# Are Islamic Banks' Non-bank Deposits Shock Resistant? A Comparison with Conventional Banks: Evidence from Bahrain

Abdus Samad<sup>1</sup>

#### Abstract

First, the paper empirically examines the growth of nonbank deposit liabilities (NBDL) of the Islamic banks of Bahrain during the pre-global financial crisis (PREGFC) and the global financial crisis (GFC) to determine whether the global financial crisis (GFC) has had any impact on that growth. The paper finds that the mean of nonbank deposits growth for the Islamic banks during the PREGFC and GFC was 17 percent and 30 percent, respectively. The parametric tests—t-test, Welch F-test, and ANOVA—failed to reject the null hypothesis that there was no difference in nonbank deposit growth between the PREGFC and the GFC, suggesting that the global financial crisis had no impact on the Islamic banks' NBDL. Second, the paper compares the impact of GFC on nonbank deposit growth between Islamic banks and conventional banks. The result of the hypothesis test, mean difference, between the conventional banks and the Islamic banks during the pre GFC period showed significant difference between them, which suggest that the global financial crisis had a more negative impact on the conventional banks' nonbank deposit growth than on that of the Islamic banks. Plausible reasons for Islamic banks' shock resistance are explained.

**JEL Classification**: C13, C23, C33, G21 **Keywords**: Nonbank deposit, parametric test, Islamic Bank, Bahrain

# **1** Introduction

From 2009 to 2011, conventional banks faced serious challenges from the U.S. subprime lending crisis and recession. The U.S. housing market collapsed, unemployment exceeded 10 percent, and the growth rate of the economy was negative. The most devastating effect was seen in the financial sector. One hundred forty banks went bust in 2009 and 157 banks

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<sup>&</sup>lt;sup>1</sup>Ph.D.Professor of Economics Department of Finance and Economics Utah Valley University 800 W University PKY Orem, UT 84097 USA Phone: 801-863-8368 Fax: 801-863-7218

were wiped out in 2010 (Time: January 2012). Such a large scale bank failure had not occurred in the financial history of the United States since the Great Depression (Samad, 2013).

During the same period (2009-2013), there was phenomenal growth in Islamic Banking. The deposits and assets of Islamic banks grew globally. According to the Ernest & Young firm's estimates, "Islamic banking assets grew at an annual rate of 17.6% between 2009 and 2013 and will grow by an average of 19.7% to 2018" (Economist: September 13<sup>th</sup> -19<sup>th</sup>, 2014). Paul Koster, Chief Executive of DFSA said the Islamic finance industry was set to grow from \$700 billion to \$4 trillion by 2013, and despite the global financial crisis (GFC), Islamic banking was still projected to grow by 15-20 percent annually (Koster, 2009). Given the global credit crisis and fears of economic recession, Apps (2008) claimed that many investors reportedly considered the Islamic bank to be more reliable than conventional financing.

Given Ernest & Young's claim that "Islamic banking asset grew at an annual rate of 17.6% between 2009 and 2013" when there were large bank failures in the U.S. and around the world, a natural hypothesis is that the nonbank deposits of Islamic banks are global shock insulated. In other words, Islamic banks nonbank deposits were shock resistant to the global financial crisis (GFC).

This paper empirically explores Bahrain's Islamic banks' total nonbank deposits to investigate the hypothesis that the GFC had no impact on the nonbank deposit growth of the Islamic bank vis-à-vis conventional banks.

Bahrain was chosen for two reasons. First, the growth of Islamic banking in Bahrain, in particular, has been remarkable, with average total deposits in this segment jumping from BD 1108.3 million in 2000-2006 to BD 5989.96 million in 2007-2013. The market share of Islamic banks correspondingly increased from 1.8 percent of total banking assets in 2000 to 13.3 percent in August 2012. Table 1 provides the comparison of nonbank deposit growth of the Islamic banks and the conventional banks during the PRGFC and the GFC.

Islamic banks provide a variety of financial products, including *Murabaha*, *Ijara*, *Mudaraba*, *Musharaka*, *Al Salam* and *Istitsna'a*, restricted and unrestricted investment accounts which have been appropriately modified to comply with Shari'a principle.

Second, Bahrain is the world's largest Islamic financial hub (Qorchi, 2005; Samad, 2005). Bahrain has rapidly become a global leader in Islamic finance in recent years. Currently, there are seven Islamic insurance companies (Takaful) and two Re-Takaful companies operating in the Kingdom. In addition, Bahrain is at the forefront of the market for Islamic securities (*sukuk*), including short-term government *sukuk* as well as leasing securities.

The survey of literature shows that there has been no empirical research on whether the global financial crisis had any impact on the growth of nonbank deposit liabilities of Islamic banks vis-à-vis conventional banks. There are claims (Koster, 2009) that the growth of Islamic banks will continue to grow. But there is no empirical evidence. So, the paper is motivated, firstly, to examine whether the nonbank private deposits growth of the Islamic banks was insulated from the global shock. Secondly, the paper examines the comparative impact of the GFC on the deposit growth of both the Islamic banks and the conventional banks to see whether there were differences of impact on them.

The paper applies parametric tests in determining whether the global financial crisis had any impact on the nonbank liabilities, deposits in particular, of Islamic banks' vis-à-vis conventional banks.

Finding empirical support for the hypothesis that Islamic banks' NBD remain unhurt and stabilized against the global financial shock as well as the result of comparative impact on

the conventional banks vis-à-vis Islamic banks are important contributions of this paper to the banking literature as well as a lesson for the patron of the banks—the conventional banks and the Islamic banks.

This paper is organized as follows: Section 2 is a short survey of literature. Section 3 outlines the unique characteristics of Islamic bank products that differentiate them from conventional bank products and underlie shock resistance. Section 4 describes the data, methodology, and model. Empirical results and conclusions follow in Section 5.

#### **2** Islamic Banking and Its Product Features

Islamic banks are a different breed of financial institution. First, all activities including the banking business are guided by the Islamic religion. As "riba" (which is interpreted as interest) is prohibited in the Quran, the Islamic banks do not deal with any interest in bank business. The prohibition of interest gives rise to the development of unique financial products by the Islamic banks such as profit and loss sharing in equity financing contract called Musharakha and Mudrarab as well as debt financing contract called *Murabahah*, *Bai Baithaman Jail', bai al-salam*, and *Ijarah*.<sup>2</sup>

#### **3** Survey of Literature

The resurgence of Islamic values and the growth of Islamic banking led to great interest and rapid growth of Islamic banking literature. The extent of past scholarly research on Islamic banking includes Khan (1983), Mannan (1968), Iqbal and Mirakhor (1987), and Ahmad (1984). These authors discuss the theoretical development of institutional issues and concepts, including Arabic concepts, and principles that are subject to interpretation.

Khan (1986) provided an important theoretical model of Islamic banking and compared the model with conventional banking. He argued that Islamic banks "treat deposits as shares and accordingly do not guarantee their nominal value" (p. 19). Since profit and loss is equity, account depositors would be treated like shareholders of a bank and, therefore, "no official reserve requirement would be necessary for these investment deposits" (p.20-21). Chapra (1982) and Siddiqi (1983) argued for Islamic banking as the primary alternative to interest based conventional banking. They also argued that Islamic bank was an efficient way to obtain economic growth without getting involved interest.

Khan (1983) provided a good description of the development of Islamic banks in Egypt, Kuwait, UAE and Pakistan. Kazarian (1993) compared two Egyptian Islamic banks with Egyptian conventional banks, taking ratios of long term financing and found that the two Islamic banks occupied the third position in Egypt during 1979-1990. Aggarwal and Yousef (2000) examined Islamic banks' mode of operations and found that the profit and loss sharing mode of Islamic banks was minimal and the agency problem of Islamic banks was more severe. Samad, Gardner, and Cook (2005) studied the Bahrain and Malaysia Islamic banking finances and found that the *Muderabah* and *Musharak*, the distinct mode of Islamic banks that distinguished Islamic banks from the conventional banks, accounted for less than

<sup>&</sup>lt;sup>2</sup>See Samad, Gardner, and Cook (2005) and Chong and Liu (2009) for definition and features.

4 percent of total financings. Debt type financing such as *Murabah* and *Ijarah* appeared to be most popular and dominant of all other modes of financing.

Samad (2004) compared the performance of Islamic banks and conventional commercial banks of Bahrain with respect to (a) profitability, (b) liquidity, and (c) capital management. Eleven financial ratios were compared for the period 1991-2001 which showed that there was no difference in profitability and liquidity performance between Islamic and conventional banks. Fayed (2013) compared the profitability, liquidity, credit risk, and solvency performance of three Egyptian Islamic banks with six conventional banks during 2008-2010 and found evidence of the superiority of the conventional banks' performance over Islamic banks.

Chong and Liu (2009) examined Malaysian Islamic banks and found that the profit and loss sharing mode of finance was minimal. The growth of Islamic banking was largely driven by the Islamic resurgence rather than by an advantage of the profit and loss sharing mode of production.

Cevik and Charap (2011) examined the empirical behavior of conventional bank deposit rates and the rate of return of Islamic banks in Malaysia and Turkey and found that there was long run co-integration between the series.

Samad (2013) investigated whether the global financial crisis (GFC) has had an impact on the efficiency of Islamic banks by using the time varying Stochastic Frontier function on the Islamic banks of 16 countries. The efficiencies of Islamic banks were estimated using the Cobb-Douglas production function which showed that the global financial crisis had had no impact on banks' efficiency. Mean efficiencies between the pre global financial crisis and the post global crisis were estimated at 39 and 38 percent respectively and the difference was not statistically significant.

The survey of literature shows that there were no studies as to whether the Islamic banks' NBD were immune from the global shock.

# 4 Data and Methodology

#### 4.1 Data

Data of non-bank deposits (NDG) of the Islamic and the conventional banks of Bahrain during 2001-2013 were yearly and were obtained from the central bank of Bahrain. The author calculated the growth of nonbank deposits. A descriptive statistics of the nonbank deposit growth of the Islamic banks and the conventional banks during 2001- 2013 is provided in Table 1.

Bank Type	Mean	Median	Maximum	Minimum	S.D.	Jarque Bera
Conventional Banks	0.12	0.09	0.39	0.02	0.10	7.67 (0.02)
Islamic Banks	0.24	0.13	0.78	0.02	0.23	3.13 (0.13)

Table 1: Descriptive Statistics of NBD Growth<sup>3</sup> Rate Conventional Banks and Islamic Banks During 2000-2013\*

\*()= indicates probabilities of jarque Bera.

Table 1 shows the phenomenal growth rate of Islamic banks' nonbank deposit mobilizations. The average growth rate of nonbank deposit mobilizations for Islamic banking was 24 percent during 2000 -2013. On the other hand, the growth rate of the conventional banks' nonbank deposit mobilization was 12 percent (i.e. half that of the Islamic banks) during 2000 -2003. Although the minimum growth rate of nonbank deposits was the same (2 percent) for the conventional and the Islamic banks, the maximum growth of the Islamic banks (78 percent) was higher than that of the conventional banks. Similarly, the median growth rate of the nonbank deposits of the Islamic banks was higher than that of the conventional banks. The probability of Jarque Bera associated with the deposit growth of the Islamic banks suggests that the growth series of the Islamic banks is normally distributed as opposed to the non-normal distribution of the conventional banks.

# 4.2 Methodology

Two periods, the pre global financial crisis (PREGFC) and the global financial crisis (GFCP), were investigated in determining the impact of the global financial crisis on the nonbank deposit growth. The period 2000-2007 was considered the pre-global financial crisis period (PREGFC) and the period 2008-2013 was considered the global financial crisis period (GFCP).

The growth of NBDL of the conventional banks and the Islamic banks during the PREGFC and GFC are presented in Table 2 for deriving the appropriateness of statistical test method.

FREGEC and GFC						
	Conventional Banks		Islamic Banks			
	PREGFC	GFC	PREGFC	GFC		
Mean	0.15	0.08	0.18	0.30		
Median	0.10	0.07	0.12	0.21		
Maximum	0.39	0.18	0.43	0.78		
Minimum	0.03	0.02	0.02	0.06		
Jarque Bera	1.32	0.83	1.28	1.06		
(probability)	(0.51)	(0.65)	(0.52)	(0.58)		

Table 2: NBD Growth of Islamic Banks and Conventional Banks During the PREGEC\* and GEC

\*PREGFC= Pre Global Financial Crisis, GFC= Global Financial Crisis

<sup>&</sup>lt;sup>3</sup>Growth rate of nonbank deposit is estimated= (Deposit<sup>t</sup>-Deposit<sup>t-1</sup>)/Deposit<sup>t-1</sup>

A comparison of the nonbank deposits growth of the Islamic banks and the conventional banks during PREGFC and GFC periods shows differences. (1) The growth of nonbank deposits of the conventional banks declined from 15 percent to 8 percent during the GFC. (2) The growth of nonbank deposits of the Islamic banks increased during the GFC from 18 percent to 30 percent. (3) The probability of the Jarque Bera suggests that both series (conventional banks' nonbank deposits and Islamic banks' nonbank deposits) are normally distributed. The null hypothesis of non-normal distribution is rejected. The implication of normal distribution of both series suggests the appropriateness of parametric tests such as t-test, ANOVA and Welch F-test. Non-parametric tests such Kruskal Wallis and the Wilcoxon rank test are not required.

Three hypotheses were tested. **First**, the deposit growth of Islamic banks between the PREGFC and GFC was tested to see whether the global financial crisis had has an impact on the nonbank deposits of Islamic banking in Bahrain. That is, the null hypothesis was tested against the alternative hypothesis.

Null hypothesis,  $H_{0:}$   $\mu_{DepPREGFC} = \mu_{DepGFC}$ 

(1)

(3)

Alternative hypothesis  $H_a$ :  $\mu_{DepPREGFC} \neq \mu_{DepGFC}$ 

There is no difference in nonbank deposit growth mobilizations of Islamic banks between the PRECFC and the GFC where  $\mu_{DepPREGFC}$  = mean of nonbank deposit growth during the pre global financial crisis and  $\mu_{DepGFC}$  =mean of nonbank deposit growth during the global financial crisis.

Alternative hypothesis,  $H_a$ :  $\mu_{DepPREGFC} \neq \mu_{DepGFC}$ : There is a difference in nonbank deposit growth mobilizations of Islamic banks between the pre global financial crisis and the post global financial crisis period.

The rejection of the null hypothesis ( $H_0$ :  $\mu_{DepositpreGFC} = \mu_{DepositpostGFC}$ ) that there is no difference in deposit growth mobilization concludes that the global financial crisis had an impact on the deposit growth mobilizations of Islamic banks. On the other hand, if the null hypothesis cannot be rejected, it can be concluded that deposit mobilizations are the same between the two periods which suggests that the global financial shock has had no impact on Islamic banks deposit mobilizations. The deposits of Islamic banking of Bahrain are insulated from the global financial crisis.

**Second**, the PREGFC and the GFC nonbank deposit growth of the conventional banks and the Islamic banks was tested to determine whether there were differences in impact of the global financial crisis on the convention banks and the Islamic banks.

The null hypothesis and the alternative hypothesis for the pre global financial crisis were:

 $H_{0:} \mu_{\text{CONBKDepPREGFC}} - \mu_{\text{ISBKDepPREGFC}} = 0$ (2)

H<sub>a:</sub>  $\mu_{\text{CONBKDepPREGFC}}$  -  $\mu_{\text{ISBKDepPREGFC}} \neq 0$ 

Where  $\mu_{\text{CONBKDepPREGFC}}$  = mean of nonbank deposit of the conventional banks during the global financial crisis period.  $\mu_{\text{ISBKDepPREGFC}}$  = mean of nonbank deposit of the Islamic banks during the global financial crisis period.

The failure to reject the null hypothesis suggests that there was no difference in the growth of nonbank deposit mobilizations between the conventional banks and the Islamic banks.

**Third**, the impact of the global financial crisis on the nonbank deposit growth of the Islamic banks and the conventional banks was tested by the parametric test as:

H<sub>0:</sub>  $\mu_{\text{CONBKDepGFC}}$  -  $\mu_{\text{ISBKDepGFC}}$  =0

H<sub>a:</sub>  $\mu_{\text{CONBKDepGFC}}$  -  $\mu_{\text{ISBKDepGFC}} \neq 0$ 

The failure to reject the alternative hypothesis indicates that there was a difference in the nonbank deposit growth between the conventional banks and the Islamic banks during the GFC. The GFC had an impact on the deposit growth.

If the mean difference is negative and statistically significant, it suggests that the nonbank deposit growth of the conventional banks was adversely affected by the GFC compared to that of the Islamic banks.

# **5** Empirical Findings

The results of the empirical tests for the nonbank deposit growth of Islamic banks between the pre-global financial crisis and the global financial crisis are presented in Table 3.

Table 3: Test for Equality of Means for Islamic Banks' NBD between the PRGFC and the GFC Periods

Test for Equality of Means Between Series Sample: 2000 2013 Included observations: 14

Method	df	Value	Probability
t-test Satterthwaite-Welch t-test* Anova F-test Welch F-test*	11 9.228964 (1, 11) (1, 9.22896)	1.112740 1.168105 1.238189 1.364470	0.2895 0.2721 0.2895 0.2721
*Test allows for unequal cell variances Analysis of Variance			
Source of Variation	df	Sum of Sq.	Mean Sq.
Between Within	1 11	0.064326 0.571471	0.064326 0.051952
Total	12	0.635797	0.052983

**Category Statistics** 

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
ISBKPREDEPG	7	0.308346	0.279277	0.105557
ISBKPOSTDEPG	6	0.167242	0.143872	0.058736
All	13	0.243221	0.230181	0.063841

An examination of Table 3 shows the mean nonbank private deposit mobilizations of the Islamic banks between the pre-global financial crisis and post-global financial crisis were 30.8 percent and 16.7 percent respectively. The large probability value (0.65) associated with the t-test, ANOVA F-test, and Welch –F test fails to reject the full hypothesis, suggesting that there was no significant difference in the nonbank deposit growth between the two periods. The failure to reject the null hypothesis confirms that the global financial crisis has had no impact on the deposit mobilizations of Islamic banks. The results of the comparison for nonbank deposit growth between Islamic banking and conventional banking during the PREGFC and the GFC are presented in Tables 4 and 5.

Table 4: Equality Test for NBD Growth between Islamic Banks and Conventional Banks During the PREFC

Method	df	Value	Probability
t-test	12	-1.321311	0.2110
Satterthwaite-Welch t-test*	8.341764	-1.321311	0.2215
Anova F-test	(1, 12)	1.745862	0.2110
Welch F-test*	(1, 8.34176)	1.745862	0.2215

Sample: 2000 2013 Included observations: 14

Test allows for unequal cell variances

Analysis of Variance

Source of Variation	df	Sum of Sq.	Mean Sq.	
Between Within	1 12	0.081920 0.563069	0.081920 0.046922	
Total	13	0.644989	0.049615	

**Category Statistics** 

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
CONBKPREDEP	7	0.155357	0.125893	0.047583
ISBKPREDEP	7	0.308346	0.279277	0.105557
All	14	0.231851	0.222743	0.059531

Results of t-test, ANOVA, Welch-test, and Welch F-test fails to reject the null hypothesis that there was no difference in the nonbank deposit growth between the conventional and the Islamic banks during the PREGFC period.

The result mean difference test, not reported, confirms the same result.

Table 5: Equality Test for NBD Growth Between Islamic Banks and Conventional Banks During the PREFC

		Mean				
GFCCONBKDEP						
GFCISBKDEP						
combined	12	.1266336	.0324137	.1122843	.0552916	.1979756
diff		081216	.0629543		2214868	.0590549
diff = mean(CONBKPOSTDEPG) - mean(ISBKPOSTDEPG) t = -1.2901						
Ho: diff =	0			degrees	of freedom =	= 10
Ha: d	iff < 0		Ha: diff !	= 0	Ha:	diff > 0
Pr(T < t)	= 0.1030	Pr( 5	T   >  t  = 0	0.2261	Pr(T > t)	) = 0.8870

The mean difference test for the nonbank deposit growth between the conventional banks and the Islamic banks suggests that the mean growth of nonbank deposits of conventional banks was significantly less than that of the Islamic banks at the significant level of 10 percent. The result suggests that the global financial crisis had a more adverse impact on the deposit growth of the conventional banks than on that of the Islamic banks.

There are many plausible reasons why the Islamic banks' nonbank deposit growth was stable and shock resistant. First, the customers of the Islamic banks are devout Muslims. They are not concerned about the interest income. Since interest, currently called riba, is prohibited, the devout Muslims do not look for any alternative banking. So, the fluctuation of interest caused by the global financial crisis did not bother them and had no impact on the nonbank liabilities of the Islamic banks.

Second, the Islamic banks' unique mode of production—profits and loss sharing—in *Muderaba* deposit mobilizations minimizes asymmetric information and adverse selection. Unlike in conventional banking, Islamic banks have full access to project information and project management, which minimizes moral hazard and adverse selection.

### **6** Conclusions

The paper examined the nonbank deposit growth of the Islamic banks and the conventional banks during the pre-global financial crisis (200-2007) and the global financial crisis period (2008-2013) of Bahrain to determine whether the global financial crisis had, first, any impact on the Islamic banks' nonbank liabilities and, second, whether there was any

difference of impact between the Islamic banks' and the conventional banks' nonbank deposit growth.

Results of the t-test, ANOVA, Welch-test, and Welch F-test failed to reject the null hypothesis that there was no difference in the nonbank deposit growth of the Islamic banks between the PREGFC and the GFC. The result suggests that the GFC had no impact on the nonbank deposit growth of Islamic banks.

The results of the t-test, ANOVA, and Welch t-test (Table 4) suggest that there was no significant difference in nonbank deposit growth between the conventional banks and the Islamic banks during the PRGFC. However, the result of mean difference test (Table 5) of the impact of GFC between the conventional banks and the Islamic banks showed that the mean difference is statistically significant. The result suggests that the GFC had a more significant adverse impact on the conventional banks' nonbank deposit growth than on the Islamic banks.

Islamic bank customers' devotedness to Shariah principles, their disregard to interest, and the banks' unique mode—profits and loss sharing—in nonbank deposit mobilizations provide plausible explanations why the Islamic banks' nonbank deposits were stable and shock resistant.

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