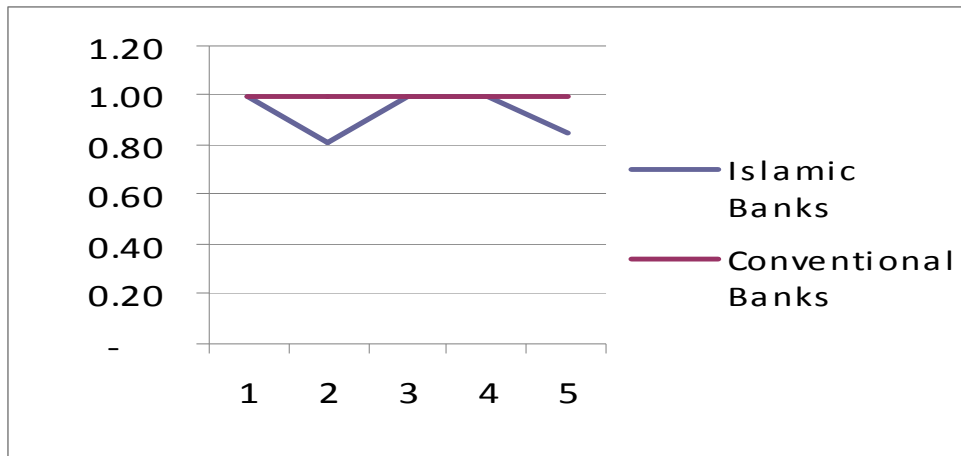
2007 (AE)



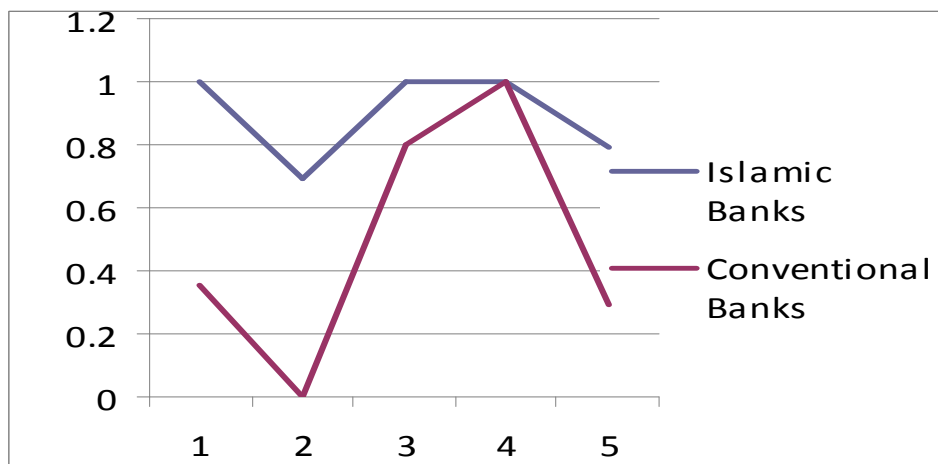
2007 (CE)



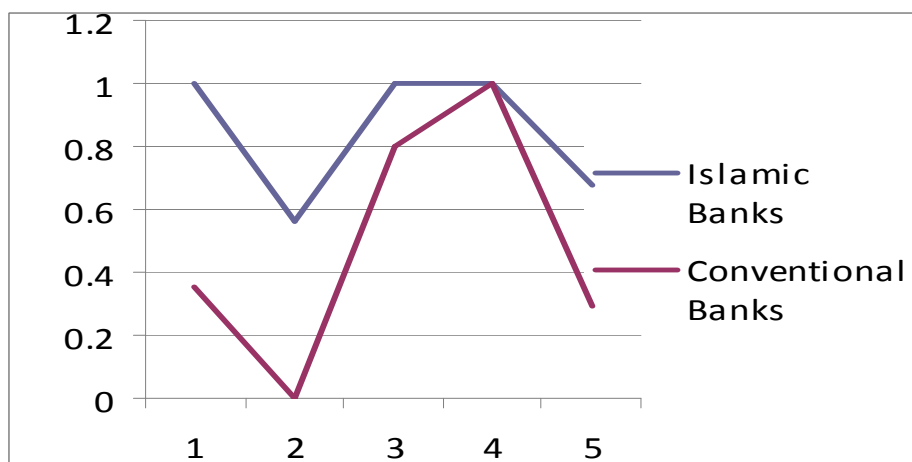
**2008 (TE)**



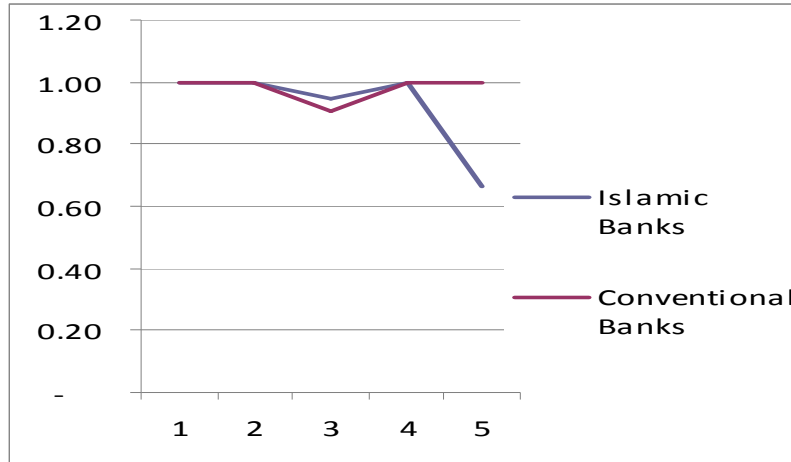
**2008 (AE)**



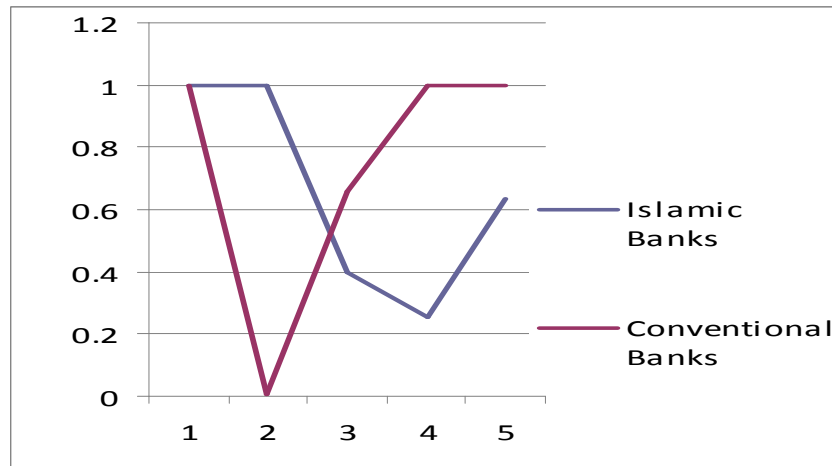
**2008 (CE)**



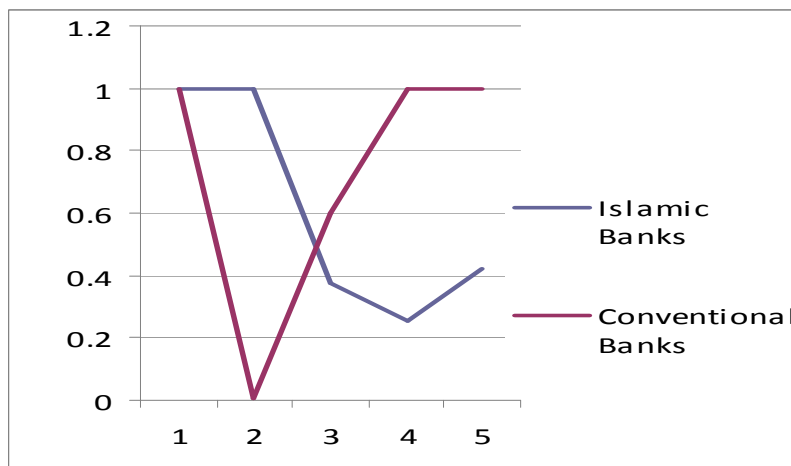
**2009 (TE)**



**2009 (AE)**



**2009 (CE)**



This paper examines the performance of Islamic banks (IBs) and conventional banks (CBs) during the recent global crisis by looking at the impact of the crisis on profitability, credit and asset growth, and external ratings in a group of countries where the two types of banks have significant market share. Our analysis suggests that IBs have been affected differently than CBs. Factors related to IBs' business model helped limit the adverse impact on profitability in 2008, while weaknesses in risk management practices in some IBs led to a larger decline in profitability in 2009 compared to CBs. Islamic banks do not have independence to perform transactions without the supervision of sharia board that ensures the secure investment. These research findings show better understanding of value co-creation in the modern services. Keywords. Islamic banking Service system Value co-creation. This is a preview of subscription content, log in to check access. Notes. Acknowledgement.Â Shahid H, Rehman R, Niazi GSK, Raoof A (2010) Efficiencies comparison of Islamic and conventional banks of Pakistan. *Int Res J Financ Econ* 1(49):24â€“42Google Scholar. 2. Fazlan S, Mohammad A (2007) The efficiency of Islamic banks: empirical evidence from the MENA and Asian countries Islamic banking sectors. Six newly formed Islamic banks in Pakistan and six conventional banks of the same size were selected for the purpose of comparison. Data relating to their performance and profitability were collected from primary and secondary sources from 2006 to 2008. The ratio analysis technique was applied to measure the performance of key indicators of both Islamic and conventional banks.Â Islamic banks outperform conventional banks in assets, deposits, financing, investments, efficiency, and quality of services and recovery of loans. It predicts the bright future of Islamic banking in Pakistan. 1. INTRODUCTION Islamic banking emerged as a practical reality and started functioning in 1970s. Since then it has been growing continuously all over the world.