Casual Link Between Islamic and Conventional Banking: Evidence From Turkish Banking Sector

Mutahhar Ertürk
Borsa İstanbul

Serkan Yüksel
Borsa İstanbul
CAUSAL LINK BETWEEN ISLAMIC AND CONVENTIONAL BANKING: EVIDENCE FROM TURKISH BANKING SECTOR

Mutahhar Ertürk* and Serkan Yüksel

Abstract

This study aims to shed light on the risk structure in the presence of Islamic banking, in particular in Turkey. Islamic banking and conventional banking are considered to be different kinds of sources for funding. Returns in the conventional banking expected to be heavily influenced by the interest rate in the money market. However, Islamic banking returns are interest-free so that interest rate changes are not expected to affect the deposit returns in Islamic banks. Interest rates in the economy are a proxy to highlight the general risk level of the economy. By looking at the causal relationship between the deposit returns of both Islamic banks and conventional banks, it is possible to address the different types of banking in the general risk structure of the economy. This is the first study to address the mentioned difference in banking sector in Turkish economy. This paper tries to identify the direction of causality between Islamic and conventional banking term deposit rates by means of Granger Causality. Also, Granger Causality test results will guide to explore the Islamic and conventional banking deposit return linkages.

Keywords: Islamic Banking, Systematic Risk, Granger Causality, Term Deposit Rates

JEL Classification: G12; G14; G15; Z12

*Corresponding Author. Tel: +9021222982171; Email: mutahhar.erturk@borsaistanbul.com
Borsa İstanbul, Research Department, Reşitpaşa Mah., Tuncay Artun Cad., 34467, İstanbul, TURKEY

**Borsa İstanbul, Research Department, Researcher

^PhD. candidate, Department of Economics, İstanbul Bilgi University

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I. Introduction

Recent crisis and Islamic banking

2008 global finance crisis has been considered as the major challenge to the modern theory of finance model. The lesson that we have learn from the crisis is that the risks where not priced by the market conditions and the moral hazard problem of the market can put the market in the hands of a crisis so easily. The effects of the crisis has been so deep that it is even compared to the long prolonged “Great Depression” and named as “Great Recession”. Financial crisis was a consequence of the collapse of financial assets management. These
experiences led academicians and practitioners to questioning fundamentals of the financial system. Recent financial crisis manifested to be consequence of the weakness of the financial system; hence the unconventional financing models became popular. Especially, Islamic banking gained popularity in research due to fact that contagion effect in the 2008 crisis spread by banking system (Hasan and Dridi (2010)). Crisis has induced a series of questions on the stability of conventional banks and led to a renewal of Minsky (1986)’s critics about the inherent instability of the fractional-reserve banking. Many studies tried to compare Islamic banking model to the conventional banking, since Islamic banking model could potentially increase the quality of funds preserved into the finance system. These studies generally focus on assessing the hypothesis that the Islamic banks have greater resilience to the financial shocks compared to the conventional banks (Abdulle and Kasim (2012)). For some specific regions, studies presented empirical evidence for the stability of the Islamic banks during the recent financial crisis (Kassim and Majid (2010)).

Since the adjective “Islamic” allow one to track back the Islamic finance to the years of Prophet Muhammad (p.b.u.h.), modern experiment of Islamic finance has started after the 1963 and it gained momentum in recent years¹. Sharia based and compliant assets reached to 939$ billion and Islamic banks operate over sixty countries with more than 600 Islamic funds available (Walkshaul and Lobe (2012), Zaman and Movassaghi (2001)). Main unconventional part of Islamic finance is risk sharing rather than offering flat interest rate. Islamic banks play the role of intermediary by sharing loss and profits with the depositors, hence equity-like nature of the savings might help to reduce systematic risk in the economy. Islamic baking provides services under profit and loss sharing under Sharia law and this system allow both

parties to share risk. Due to asset backed product structure, Islamic banks are not exposed to some type of assets which are considered to be risky such as financial derivatives (Hassan and Dridi (2010), Zeitun (2012)). However, Islamic banks share similarities in technicalities for instance they take the role of an intermediary and trustees of the people’s money (Dusuki (2008), Ghayad (2008)).

This study concentrates on the understanding the relationship between conventional and Islamic banking to determine the causality link. Our study contributes to the growing literature of Islamic finance by comparing two kind of banking with the specific scope of addressing the credit risk structures. We present comparative analysis on the impact of the global finance crisis of 2008. In this study, pre and post crisis term deposit returns of conventional and Islamic banks are considered. Term deposit rates (TDRs) are considered to be center of financial activities (Kaleem and Isa (2012)) so that our analysis study gives important implications on the risk structure. If Islamic banks are not affected much from the financial crisis, this situation can be taken as an implication that Islamic banks are less prone to the systematic risk. Therefore, if the Islamic banks are less prone to systematic risks, then there is greater possibility that the Islamic banking deposits is heavily influenced by its own historical rate of returns rather than the existing rate of returns of conventional banks (Ariff (1988), Kaleem and Isa (2012)).

In order to see the causality link between conventional banks and Islamic banks to test for the hypothesis that Islamic banks are less prone to the systematic risks, we apply VAR model and use Granger causality. A possible causality shift can be evidence for the different risk structure of the Islamic banking. We extend our analysis by looking at the causality

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2 For other islamic principles other than profit-loss sharing, see Zeitun (2011), Olson and Zoubi (2008), Chong and Liu (2008)
before and after the crisis. By doing so, we are able to track the effects of financial crisis on both conventional and Islamic banks. First we take the difference of TDRs of both conventional and Islamic banking TDRs since there is significant evidence for the presence of the unit root in the conventional banking TDRs. For the whole 2005-2013 period, our findings indicate that conventional banking TDRs Granger cause the Islamic banking TDRs whereas the reverse relationship is not supported by the Granger causality. However this relationship inference is spurious due to the presence of the unit root in the conventional TDRs highly influence results. So we study our sample for before and after crisis periods. When the pre and post crisis periods are considered, first result of ours is that: there is a clear picture which highlights that the Islamic banking TDR differences do not Granger cause conventional banking TDR differences for every maturity level. So we present an evidence for the hypothesis that the changes in the Islamic banking profit-loss sharing (PLS) ratios do not affect the changes in the interest rates offered by the conventional banks. Second result is somewhat is not clear as the first one. For the pre-crisis period, the TDR differences of the conventional banks do not Granger cause the TDR differences of the Islamic banks. But, TDR differences of the conventional banks do not Granger cause the Islamic TDR differences for 6 and 12 month periods, whereas it Granger causes for 1 and 3 months periods.. VAR estimations and the impulse response functions altogether shows that dynamic relationship between Islamic banking and conventional banking does not last for long period and it is not persistent. Hence, our results conclude that there is no stable dynamic relationship between the TDR movements of these two banking systems.

**Islamic Finance and Applications**

Main difference of the Islamic banking relies in the roots of the Islamic finance which is based on fiqh al-

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Fiqh al-

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all social interactions. Under the Shari’a legal code, business transactions should be fair, transparent and contractual between agents. Moreover, business transactions must be halal and free from riba (usury), gharar (uncertainty), maisir (gambling). Shari’a law does not only restrict interest rate but supports socially responsibility and set up rules to highlight ethics in business transactions (Ariss (2010)). Though it is generally visualized that the prohibition of interest rate is conflicting the time value of money concept, it is common to all Abrahamic faiths. Shari’a law specifically determines the code of conduct for all regulations in the in finance environment. Recent 2008 crisis due to weak regulatory environment appealed the attention on Islamic banking. Academicians and policy makers point out the advantages of Shari’a based financial products. In addition, Shari’a based products becoming more attractive who demand for financial services that are consistent with their religious beliefs (Beck, Kunt, Merrouche (2013)). So, literature on the Islamic banking has gained momentum only recently.

Early studies on Islamic banking before modern finance development generally involve discussion and information on the terminology. Khan (1983) and Mirakhor and Khan (1987) made assessment on Islamic banking. Following studies mainly focused on the issue as complacent component to due to rising capital market in the Muslim masses (Ariff (1988)). Fast pace growth of Islamic finance and banking is influenced by the structural reforms in financial systems, global integration of financial markets and introduction of innovative Islamic products (Zaher and Hassan (2002)). Hence, Islamic banking received attention from the academicians and they have compared various aspects of Islamic banking with conventional banking. Haron and Noraffifah (2000) compared the amount of deposits related to the term deposit rates for both conventional and Islamic banking in Malaysia. By utilizing

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3 Early studies on Islamic banking are mostly in Arabic and Urdu. These studies are structurally different than modern finance papers since their main concern is to define and discuss the Islamic finance products and their eligibility. See Ariff (1988) for excellent discussion.
“Adaptive Expectation Model”, they have found that the expected returns of Islamic banks are highly correlated with the return rates offered by conventional banks. Moreover, they found evidence for customers who place their deposits at saving and investment account facilities are guided by the profit motive. Kaleem and Isa (2002) used VAR model to test for causality in returns between Islamic banks and conventional banks. Their results support significant competition between Islamic and conventional term deposit rates. They conclude that Islamic banking considers interest rates before adjusting its deposits returns. The rationale of causality link between term deposit rates is important to address general risk similarities between conventional banks and Islamic banks.

Generally, the most dominant source of risk is credit risk for banks. (Sundararajan (2007)). In Islamic banking, Shari’ah based tools for dealing with debt-based contracts changes the risk structure for Islamic banks compared to the conventional banks (Elgari (2003)). Boumedine (2011) empirically demonstrated that Islamic banks have lower credit risk than conventional banks. In the study, 9 conventional and 9 Islamic banks are studied and it is presented that the Islamic banks have lower default risk. In order to address the difference in risk structure, Chong and Liu (2009) used bivariate Grange Causality test to understand the term deposit rate linkages between Islamic and conventional banking in Malaysia. Their results suggest that the Islamic deposits are not very different from conventional deposits. So, they claim that the Islamic investment rates for both the banks and the finance companies are closely pegged to the conventional deposit rates which imply similar risk structure for both banking systems. Elfakhani and Hassan (2005) reached similar conclusion by analyzing the performance of 46 international Islamic mutual funds from 1997 through 2002. Based on the traditional measures of Sharpe, Treynor, and Jensen, their results suggest that the performance
of Sharia based funds and the chosen benchmark is very similar. Hassan and Bashir (2003) analyze how the performance of the Islamic banks is affected by overall financial environment. They utilize cross-country bank level data on Islamic banks in 21 countries for each year in 1994-2001 to closely examine the performance indicators of Islamic banks. In general, they find that financial market structure affects Islamic banks also. These studies support the evidence that general market structure, conventional banking and Islamic banking share causality. Addule and Kasim (2012) examine impact of global crisis both on Islamic and conventional banking. Their results suggest that there is no major difference in credit risk between the Islamic and conventional banks. However, the Islamic banks was holding more to a great extent of liquid assets than their counterparts and are exposed to less liquidity risk than their conventional banks counterparts. Shafique, Faheem and Abdullah (2012) analyzed the bank reports and reported that impact of global financial crises on Islamic banking system is comparatively severe compared to conventional banks. Rashwan (2012) found contradicting evidence which suggest that the effect of 2008 crisis is not significantly different but the Islamic banks outperformed in profitability to conventional banks. Hakan and Gulumser (2011) analyzes the response of the deposits and loans held at conventional and Islamic banks to interest rates using monthly data between 2005 and 2009 based on VAR methodology. Their results show that any change in the interest rates affects not only the deposits and loans of conventional banks but also such instruments of Islamic banks which can be taken as an evidence for causality link between both counterparts.

II. Data and Methodology

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4 There are many studies on the literature focuses on the performance comparasion between Islamic and conventiona banking. For example see Omar et al. (2007), Hussein and Omran (2005), Forte and Miglietta (2007), Alhaity and Ahmad (2008), Hoepner, Hussain, and Rezec (2011), Kader and Asarpota (2007). Literature on the performance comparasion is beyond the scope of this hence these studies are not discussed in this study.
Our aim is to find an answer to the hypothesis: “The Islamic banking is not very different from the conventional banking system so Islamic banking has no value in reducing the persistent risks in the financial market”. We utilize the term deposit rates for 9 conventional banks and participation rates for 4 Islamic banks from Turkey since term deposit rates are the most visual parameter so present the credit risks of the market. Also on the demand side, term deposit rates offered by two banking system is the main difference for customers. Our data set covers the monthly returns from 2005 to 2013. Average term deposit rates of the Islamic banks are calculated from the individual bank announcements whereas the average term deposit rates for conventional banks are obtained from the Central Bank of the Republic of Turkey (CBRT). Following figures shows the term deposit rates for 1 month, 3 months, 6 months and 12 months periods. Longer term deposit rates are higher than short term deposit rates for both conventional and Islamic banking. However fluctuations in term deposit rates are lower for Islamic banks compared to the conventional banks. This figure can imply that the Islamic banks react more transitionally. There is a clear picture of the effect of the crisis for conventional banking TDRs.

Figure 1: Term Deposit Rates for Islamic Banks
To elaborate more on the figures, we use Granger causality to address the causality link between Islamic and conventional banking. Granger (1969) presented the test to suspect the explanatory power of two series for each other. In our study, Granger Causality helps us to determine the linkages between two banking systems and their relation to each other give us inferences about if they do follow each other. Since the management of Islamic banking is different than the conventional banks, one could expect that the Islamic banks have no causality to the conventional banks; hence their profit sharing returns must not be linked to the interest rates offered by conventional banks (Kaleem and Isa (2003)).

Granger causality test is performed for the following model:

\[ TDR_{Islamic_t} = \alpha + \beta TDR_{Conventional_t} + \epsilon_t \]  

(1)

\[ TDR_{Conventional_t} = \alpha + \beta TDR_{Islamic_t} + \epsilon_t \]  

(2)

\( TDR_{Islamic_t} \) and \( TDR_{Conventional_t} \) represents the term deposit rates for both banks and the Granger causality test is applied for all 1 month, 3 months, 6 months and 12 months time periods.
However, in order to avoid the spurious take the first difference of the term deposit rates if they are non-stationary. We use the regular ADF unit root test to see if the series are stationary.

**III. Results**

First, ADF unit root test results are presented in Table 1. The test statistics were computed based on the regressions that include lags according to SIC offered lags. In every case except the 12 month term deposit rate series, the unit root test is not rejected. When the first differences are taken, t-stats give inferences that the first order differences are stationary. This indicates that the term deposit rates are integrated of order one.

<table>
<thead>
<tr>
<th>t-stats for Level Values</th>
<th>t-stats for First Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Month</strong></td>
<td>-1.42 (-3.86)***</td>
</tr>
<tr>
<td><strong>3 Months</strong></td>
<td>-1.52 (-3.24)***</td>
</tr>
<tr>
<td><strong>6 Months</strong></td>
<td>-1.60 (-4.23) ***</td>
</tr>
<tr>
<td><strong>12 Months</strong></td>
<td>(-2.65)* (-7.09)***</td>
</tr>
</tbody>
</table>

**Table 1: Unit Root Tests for both Islamic and Conventional Banks**

Before we make the Granger causality test, we search for the optimal lag periods. Both AIC and SIC criterion finds that 2 lag periods are significant. Since the unit root test is not rejected for the level values, we take the first difference of the TDR’s for both banking and use pairwise Granger causality test to determine the linkages between conventional and Islamic banking. Table 2 shows that the hypothesis conventional bank TDR differences do not cause the Islamic TDR differences is rejected at %5 levels. However the hypothesis cannot be
rejected at % 1 especially for 12 months maturity period. Hence the conclusion is not totally clear for the hypothesis that conventional banks TDR differences do not Granger cause the TDR differences of Islamic banks. On the other hand, Table 2 shows that the hypothesis the Islamic banks do not Granger cause conventional banks is rejected for all maturity periods. Since we use difference values of the TDRs, result imply that the changes in the interest rates do affect the changes in the PLS offered by the Islamic banks but this relationship does not work other way around.

Table 2: Granger Causality for both Islamic and Conventional Banks on Difference TDRs

<table>
<thead>
<tr>
<th></th>
<th>Conventional TDRs do not cause Islamic TDRs</th>
<th>Islamic TDRs do not cause Conventional TDRs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F Statistics</td>
<td>P Values</td>
</tr>
<tr>
<td>1 Month</td>
<td>4.75</td>
<td>0.01</td>
</tr>
<tr>
<td>3 Months</td>
<td>3.70</td>
<td>0.02</td>
</tr>
<tr>
<td>6 Months</td>
<td>9.18</td>
<td>0.00</td>
</tr>
<tr>
<td>12 Months</td>
<td>4.73</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Note: Significance levels: * % 10, ** % 5, *** %1.

We suspect that the result presented above can be affected by the 2008 crisis. As figure 2 depicts, there is a structural change in the term deposit rates for the conventional banks. As Perron (1989) shows, the unit root test are not reliable if there is a structural break in the data. In order to highlight the effect of the 2008 crisis we divide our data sample into two subsamples: before and after crisis periods. Table 3 gives the stationary test for the pre-2008 period.

Table 3: Unit Root Tests for both Islamic and Conventional Banks for pre-2008 Crisis Period

<table>
<thead>
<tr>
<th></th>
<th>ADF Test for Islamic Banks pre-2008 crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t-stats for Level Values</td>
</tr>
<tr>
<td>1 Month</td>
<td>(-4.20)***</td>
</tr>
</tbody>
</table>
Table 4: Unit Root Tests for both Islamic and Conventional Banks for post-2008 Crisis Period

<table>
<thead>
<tr>
<th>Period</th>
<th>ADF Test for Conventional Banks pre-2008 crisis</th>
<th>ADF Test for Islamic Banks post-2008 crisis</th>
<th>ADF Test for Conventional Banks post-2008 crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t-stat for Level Values</td>
<td>t-stats for First Difference</td>
<td>t-stat for Level Values</td>
</tr>
<tr>
<td>1 Month</td>
<td>(-2.16)</td>
<td>(-4.37)***</td>
<td>(-4.08)***</td>
</tr>
<tr>
<td>3 Months</td>
<td>(-1.52)</td>
<td>(-5.17)***</td>
<td>(-2.86)*</td>
</tr>
<tr>
<td>6 Months</td>
<td>(-2.60)</td>
<td>(-4.67)***</td>
<td>(-5.43)***</td>
</tr>
<tr>
<td>12 Months</td>
<td>(-0.77)</td>
<td>(-5.42)***</td>
<td>(-4.68)***</td>
</tr>
</tbody>
</table>

Note: Significance levels: * % 10, ** % 5, *** %1.

Table 3 and 4 shows that, when we divide our sample into pre and post crisis periods, the unit root test confirms the stationary of the TDRs for both conventional and Islamic banks. Results in Table 3 and 4 confirm that due to structural break, unit root test spuriously cannot reject the non-stationary hypothesis. Hence, Granger causality results in the Table 2 are also

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spurious. One should be cautious before reaching such a conclusion only by interpreting the results from the Granger causality tests.

Table 5: Granger Causality Tests for both Islamic and Conventional Banks pre-2008 Crisis

<table>
<thead>
<tr>
<th></th>
<th>Conventional TDRs do not cause Islamic TDRs</th>
<th>Islamic TDRs do not cause Conventional TDRs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F Statistics</td>
<td>P Values</td>
</tr>
<tr>
<td>1 Month</td>
<td>3.02</td>
<td>0.06</td>
</tr>
<tr>
<td>3 Months</td>
<td>5.68</td>
<td>0.00</td>
</tr>
<tr>
<td>6 Months</td>
<td>1.79</td>
<td>0.17</td>
</tr>
<tr>
<td>12 Months</td>
<td>1.30</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Table 6: Granger Causality Tests for both Islamic and Conventional Banks post-2008 Crisis

<table>
<thead>
<tr>
<th></th>
<th>Conventional TDRs do not cause Islamic TDRs</th>
<th>Islamic TDRs do not cause Conventional TDRs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F Statistics</td>
<td>P Values</td>
</tr>
<tr>
<td>1 Month</td>
<td>4.08</td>
<td>0.02</td>
</tr>
<tr>
<td>3 Months</td>
<td>10.46</td>
<td>0.00</td>
</tr>
<tr>
<td>6 Months</td>
<td>5.02</td>
<td>0.01</td>
</tr>
<tr>
<td>12 Months</td>
<td>6.76</td>
<td>0.00</td>
</tr>
</tbody>
</table>

When we use Granger causality test for both pre and post 2008 crisis period, Table 5 and 6 shows that neither conventional banking Granger causes the Islamic banking and nor the vice versa. Hence we can say that the Islamic banking has its own structure and the PLS ratios are not affected by the interest rates offered by the conventional banks.

Next we use VAR (Vector Autoregressive) model and associated impulse response functions to study the interactions between conventional and Islamic banking. VAR specifications are determined for 1 month, 3 months, 6 months and 12 months maturity periods as follows:

\[ Y_t = \alpha + \beta_1 \times Y_{t-1} + \beta_2 \times Y_{t-2} + \epsilon_t \]  

(3)
where \( Y_t = [TDR_{Conventional1}, TDR_{Islamic1}] \) and \( t=1 \text{ month}, 3, 6, 12 \text{ months maturity periods}.\)

The regression coefficient \( \beta_1 \) and \( \beta_2 \) estimates of the relationship between lead and lag variables. Number of lagged of endogenous variables are 2 which is set by SIC. Based on the VAR model, we employ impulse response functions to illustrate how the endogenous variables relate to each other over time. We replicate the VAR estimates and the impulse response functions for both pre and post 200 crisis period. Then we compare both impulse response functions to figure how the relationship developed before and after the 2008 financial crisis.

1 month maturity VAR estimations for the differenced values are:

\[
TDR_{Conventional1} = 0.00 - 0.64 \cdot TDR_{Conventional1-1} - 0.26 \cdot TDR_{Conventional1-2} + 0.05 \cdot TDR_{Islamic1-1} + 0.19 \cdot TDR_{Islamic1-2}
\]  
\begin{align*}
&(-1.01) \quad (5.86) \quad (-2.48) \quad (0.36) \quad (1.30) \\
TDR_{Islamic1} & = 0.00 - 0.05 \cdot TDR_{Conventional1-1} + 0.21 \cdot TDR_{Conventional1-2} + 0.08 \cdot TDR_{Islamic1-1} + 0.31 \cdot TDR_{Islamic1-2}
\end{align*}
\begin{align*}
&(-0.96) \quad (-0.75) \quad (2.98) \quad (0.85) \quad (3.17)
\end{align*}

Whereas before the crisis the VAR estimation for differences:

\[
TDR_{Conventional1} = 0.00 - 0.36 \cdot TDR_{Conventional1-1} - 0.24 \cdot TDR_{Conventional1-2} + 0.11 \cdot TDR_{Islamic1-1} + 0.34 \cdot TDR_{Islamic1-2}
\]  
\begin{align*}
&(0.61) \quad (2.13) \quad (-1.27) \quad (0.29) \quad (0.92) \\
TDR_{Islamic1} & = 0.00 - 0.07 \cdot TDR_{Conventional1-1} + 0.12 \cdot TDR_{Conventional1-2} + 0.53 \cdot TDR_{Islamic1-1} - 0.07 \cdot TDR_{Islamic1-2}
\end{align*}
\begin{align*}
&(0.66) \quad (1.10) \quad (1.82) \quad (3.33) \quad (0.49)
\end{align*}

and after the crisis:

\[
TDR_{Conventional1} = 0.00 - 0.65 \cdot TDR_{Conventional1-1} - 0.26 \cdot TDR_{Conventional1-2} + 0.16 \cdot TDR_{Islamic1-1} + 0.11 \cdot TDR_{Islamic1-2}
\]  
\begin{align*}
&(-0.94) \quad (4.59) \quad (-1.95) \quad (0.69) \quad (0.70) \\
TDR_{Islamic1} & = 0.00 + 0.14 \cdot TDR_{Conventional1-1} + 0.07 \cdot TDR_{Conventional1-2} + 0.44 \cdot TDR_{Islamic1-1} + 0.14 \cdot TDR_{Islamic1-2}
\end{align*}
\begin{align*}
&(0.08) \quad (1.93) \quad (1.06) \quad (3.49) \quad (1.78)
\end{align*}

Corresponding impulse response functions are given in Figure 3 and 4 which highlights the similar patterns. The shocks to the conventional banking only stay for 3 periods and vice
versa. But the endogenous shocks from the own banking sectors live for 4 periods. These results indicate that the relationship between conventional banking and Islamic banking is short lived. This result indicates that the Islamic banking PLS returns are not affected much from the conventional banking interest rates. This evidence supports the hypothesis that Islamic banking differs from the conventional counterpart. Moreover, impacts of the global crisis do not change the general picture in the causal relationship and also the linkage between both banking sectors. Hence, Islamic banking can be alternative source to the general risk structure of the economy.

Figure 3. Impulse Response Functions for 2002-2013 Period

Response to Cholesky One S.D. Innovations ± 2 S.E.
Figure 4. Impulse Response Functions for pre-Crisis Period

Figure 5. Impulse Response Functions for post-Crisis Period
IV. Conclusion

In this study, we studied the causal relationship between conventional and Islamic banking. We use TDRs offered by both conventional and Islamic banking. Our results suggest that there is no significant relationship between both banking sectors. This result can be interpreted as Islamic banks do not adjust their PLS ratios pegged to the interest rate offered by conventional banks. Also conventional banks determine their interest rate without any connection to the Islamic banking PLS ratios. Our overall results contradict the findings of studies which conclude that Islamic banking might not be different from the conventional banking. We report that inferences from pairwise Granger causality alone might be spurious since the analysis based on non-stationary series can be consequence of time functional characteristics of the time series. By subsampling the data for pre and post-crisis periods, Granger causality is rejected. Further studies can concentrate on the how Islamic banking reduces the systematic risk in the economy. This hypothesis can be tested by the efficiency tests on both banking structures. Moreover, further study with weekly or daily data can gasp the more efficient impulse response effects and can shed better light on the lead-lag relationship between the bort banking sectors.

References


Khan, M. Fahim, 1983. 'Islamic banking as practised now in the world' in Ziauddin, Ahmad et al. (eds.).


Appendix

Figure 5. Impulse Response Functions for 2002-2013 Period (3 Months Maturity)
Response to Cholesky One S.D. Innovations ± 2 S.E.

Figure 6. Impulse Response Functions for 2002-2013 Period (6 Months Maturity)
Response to Cholesky One S.D. Innovations ± 2 S.E.
Figure 7. Impulse Response Functions for 2002-2013 Period (12 Months Maturity)

Response to Cholesky One S.D. Innovations ± 2 S.E.