



Are Islamic Banks The Alternative to Commercial Banks?

Yusuf Dinc

Abstract: Islamic banks are financial intermediaries with the claim of being an alternative to commercial banks. Recently a considerable literature has been produced around the theme of whether or not the alternative presented in theory has been reflected in practice. However, these studies are exploratory and interpretative in nature. The quantitative researches presented thus by far provide indirect evidence for the central theoretical issue. To date, very little attention has been paid to the role of the relationship between interest rates and profit-share accruals. These studies have also suffered from shortcomings with regards to the methods applied. The primary aim of this paper is to provide empirical and theoretical evidence to the claim of Islamic banks to be alternative to commercial banks. It does so by investigating the relationship between profit share accruals and deposit rates by employing wavelet coherence method for the first time. This study uses longitudinal monthly data for the 2000 to 2018 period, particularly from Turkey, and provides an exciting opportunity to advance our knowledge about the structure of Islamic banking with focusing specifically on fund supply. The results have revealed that Islamic banks are an alternative to fund suppliers in short-term. In addition long-term maturities had shown a strong alternative characteristic in the pre-2006 period; however, they were unable to preserve it in the post-2006 period after the effectiveness of Banking Act No. 5411. Findings also show bidirectional causalities to be found in different periods. The findings have important implications for the market players and policy makers.

Keywords: Islamic banking, Wavelets, Participation banks, Special finance houses

JEL Codes: C01, G21, G29, Z12

Introduction

Islamic banks have emerged as the alternative to commercial banks, particularly in context of an interest-free financial system (Iqbal, 2001, p. 26). In spite of this, Muslims have not considered Islamic banks as the alternative due to lack of awa-

@ Assoc. Prof. Dr., Istanbul Sabahattin Zaim University. yusuf.dinc@izu.edu.tr



recess during their early years of development (Ariff, 1988, p. 60). Later, Islamic banking was recognized as the alternative from certain perspectives (Khan, 2010). Many studies have proven Islamic banks to diverge from their conventional counterparts when their ratios were analyzed through econometric models (Naceur & Samy, 2003; Yudistra & Donsyah, 2004; Cihak & Hesse, 2008; Beck et al., 2013). The difference that the business model brings has been influential on how Islamic banks exhibit their distinct characteristics. Islamic banks, which collect funds through a risk-based system, generate profits by incorporating the resources they've acquired into production through asset transfer. They share the profit they obtain at the end of the process with the fund holders.

The basic divergence occurs on return, as the output of collection performance. Instead of a guaranteed interest, they set up a risk sharing model and handle the financial intermediation activities. From this perspective, presenting profit accruals as an alternative to deposit rates makes Islamic banking a natural alternative to commercial banking.

Islamic banks, which perform activity through their designation as special finance houses were assessable as shadow banks prior to Banking Act No. 5411 that was enacted in Turkey on January 1, 2006, and have been called participation banks ever since. Islamic banks, which thus moved into a regulatory field, have been exposed to obligations similar to commercial banks within the framework of secular legislation and have lost their regulatory arbitrages. At the same time, the infrastructure called for by the interest-free business model had also been done away with after 2006.

Through the example of Turkey, this study compares the yields Islamic banks offer through fund-raising methods as the main determinant by examining whether or not they are an alternative to commercial banks. Addressing the period from June 2000 to January 2018 using monthly data, the weighted-average interest rates for 1-month and 3-month maturities are debated over the profit-share ratios that three participation banks have presented to accounts with 1-month and 3-month maturities. In Turkey, 88% of the participation funds on total deposits are in debit accounts or 3-month-maximum maturity accounts. For this reason, comparing deposits and participation funds with maturities longer than three months has not been felt necessary (Dinc, 2017, p. 74).

The wavelet coherence model is one of the most effective methods in researching alternative characteristics. This study has employed wavelet correlation and coherence methods which are pioneering qualitative methods for statistically pro-

ving alternativeness. Previous studies have generally focused on causative relationships. This study fills a significant gap in the literature in this respect.

The findings show that Islamic banks offer an alternative with regards to short-term maturities. However, when considering long-term maturities, the strong alternative structure of the special finance houses had disappeared after the change in participation banking. One of the Islamic banks included in the review did not reveal this quality even on medium-term maturities while emerging as the alternative on short-term maturities. Results also show bidirectional casualties.

At the same time, participation banks reveal alternative structures in crisis periods. Alongside this, the secular legislation infrastructure is understood to have distanced Islamic banks from their original model.

The findings are important for investors who oversee short-term and long-term maturities, for professionals in the field as well as researchers who work on this issue.

Literature Review

Studies over the past two decades have provided important information on Islamic banking. A considerable amount of literature has been published on comparative analyses between the conventional and Islamic financial institutions. However, debate continues about the differentiation between both banking models. Most of these studies have only taken into account certain performance indicators. Much uncertainty still exists about the relationship between the overall outputs for fund suppliers of two different banking models.

Examining the relationship between the profit shares distributed to participant accounts and the deposit interest rates in Malaysia and Turkey using cointegration and Granger-causality tests on monthly data covering the period from 1997 to 2010, Charap and Cevik (2011) found that profit shares were positively correlated with deposit interest rates and deposit rates cause return on profit shares.

Using the Malaysian sample of data stretching from 1996 to 2011 and applying the cointegration analysis, Latiff and Halid (2012) found that the rates were positively related in the pre-2004 period, and, afterwards, they turned to be inversely related because of regulations on profit equalization reserve.

Ergeç and Arslan (2013) investigated the relationship between interest and profit share rates using the vector-error correction model for the 2005-2009 period. The study, which addressed the sample from Turkey, showed that profit shares were influenced by interest rates.

Yusoff (2013) examined the 2009-2012 period in his study investigating the causality relationship between profit-share rates and interest rates for Malaysian banking system. The study which employed Toda-Yamamoto technique found bi-directional causalities.

Ito (2013), whose study examined a sample from Malaysia and reviewed the relationship between deposit interest and profit-sharing returns, applied the causality test for the period of 2005-2012. Ito showed deposit interest to be affected by profit shares in 3-, 6-, and 12-month maturities. Ito (2017) extended the addressed period to 2005-2014, which further confirmed the findings.

Strong association between the profit share and interest rate was also found by Anuar et al. (2014) on Malaysian market covering 1994-2012 period. They employed Granger causality and found deposit interest rates have unilateral effect on profit-sharing rates.

Similar conclusions are made by Hussan and Masih (2014) for the Malaysian market by employing the cointegration analysis on data ranging from 2004 to 2013.

Investigating the long-term relationship between the profit shares and deposit interest rate in Turkey by employing the cointegration analysis on data covering the 2002-2013 period, Saraç and Zeren (2015) found that significant links between the rates do exist (except in case of one bank).

The study of Ata et al. (2016) focusing on Turkish market for the years between 2004 and 2014 revealed that profit-sharing rates Granger-cause deposit rates in 1-, 3-, and 6-month maturities, while bidirectional relationships are found in 12-month maturities.

The study of Adewuyi et al. (2016), one of the few multi-country studies, examined the long-term cointegration relationship between deposit interest and profit-share rates. The findings show the existence of two-way causality between profit-share rates and deposit interest during the addressed 2007-2015 period.

Tekin et al. (2017) examined the relationship between interest and profit shares in Turkey in particular in their study addressing the 1998-2016 period. By detecting extensive correlation when market volatility is low, the study, which had applied boundary testing, cointegration, and the Granger causality test, observed the decrease in correlations in the 2001 and 2008 crises.

Addressing crisis periods is important for revealing the differentiation. Aysan et al. (2016) addressed a sample from Turkey for the period of 2004-2012 in their

study investigating the behaviors of participation and commercial banks during times of crisis. The findings of the study, which used the risk-exposure method, showed the behavior of the two bank groups to diverge in times of crisis and the participation banks to provide protection in difficult times.

Meslier et al. (2017) addressed the period of 2000-2014 through an investigation of the relationship of deposit interest and profit shares in dual banking systems over their study of 20 countries. The findings confirmed differentiation to exist. Commercial banks were found to have relatively higher rates in Muslim societies while interest-free banks presented higher rates in non-Muslim societies. In the study, the profit-share rates of interest-free banks were revealed as the determinant of deposit interest. Çetin's (2017) study, which used simulation, compared the deposit-interest and profit-share rates of the 2005-2015 period for a Turkish sample and arrived at the result that profit shares present higher yields.

Yüksel et al. (2017) dealt with the causal relationship between interest and profit-share rates on studies investigating Turkey in particular. The result of the study, which examined the period of 2000-2016, showed the relationship between deposit interest and profit shares to be strong. The study put forth the view that the effect, which was claimed to be shaped by other variables, was unable to yield divergence in dual systems.

Korkut and Ozgur (2017) conducted a research on the link between profit share accruals and deposit rates by employing Ordinary Least Square (OLS) method. They found significant positive correlation between the two rates, which is argued to exist because of murabahah. However, Dinç (2018) showed in his research that the main factor behind the link is the inflation which is the key determinant of credit rates and the murabahah rates.

Koç's (2018) study examined whether or not the interest rates of participation and commercial banks in Turkey were exposed to risk. The study, which addressed the period of 2005-2016 using the unrelated regression model, showed the interest rates of both banking systems to be exposed to similar risk. The empirical findings of the study provide a parallel understanding with previous researches that rates cannot be alternative to each other empirically.

Arıcan and Çetin (2018) employed simulation and examined the relationship between the deposit rates and profit share accruals for 2005-2015 period. They found strong positive correlation between these two variables which implies a non-alternative structure.

No study applying the wavelet coherence method for revealing the relationship between deposit interest and profit-share rates could be found in our investigation. At the same time, no study is found to have examined the pre- and post-2006 statutes of interest-free financial institutions in Turkey. Again, studies have examined the relationship by separating it into types according to participation accounts and deposit maturities; however the finding has not been presented for investors with short-, medium- or long-term maturities.

From this perspective, the examination done in this study reveals the relationship of profit-share rates (Turkey's interest-free financial institutions had proposed this in the statutes for special finance houses and participation banks) with deposit interest during the relevant periods, at the same time examining the relationship that emerges in times of crisis. Alongside this, the alternative relationships of short-, medium-, and long-term maturities are also shown.

Research Methodology

Data

The weighted-average deposit interest is compared with the profit shares paid to participation accounts for revealing whether or not participation banks present an alternative to commercial banks.

The 1-month and 3-month maturity profit shares of alBaraka Turkish Participation Bank, Türkiye Finans Participation Bank, and KuveytTürk Participation Bank taken from the Participation Banks Association of Turkey (PBAT) database were compared with the weighted-average deposit interest rates of 1-month and up to 3-month maturities taken from the Central Bank of the Republic of Turkey (CBRT) for each of the deposit/participation funds' two maturity groups, as they had largely gathered in maturity accounts of 1-month or up to 3-months. The data covering the period from June 2000 to January 2018 is monthly and includes the data of participation banks that were operating during this period.

Methodology

Over the past decade, wavelets gained wide acceptance in the field of economics and finance (for example, Pal & Mitra, 2019; Nagayev & Dinç, 2018; Altarturi et al., 2016). The important feature of wavelets is that it can handle both stationary and nonstationary data. Another benefit of wavelets is its ability to decompose ('denoise') the original data and present it in the time-scale dimensions, which is

helpful for analyzing the long-term low-frequency (high scale) movements based on short-term high-frequency (low scale) movements. Wavelets are categorized into two groups: discrete and continuous.¹

To address the research objective, we employ wavelet correlations and wavelet coherence techniques. Firstly, we decompose the time series data (i.e. the deposit interest and profit shares in participation accounts) using wavelet transformation method which produces the vectors of wavelet and scaling coefficients. Then, we estimate correlations between the variables over various time scales (horizons) using the ‘treated’ data.

The wavelet correlation analysis uses the maximal overlap discrete wavelet transform (MODWT) built on the Daubechies least asymmetric family of wavelets - LA(8). Wavelet correlation can be defined (Baruník, Kočenda, & Vácha, 2016) as:

$$(1) \quad \rho_{xy}(j) = \frac{\text{cov}(W_x(j, s), W_y(j, s))}{[\text{var}(W_x(j, s))\text{var}(W_y(j, s))]^{\frac{1}{2}}} \equiv \frac{r_{xy}(j)}{v_x(j)v_y(j)}$$

where $W_x(j, s)$ and $W_y(j, s)$ are vectors of the MODWT wavelet coefficients for time series $x(t)$ and $y(t)$ at scale j . So, the estimator of the wavelet correlation (1) can be rewritten as:

$$(2) \quad \rho_{xy}(j) = \frac{\text{cov}(W_x(j, s), W_y(j, s))}{[\text{var}(W_x(j, s))\text{var}(W_y(j, s))]^{\frac{1}{2}}} \equiv \frac{r_{xy}(j)}{v_x(j)v_y(j)}$$

Where: $r_{xy}(j)$ is the estimator of wavelet covariance at scale j , whereas $v_x(j)$ and $v_y(j)$ are estimators of wavelet variance and covariance, respectively (Baruník et al., 2016).

Wavelet coherence is another advanced multi resolution analysis tool that allows to consider not only the time and frequency dimensions, but also the strength of association between the time-series variables (Nagayev, Disli, & Ng, 2016; Bredin, 2015). It is based on continuous wavelet transformation. The continuous wavelet transform (CWT) is obtained by applying a mother wavelet ψ on the tested time series $x(t) \in L^2(R)$, which can be presented in the following form:

¹ For the further details on the wavelets and its application in economics and finance, please refer to Addison (2017), In and Kim (2013), Crowley (2007), and Gençay, Selçuk, and Whitcher (2001).

$$(3) \quad W_x(j, s) = \int_{-\infty}^{\infty} x(t) \frac{1}{\sqrt{s}} \psi\left(\frac{t-j}{s}\right) dt$$

Where: the integer j determines the exact position of the wavelet in the time domain, while the integer s defines how the wavelet is stretched, i.e. its position in the frequency domain.

To assess the degree of association between two vectors, we employ the wavelet coherence which can be defined as:

$$(4) \quad R_n^2(s) = \frac{|S(s^{-1}W_n^{xy}(s))|^2}{S(s^{-1}|W_n^x(s)|^2) \cdot S(s^{-1}|W_n^y(s)|^2)}$$

Where: S represents a smoothing operator in both time and scale, s is a wavelet scale, and are the continuous wavelet transforms of the time series X and Y , respectively, and is a cross wavelet transform of two variables (Madaleno & Pinho, 2012).

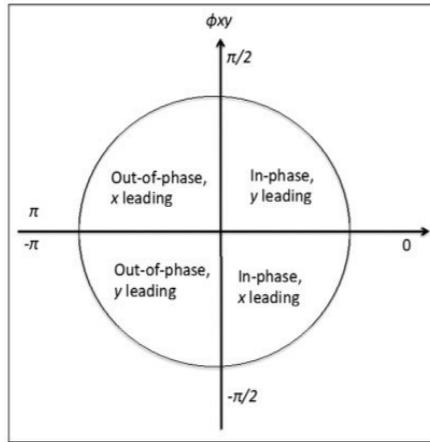


Figure 1. Phases in Wavelet Coherence from Bashir et al. (2016)

Wavelet coherence results are graphically visualized in form of ‘hot’ (red zones with strong correlation) and ‘cold’ (blue zones with low correlation) regions. The phase difference between the variables is indicated by arrows (Figure. 1). Arrows pointing to the right shows that the variables are in-phase (positively related), and the ones pointing to the left means out-of-phase (negatively related). Phases also

capture the lead-lag relationship between two time series. Arrows pointing to the southeast (or northwest), shows that X is leading, while Y is lagging. Similarly, arrows pointing to the northeast (or southwest), indicate that X variable is lagging, whereas Y is leading.

Empirical Findings

Preliminary results

A marked difference is seen at the beginning of the examined period between the deposit interests and the profit-share rates of participation accounts. However, a slight parallel trend is seen from *Figure 1* and *Figure 2* for 1-month and 3-month maturity deposit and profit shares during 2006-2018 period.

This initial findings imply that after effectiveness of Banking Act No 5411 the characteristics of Islamic banks resemble to their conventional counterparts, although interest rate generally offers higher yields. Moreover, lower rate deposits that public conventional banks collect from public institutes are also included in the weighted-average data.

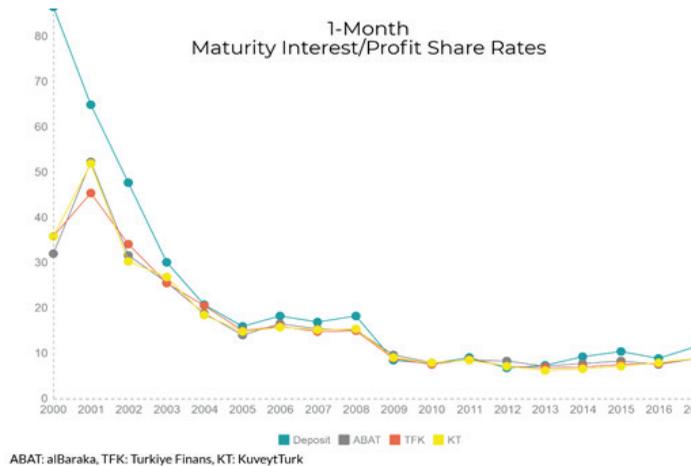


Figure 2. 1-month maturity deposit interest and participation banks' profit shares from CBRT, PBAT

A marked differentiation could emerge over the trend when addressing data apart from public institute funds. This situation has been included simultaneously among the constraints of the study. Since data excluding public funds could not be reached, hence examinations were conducted over the general averages.

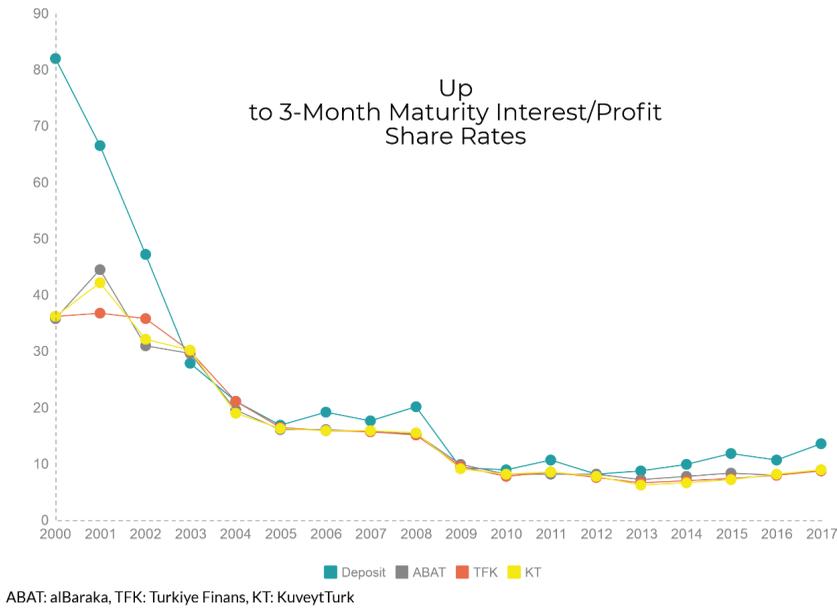


Figure 3. 3-month maturity deposit interest and participation banks’ profit shares from CBRT, PBAT

Table 1 below presents descriptive statistics of time series of variables. Deposits have the highest volatility. The fat tail rate series is apparent from the excess kurtosis of all rates, particularly for the deposits, hence indicating that extreme values are expected more. Profit-share rates are skewed to the right implying a tendency towards positive values.

Table 1.
Descriptive Statistics

Statistics	Deposit	ABAT	TFK	KT	Deposit	ABAT	TFK	KT
	1-month	1-month	1-month	1-month	3-month	3-month	3-month	3-month
Mean	11.65	12.72	12.79	12.87	13.65	13.62	12.87	13.06
Minimum	5.29	6.21	6.12	5.66	6.59	6.29	6.26	5.74
Maximum	7016.42	45.95	40.55	47.13	104.20	46.42	36.14	36.42
St.Deviation	481.23	11.83	11.48	12.19	19.50	11.27	10.44	11.06
Coef.Variation	41.31	0.93	0.90	0.95	1.43	0.83	0.81	0.85
Skewness	211.27	1.43	0.67	0.95	4.63	0.64	-0.26	-0.20
Kurtosis	14.52	1.54	1.36	1.41	2.15	1.30	1.05	1.06

Note: ABAT is alBarakaTurk Bank; TFK is Turkiye Finans Bank; and KT represents KuveytTurk Bank.

Empirical Results

Table 2 presents wavelet correlation outputs. The differences can also be seen between pre-2006 and post-2006 periods. The results show mainly negative correlation during 2000-2006 while positive correlation from 2006 to 2018 though different Islamic banks have separate findings. Especially for 3-month maturity profit-shares, all Islamic banks have negative correlation in mid and long term horizons in pre-2006 period. The results are similar for short-term horizon except for alBarakaTurk. For 1-month maturity again all Islamic banks profit shares have negative correlation in long-term. For mid-term only KuveytTurk and for short term only alBarakaTurk have negative correlation in the same period.

Term	D:ABAT	D:TFK	D:KT	D:ABAT	D:TFK	D:KT
Pre-2006		1-month			3-month	
ST	-72.9%	33.7%	15.2%	24.51%	-22.03%	-20.12%
MT	53.8%	75.6%	-33.4%	-23.52%	-46.11%	-27.69%
LT	-8.4%	-26.1%	-22.4%	-48.06%	-59.54%	-51.02%
Post-2006		1-month			3-month	
ST	-10.63%	-15.28%	7.65%	-29.04%	-28.73%	18.02%
MT	23.36%	11.29%	47.28%	-3.62%	14.13%	48.62%
LT	52.50%	69.09%	62.08%	34.27%	64.08%	55.88%

Note: *ST* stands for short term; *MT* – medium term; and *LT* – long term; *D* is for deposits. *ABAT* is alBarakaTurk Bank; *TFK* is Turkiye Finans Bank; and *KT* represents KuveytTurk Bank.

In the post-2006 period alBarakaTurk and Turkiye Finans banks have negative correlation for only short-term horizon for both 1-month and 3-month maturity. KuveytTurk has negative correlation only for 3-month maturity mid-term horizon.

1-Month Maturity Wavelet Coherence Results

When comparing weighted-average interest rates of deposits with those of the monthly profit-shares, alBarakaTurk Participation Bank is seen to have developed an alternative on short-term horizon throughout the entire period. Figure 4 illustrates the wavelets coherence results for 1-month maturity rates of deposit and alBarakaTurk profit-share rates. At the start of the period in the 2001 crisis, alBarakaTurk presented a strong alternative on short-term horizon.

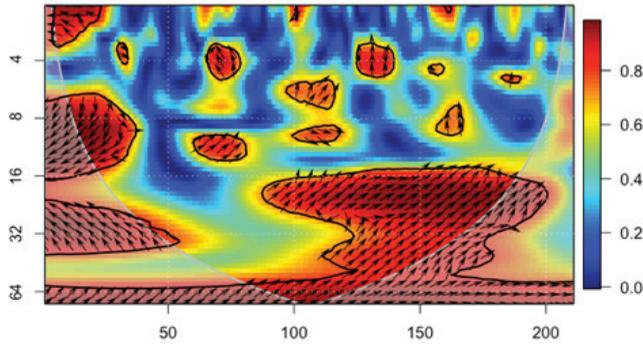


Figure 4. 1-month maturity profit shares and deposit interest (alBaraka Türk)

While a strong alternative structure was presented on long-term maturities in the pre-2006 period, this characteristic is seen to have been lost in the 2006 and beyond. While the findings continued to prove the claim of being an alternative for short-term horizon in the post-2006 period as well, a high positive correlation emerged in long-term. In addition, bidirectional causalities are seen in the results in different periods. This can be considered as the anticipated inflation effect.

The results are similar for Türkiye Finans Participation Bank's profit shares over 1-month deposit rates. Figure 5 demonstrates the wavelets coherence results for 1-month maturity deposit rates and Türkiye Finans profit-share rates. The alternative characteristic on short-term horizon is seen to have been reflected throughout the entire period. Profit-share rates in the short-term horizon are seen to have been presented the same structure especially in the period of the 2008 global financial crisis and in 2013 when the Gezi protests were experienced.

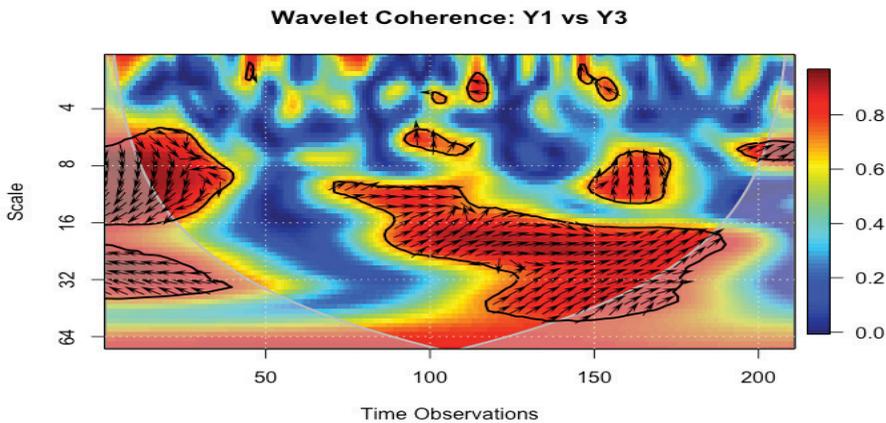


Figure 5. 1-month maturity profit shares and deposit interest (Türkiye Finans)

The strong alternative characteristic, which had been seen in the pre-2006 period on long-term horizon, became lost in the 2006 and later period again like alBarakaTurk. Besides bidirectional causality is seen between rates since the inflation had upward and downward trend during the period.

KuveytTurk Participation Bank, similar to the other participation banks, succeeded in developing an alternative characteristic on short-term but not long-term horizon. *Figure 6* displays an overview of the wavelets coherence results for 1-month maturity rates of deposit and KuveytTurk profit-share rates. The strong alternative structure seen on medium-term horizon in the pre-2006 period, dwindled during the 2010-2012 period. However, it again emerged on same horizon in the 2013-2014 period. This period is significant as it is when the gold account introduced by KuveytTurk and followed by immediate volume hike.

KuveytTurk Participation Bank's monthly participation accounts on short-term horizon can be dealt with as the alternative to deposits throughout the entire period. However, it should be noted that the relationship is not strong. Parallel to previous results bidirectional causality is seen for KuveytTurk as well. The causality effect is the same for the 3-month period results.

The common business model for Turkish Islamic banks is the main factor of similar results for all three examined institution. Accordingly, Islamic banks exhibit the conversion effect from special finance houses to fully regulated participation banks.

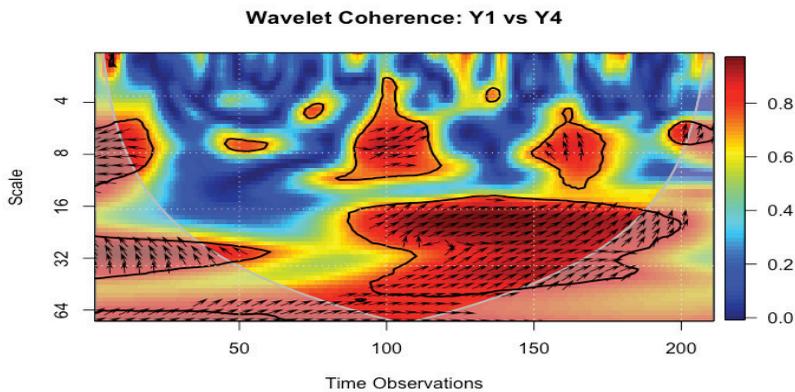


Figure 6. 1-month maturity profit shares and deposit interest by KuveytTurk

3-Month Maturity Wavelet Coherence Results

AlBarakaTurk Participation Bank had presented its alternative characteristic in short-term horizon throughout the period for 3-month maturity, as well. *Figure 7* provides the results obtained from wavelets coherence for 3-month maturity rates of deposit and alBarakaTurk's profit-share rates. Alternative structure appears strongly detached during the 2008 global financial crisis in particular.

Again the sustainability of alternative characteristic could not be preserved in the post-2006 period for mid-term horizon while it is strong before 2005. The same happens in long term horizon.

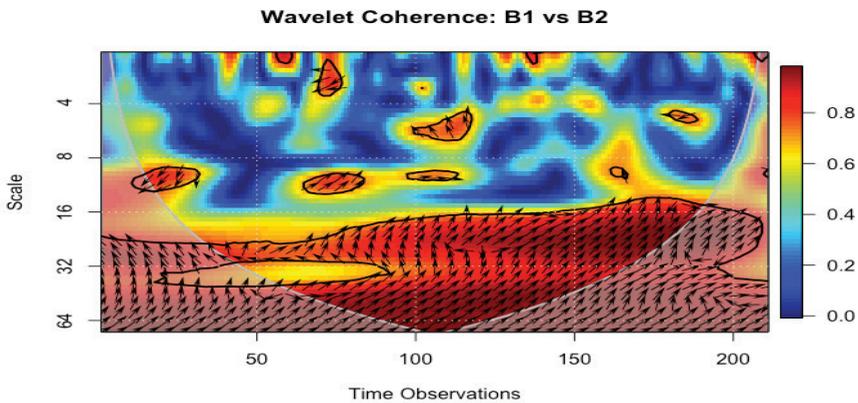


Figure 7. 3-month maturity profit shares and deposit interest (alBarakaTurk)

Figure 8 displays the statistics for wavelets coherence for 3-month maturity rates of deposit and Türkiye Finans profit-share rates. The alternative characteristic, which was strong during 2009, continued till the last years of the period for short-term horizon. However, it disappeared after 2017. For mid-term horizon the alternative structure was strong after the 2001 crisis except 2008-2011 period which again sustained post 2011.

Unlike alBarakaTurk, Türkiye Finans was unable to present itself as strong alternative before 2005 on long-term horizon. In the post-2006 period, it completely converges to deposit interest.

The findings show divergence among participation banks while explaining the relationship of deposit rates and the profit shares. Results for alBarakaTurk have more significant Islamic bank characteristic than the others during the pre-2006 period.

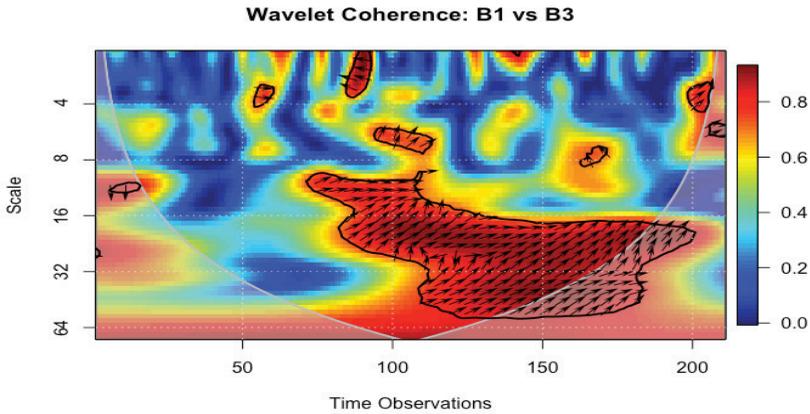


Figure 8. 3-month maturity profit shares and deposit interest (Türkiye Finans)

Wavelets coherence results for 3-month maturity rates of deposit and Kuveyt-Türk profit-share rates are presented in Figure 9. KuveytTürk is the largest participation bank through its strong performance in the last 5 years with increasing gold account volume.

KuveytTürk Participation Bank has generally presented an alternative characteristic to interest rates in 3-month maturity on short-term but not on long-term horizon. However, this effect is not strong. Its alternative feature on short-term horizon was lost during 2015. The results are very similar to Türkiye Finans participation bank.

The alternative structure cannot be found for mid-term horizon during the 2008-2012 period. However, a strong alternative structure was exhibited throughout 2014-2016.

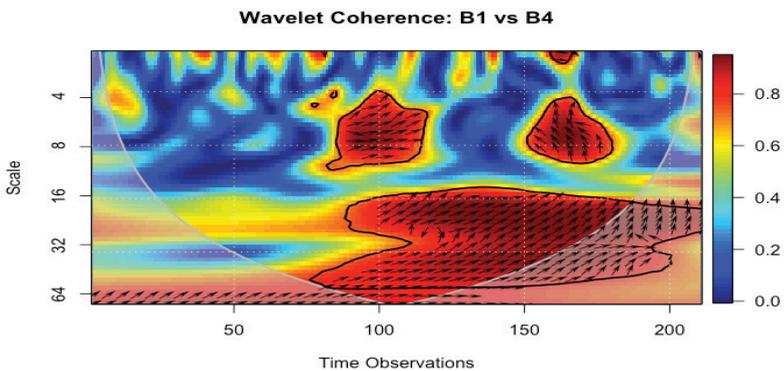


Figure 9. 3-month maturity profit shares and deposit interest (KuveytTürk)

Within the results KuveytTurk provides a structure similar to the other participation banks. As it cannot be said to have brought a strong alternative against deposit interest through the profit shares it presented on both 1-month maturity accounts and up to 3-month maturity accounts in long-term horizon.

The results till now imply negative effect of being fully regulated for post-2006 period or positive effect of regulative arbitrage for pre-2006 period in the context of alternative characteristic.

Conclusion

Islamic banks have emerged as an alternative to commercial banks. The fund collection method that proposes risk-based profit sharing in the face of a guaranteed interest rate is at the center of alternative characteristic. So, the proper address of examining whether or not Islamic banks can be treated as an alternative is profit share rates. To date, however, there has been no conclusive evidence that explains the positioning of Islamic banking in the market.

This study employed wavelet coherence analysis to have concrete evidence on alternative characteristic of Turkish Islamic banks. The findings mainly show participation accounts and deposit accounts to be alternatives to each other on short-term horizon when examining both the 1-month maturity and up to 3-month maturity profit-share rates and deposit rates. KuveytTurk is not significantly different from other Islamic banks, in line with the findings of Sarac and Zeren (2015). The divergence is evident at the beginning of the period, particularly when hitting the 2001 crisis. Also the results support the findings of Aysan et. al. (2016) for the other crises periods.

However, no differentiation emerged on long-term horizon. So, to conclude, the participation accounts bring an alternative on short-term horizon against deposits, yet it cannot sustain in long-term.

It can be implied that the participation banking business model has not been applied efficiently. The alternative structure on short-term shows the business model is efficient at performing financing first and offering profit share later. Long-term horizon has significant advantages to support our conclusive arguments when dividing the period into two since Islamic banks showed strong alternative characteristic in the pre-2006 period through their profit shares. Turkish Islamic financial institutions can be assessed as a short-term alternative in the pre-2006 period when special finance houses were active. A strong alternative structure rose on long-term horizon in the same period. To conclude we may say that for long-term further studies need to be performed with inclusion of inflation.

In the post-2006 period, conversion of special finance houses into participation banks ruined their alternative essence. Participation banks can be considered to have converged with commercial banks through Banking Act No. 5411, which went into effect on January 1, 2006. The regulative arbitrage that was exploited in the pre-2006 period can also be mentioned with the resulting effect. Also, different trends in inflation brought bidirectional causality. The results are parallel to Latiff and Halid's (2012) findings on regulatory changes but in opposite direction.

The effect of the legislative change shows that the secular regulatory structure has adversely affected the characteristics of Islamic banks. Developing separate legislation is a necessity for revealing the uniqueness of Islamic banks.

In addition, bidirectional causality is found during the period between deposit rates and profit shares, similar to findings of Latiff and Halid (2012), Yusoff (2013), Adewuyi et. al. (2016), Ata et. al. (2016), but contradict the results of Charap and Cevik (2011), Ito (2013; 2017) and Anuar et. al. (2014). The direction of inflation trend needs to be considered before reaching a concrete conclusion on causalities.

The results show that for Islamic banks to be able to sustain the claim of being the alternative, their distinguishing characteristic needs to reemerge strongly. Otherwise the findings imply that there is a gap between Islamic banking in theory and practice

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